Appendix 1

Course Syllabi
and
Outlines

KANSAS STATE UNIVERSITY | Architectural Engineering and Construction Science

240 Seaton Hall, Manhattan, KS 66506-2903 | (785) 532-5964 | http://www.are-cns.ksu.edu

CNS 016 – CNS Seminar

Administrator: **Shannon Casebeer**
Office: **254A Seaton Hall**
Office Hours: **See hours posted by office door**
E-mail: **scasebeer@k-state.edu**
Office Phone No.: **(785) 532-3573**

Course Description:
Presentations by construction-industry professionals, Construction Science & Management faculty and CNS student organizations regarding construction: projects, operational practices employed, logistical challenges encountered/resolved and career paths that are possible in our industry with a KSU degree in Construction Science and Management.

Class Schedule: Thursdays **Time:** 4:30-5:20pm **Location:** K-State Student Union: Forum Hall
Seminar Dates are Posted at http://www.k-state.edu/are-cns/seminar/seminar.html

Student Learning Outcomes:
Upon completion of this course, the student shall demonstrate the following proficiencies:

1. Possess a broader understanding of professional applications of a Construction Science and Management undergraduate degree.
2. Possess an uderstanding of the student/national professional organizations and of the personal and professional opportunities / activities they provide for students and industry professionals.

Evaluation:

Grade Scale:

CR (credit)	=	Attendance of **ALL** 4 out of 4 seminars per semester.
NC (no credit)	=	Attendance of less than 4 out of 4 seminars per semester.

Evaluation Values:

Proof of attendance by individual original signatures will be collected at each seminar to count towards course credit. ***Note*** - failure to sign the attendance sheet will result in NO CREDIT for that seminar date. Be prepared to show a current and valid KSU Student Photo ID as proof of identity if so requested by seminar faculty or student seminar staff.

Attendance:

All CNS Students ARE REQUIRED to attend all four CNS seminars each semester.

However, students are **allowed to use only one(1) Architectural Engineering(ARE) seminar as a make-up** if they are unable to attend one of the CNS seminars. **All other make-up credits shall be approved in advance by the Administrator.** Prompt and timely attendance is **required** in this course, as it will be in a professional office and in all your other courses. Attendance sheets will be collected promptly at the start of each seminar, so late arrival and missing the sign-in will result in NO CREDIT for that seminar date. The Administrator may consider emergencies or other legitimate issues on a case-by-case basis.

Signing the attendance sheet for someone else is a violation of the K-State Honor System.

`Attendance Make-up – Writing 10-Page Research Paper

Students who miss seminar(s) or fail to obtain make-up approval from the Administrator will be required to write one 10-page paper for each missed seminar. Each research paper will be a typed (double-spaced, 1" margins, 12 pt. Arial or Times New Roman font) paper based on performing your own research on a topic **assigned by the Administrator**. Each paper must include a cover page and bibliography page of all sources utilized in the preparation of the paper. The cover

Disclaimer: The Administrator reserves the right to modify or add items to this syllabus at their discretion.

and bibliography count toward the 10 page minimum requirement. Other topics may be considered but **MUST BE APPROVED IN ADVANCE** by the Instructor. Papers are due by the last day of classes for the semester to receive a CR grade for the current semester. If papers are not received within the allotted time, a grade of NC will be issued and a "HOLD" will be placed on a student's ability to enroll or modify courses in ISIS. Students submitting a paper for a previous semester can submit at any time in order to have the "HOLD" lifted from their account.
One 10-page research paper (or alternate make-up option as determined by the Administrator) is required for each missed seminar.

Textbook / Required Materials:
None

ARE/CNS Departmental Classroom Policy:
All students are expected to be respectful and attentive during these seminars. All cell phones, PDAs, and electronic devices are to be turned off - no exceptions. Food, drinks, smoking, or chewing tobacco are strictly prohibited. Please keep the auditorium clean by properly disposing of all trash at the end of seminar. If you are observed by faculty to be sleeping or violating any of these policies, the action will be noted on the sign-in sheet by your name, and you will not receive credit for the seminar. As in other departmental classes and in the professional world, responsible adult behavior is expected during seminars. Remember too, that seminar presenters may be or work for a potential future employer. Know that your behavior affects the public image of Kansas State University and our ARE/CNS Department.

University and College of Engineering Policies:

Statement Regarding Academic Honesty
Kansas State University has an Honor System based on personal integrity, which is presumed to be sufficient assurance that, in academic matters, one's work is performed honestly and without unauthorized assistance. Undergraduate and graduate students, by registration, acknowledge the jurisdiction of the Honor System. The policies and procedures of the Honor System apply to all full and part-time students enrolled in undergraduate and graduate courses on-campus, off-campus, and via distance learning. The honor system website can be reached via the following URL: www.ksu.edu/honor. A component vital to the Honor System is the inclusion of the Honor Pledge which applies to all assignments, examinations, or other course work undertaken by students. The Honor Pledge is implied, whether or not it is stated: "On my honor, as a student, I have neither given nor received unauthorized aid on this academic work." A grade of XF can result from a breach of academic honesty. The F indicates failure in the course; the X indicates the reason is an Honor Pledge violation.

Statements for Academic Accommodations for Students with Disabilities*
"Any student with a disability who needs a classroom accommodation, access to technology or other assistance in this course should contact Disability Support Services and/or the Instructor."

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* Students with disabilities include those having mobility impairments, visual and hearing impairments, chronic health conditions, learning disabilities and attention deficit disorder. DSS is located in Holton Hall 202. The Director, Andrea Blair, can be contacted at 532-6441.

Statement Defining Expectations for Classroom Conduct
All student activities in the University, including this course, are governed by the Student Judicial Conduct Code as outlined in the Student Governing Association By Laws, Article VI, Section 3, number 2. Students who engage in behavior that disrupts the learning environment may be asked to leave the class.

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KANSAS STATE UNIVERSITY | Architectural Engineering and Construction Science

ARE100 / CNS100 ARE/CNS Orientation
Spring 2015

Instructor:	**Katie Loughmiller**
Office:	**Seaton 230**
Office Hours:	**Posted on Door**
E-mail:	**loughmil@k-state.edu**
Office Phone No.:	**(785) 532-3576**

Course Description

Introduction to construction science and management. Promotion of interaction and connection with the department as well as a network of academic and professional networks through the use of learning communities. Familiarize entering students with the nature of the architectural, engineering, and construction industry with an emphasis on terminology and professionalism.

Class Schedule: MW 2:30-3:20 Seaton 221

Student Learning Outcomes

Upon completion of this course, the student should demonstrate the following proficiencies:

1. Demonstrate knowledge of departmental, college and university procedures and resources.
2. Identify potential career opportunities in the fields of Architectural Engineering and Construction Science.
3. Apply knowledge of building industry and present both in writing and orally as a part of a team research project.

Evaluation

Grade Scale:

93-100	= A
85-92	= B
78-86	= C
70-77	= D

Approximate Evaluation Values:

Homework	400 points
Attendance	400 points
Research Project	200 points
Total Possible	1000 points

Homework: Homework assignments will be given weekly. All assignments will be due on Wednesdays by no later than 5:00pm via K-State Online, unless indicated otherwise by the instructor. No late work will be accepted. No assignments received via e-mail will be accepted.

Research Project: Each Learning Community will be required to submit a research paper and poster at the end of the semester. This project is designed to expose students to the process of research and provide the opportunity to learn more about a specific topic related to Architectural Engineering and Construction Science. Grading for the research project will be done using the following breakdown of points.

Research Topic:	20 points
Research Outline:	30 points
Research Paper:	100 points
Research Poster:	50 points

Attendance Requirements:

Attendance is expected for all class periods. Attendance will be taken daily in the form of a quiz. Attendance will account for 400 points of your overall grade. Each student will be allowed 2 absences throughout the course of the semester. For each additional absence your attendance grade will be reduced by 50 points (5% of overall course grade). Any student with 8 or more absences will be required to retake the course. Excused absences will not be allowed. If a student has a medical or family emergency you must contact the dean's office and they will notify all of your instructors.

Late Work:
All homework is due at the time, date and location specified. Late work will not be accepted.

Text / Reference Materials
Optional Text: Building Construction Illustrated, Fifth Edition by Francis D. K. Ching

Course Topics:

General Topics:
Time Management, Study Habits, Financial Aid, Scholarships, DARS Reports, Transcripts
Departmental Topics:
Intro to Profession, Student Organizations, Internships, Resumes, Curriculum, Flowcharts, Pre-Enrollment Process
Technical Topics:
Lighting, Plumbing, Mechanical, Environmental, Safety, Productivity, Plan Reading, Scheduling, Estimating

Course philosophy:

1. ***Preparation is not optional-it is a minimum expectation.*** It's your education and career. The true value of your career is in direct proportion to your commitment to excellence, no matter what your field of endeavor. Remember the road to success is always under construction; so be prepared to endure the process.
2. ***Your attendance and attention is required.*** It is a portion of your grade in the course. Tardiness is not acceptable. You are to be ready to participate at the beginning of class, and stay until class is over.
3. ***Communicate.*** This is the key in our business. Your ability to communicate and work effectively as an individual as well as a team member is vital. Communication is not only being able to express thoughts verbally or in writing, but includes listening and understanding as well. **All questions are welcomed!**

4. ***Professionalism.*** Your work and actions should be professional in appearance and thought. Lack of attention to detail indicates carelessness or lack of professional demeanor.

Department Classroom Policy:

The classroom is to be regarded as the "class office" and therefore professional behavior is expected at all times. Start preparing now for the expectations of future employers. **All cell phones and electronic devices are to be turned off during class**. If any of these devices interrupt class, then you will be asked to leave for the remainder of the class period. This will be indicated as an absence for the class period. A second disruptive occurrence results in dropping the class. (Department Policy)

No food or drink is permitted in the classroom. Also no hats/caps, newspapers, electronic devices or other distracting items will be allowed.

University and College of Engineering Policies:

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Statement Regarding Students with Disabilities: Students with disabilities who need classroom accommodations, access to technology, or information about emergency building/campus evacuation processes should contact the Student Access Center and/or their instructor. Services are available to students with a wide range of disabilities including, but not limited to, physical disabilities, medical conditions, learning disabilities, attention deficit disorder, depression, and anxiety. If you are a student enrolled in campus/online courses through the Manhattan or Olathe campuses, contact the Student Access Center at accesscenter@k-state.edu, 785-532-6441; for Salina campus, contact the Academic and Career Advising Center at acac@k-state.edu, 785-826-2649.

Campus Safety Statement: Kansas State University is committed to providing a safe teaching and learning environment for student and faculty members. In order to enhance your safety in the unlikely case of a campus emergency make sure that you know where and how to quickly exit your classroom and how to follow any emergency directives. To view additional campus emergency information go to the University's main page, www.k-state.edu, and click on the Emergency Information button.

Academic Freedom Statement: Kansas State University is a community of students, faculty, and staff who work together to discover new knowledge, create new ideas, and share the results of their scholarly inquiry with the wider public. Although new ideas or research results may be controversial or challenge established views, the health and growth of any society requires frank intellectual exchange. Academic freedom protects this type of free exchange and is thus essential to any university's mission.

Moreover, academic freedom supports collaborative work in the pursuit of truth and the dissemination of knowledge in an environment of inquiry, respectful debate, and professionalism. Academic freedom is not limited to the classroom or to scientific and scholarly research, but extends to the life of the university as well as to larger social and political questions. It is the right and responsibility of the university community to engage with such issues.

ARE 100 / CNS 100 Class Schedule

Week 1
Wednesday: Introductions

Week 2
Monday: Introduction to Profession / Student Organizations
Wednesday: Scholarships & Tutoring

Week 3
Monday: Time Management / Schedules / Project Scheduling
Wednesday: Internships/Professionalism

Week 4
Monday: Resumes
Wednesday: Research Introduction

Week 5
Monday: DARS Reports / Transfer Student Issues
Wednesday: Bad Design

Week 6
Monday: Curriculum / Flowchart
Wednesday: Pre Enrollment / Line Schedule

Week 7
Monday: Structures
Wednesday: Writing Research Paper / Format of Paper

Week 8
Monday: Outline Work Day
Wednesday: Outline Work Day

SPRING BREAK

Week 9
Monday: Cost of A Class / Financial
Wednesday: Estimating

Week 10
Monday: Honor & Integrity / Ethics
Wednesday: Lighting

Week 11
Monday: Safety & Productivity
Wednesday: Environmental

Week 12
Monday: Mechanical
Wednesday: Plan Reading

Week 13
Monday: Jobsite Tour
Wednesday: Jobsite Tour

Week 14
Monday: Research Work Day
Wednesday: Q&A Session (Departmental Ambassadors)

Week 15 DEAD WEEK
Monday: Poster Session
Wednesday: Evaluations / Exam Prep

PAPER RUBRIC

	Beginner: 0 Points	Novice: 1 Points	Intermediate: 3 Points	Expert: 4 Points	Score
Technical Content	Most of the technical content is not accurate or valid. Source of the information is not reliable.	Some of the technical presentation is not correct or does not have a valid source.	An area of technical presentation does is not correct or does not have a valid source.	The technical content is accurate, correct, and comes from a reliable source.	
Format	The provided template / formatting is not used	Most formatting requirements are not met	Most but not all formatting requirements are adhered to	Paper conforms to defined formatting requirements	
Graphics	No visuals used.	Only one or two graphics used	3 graphics used but poorly communicate idea or are not constructed well	At least 3 graphics effectively use	
Bibliography	Does not include a reference list.	Includes reference list but has less than 10 and/or many of the references are not professionally accepted.	Includes reference list but some of the references are not professionally accepted.	Includes a thorough and professionally accepted reference list.	
Length	Paper body text is less than 2000 words	Paper body text exceeds 2000 words	Paper body text exceeds 2500 words	Paper body text meets or exceeds the 3000 word minimum	
Writing Quality	Paper is difficult to understand/read due to the excessive misuse of proper grammar or sentence/paragraph structure	Enough grammatical issues or improper sentence/ paragraph structure contained to be distracting	Minor grammatical issues found or occasional improper sentence/paragraph structure used	Paper employs proper use of the english language.	
Citations	No citations are used and APA formatting is not utilized	APA formatting is not used for all listed references but citation used in paper body is correct	APA formatting is utilized for all listed references but citation used in paper body is incorrect	APA formatting is utilized for all listed references and proper citation is used in paper body	
Purpose	The intent of the paper is unclear	The problem is clearly defined but inadequate supportive evidence provided for solution	The problem is clearly defined but solution is not as developed as it could be	Paper clearly articulates both problem and solution	

POSTER RUBRIC

	Beginner: 0 Points	Novice: 2 Points	Intermediate: 4 Points	Expert: 6 Points	Score
Communicate Idea	Unclear what is being communicated	Both problem and solution are stated but viewer must search to find	Both problem and solution are easily identified but does not promote understanding	Poster effectively communicates idea to viewer quickly and easily	
Format	The provided template / formatting is not used	Most formatting requirements are not met	Most but not all formatting requirements are adhered to	Poster conforms to defined formatting requirements	
Visuals	No visuals used.	Visuals used but poorly communicate idea or are not constructed well	Visuals used but not clear how they support the ideas	Visuals enhance and clearly communicate idea	
Score					

KANSAS STATE UNIVERSITY | Architectural Engineering and Construction Science

CNS 200 - Computer Applications in Engineering & Construction

SPRING 2015 Semester

Instructor:	**Shannon Casebeer**
Office:	**Seaton 254A**
Office Hours:	**Please see hours posted by office door**
E-mail:	**scasebeer@k-state.edu**
Office Phone No.:	**532-3573**

Course Description per Catalog:

Fundamental applications of computer programming and software using engineering and construction problems, primarily advanced use of spreadsheets with macros, data tables, embedded graphics, and presentations.

Prerequisites:

Schedule:

Section A	T, U	12:30pm - 2:20 pm	Room: Seaton 226B
Section C	T, U	9:30am – 11:20pm	Room: Seaton 226B

Student Learning Outcomes (SLO):

Upon completion of this course, students should demonstrate proficiencies in applying computer software applications as a management & problem solving tool by developing computer skills that can be applied in various areas of their student career in preparation for future in the engineering & construction industries. Student Learning Outcomes include:

1. Develop written communication skills using computer applications.
2. Apply math skills to engineering problems using computer applications.
3. Develop graphic communication skills using computer applications.
4. Develop presentation skills using computer applications.
5. Integrate written, graphic and math skills using multiple computer applications collaboratively.

Evaluation:

GRADING SCALE

A	100-93%
B	92-85%
C	84-78%
D	77-70%
F	69% and below

Grades will be based on percentage of points possible:

$$\% \text{ grade} = \frac{\text{Points earned}}{\text{Total Points Possible}} \times 100$$

APPROXIMATE EVALUATION VALUES**

Assignments & Quizzes	455 Points
Class Exams	100 Points
Final Project	200 Points
Notebook	50 Points
Total Possible	805 Points

** The instructor reserves the right to make adjustments to the point values of course content during the semester.

Homework:

Homework will be assigned on a regular basis and will be due as directed by assignment instructions. Late work **will not** be accepted for credit. The Instructor may consider emergencies or other personal issues on a case-by-case basis. Points may be deducted from assignments that are not neat and organized. **Assignments are to be completed by individual effort unless specific instructions are given by Instructor for students to work with others students. Please do your own work.** Discussion of assignments with other students in the class to increase your understanding is acceptable.

Quizzes

Quizzes will be scheduled per the semester calendar provided to you. Quizzes may also be administered by the instructor at other discretionary dates.

Projects: You will be assigned a Final Project in lieu of a Final Exam. See course calendar provided.

Exams: Regular exams will be scheduled per the course calendar provided.

Final Exam: This class does not have a final exam.

Notebook:

All students are required to maintain a course notebook consisting of class notes, handouts, assignments, etc. The primary purpose of the notebook is to reinforce the planning, organization, and the professional presentation of material that will be required of you as you enter the construction and engineering industries and to facilitate the use of the course material as a future reference. The notebook shall consist of a 3-ring binder with transparent front and spine label pockets. Your notebook should be neat, organized and should include, at a minimum, the following:

- A front cover label that includes student name, the course number (CNS 200), the course title, the semester (example, SPRING 2015) and the Instructor's name.
- A spine label that lists the course number/title, semester/year, and student name.
- A detailed Table of Contents.
- Labeled tabs that correspond to your Table of Contents.

The notebook will be reviewed and graded by the instructor at the end of the semester for organization, completeness and neatness. Appropriate credit will be given based on your professional efforts. The instructor will announce the due date of the notebook in class. **Late notebooks will receive a zero grade.**

Attendance:

a. Attendance is mandatory and will be taken daily by the Instructor. Each student has a responsibility to be in class to listen to verbal lecture/instructions, to understand the assignment written instructions/requirements, and to use the time in class to work on the assignments.
b. Excused absences must be requested and approved **prior** to the beginning of the class period that will be missed. Approved absences are at the discretion of the instructor and will be considered on a case-by-case basis.
c. If an absence is due to illness, a doctor's note is required in order for the absence to be excused.
d. Missing/leaving class for internship/job interviews is not acceptable and will not be counted as an excused absence. Schedule your interviews outside of class time (this is ARE/CNS Departmental policy).

e. Each unexcused absence will result in a **2.5% reduction from the total points earned for the semester** (this includes absences caused by tardiness and cell phone disruptions). You will be allowed one (1) discretionary unexcused absence for the semester before points are deducted.
f. Leaving class early without prior consent of the instructor is considered an unexcused absence.
g. Tardiness will not be tolerated and will be treated exactly the same as an unexcused absence in terms of the points deduction from your final grade. You should be seated at your work station, logged in, and prepared for class at the start of class (by the Instructor's watch).
h. You are responsible for tracking your own attendance. Since the deduction from the final grade due to tardiness and unexcused absences is based on a percentage of the total points possible for the semester, the deduction will not be made until final grades are submitted. This means you can see the Instructor to avoid points deduction if you believe an error has been made regarding your attendance record.

Textbook / Required Materials:

No textbook is required for this course. A portable memory device (thumb drive) of 1GB or greater **is required** for this course.

Classroom Policy:

- The classroom is to be regarded as the "class office" and therefore professional behavior is expected at all times. Start preparing now for the expectations of future employers. All cell phones and electronic devices are to be turned off during class. If any of these devices interrupt class, then you will be asked to leave for the remainder of the class period. This will be indicated as an absence for the class period. A second disruptive occurrence results in dropping the class. (Department Policy)
- No food or drink is permitted in the classroom. Also no hats/caps, newspapers, electronic devices or other distracting items will be allowed.
- Please keep the classroom clean by properly disposing of all trash, newspapers, etc. at the end of class. Please push your chairs in when leaving, and be sure to take your personal belongings and memory devices with you.

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Attachments:

- Outline of Course Topics – See Course Calendar provided.
- CNS/ARE Course Outcomes Map
- Rubrics for Key Assignments/Projects from Map – these will be provided as necessary for grading.

Disclaimer:

The Instructor reserves the right to make discretionary changes during the semester to this syllabus, the course contents, course calendar, course scoring and all other aspects of this course.

Week	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
1		**1/20** Review Syllabus, Assignment 1a - MS Word		**1/22** Assignments 1b - MS Word	
2		**1/27** Assignment 2 - MS Excel, Assign 1a, 1b **DUE**		**1/29** Assignment 2 **DUE**	
3		**2/3** Assignment 3 - MS Excel		**2/5** Assignment 3 **DUE**	
4		**2/10** Assignment 4 - MS Excel		**2/12** Assignment 4 **DUE**	
5		**2/17** Assignment 5 - MS Excel		**2/19** Assignment 5 **DUE**	
6		**2/24** Assignment 6 - MS Excel		**2/26** Assignment 6 **DUE**	
7		**3/3** Assignment 7a & 7b - MS Excel		**3/5** Assignments 7a & 7b **DUE**	
8		**3/10** Assignment 8 - Google Sketchup		**3/12** Assignment 8 **DUE**	
	3/16 Spring Break	**3/17 Spring Break**	**3/18 Spring Break**	**3/19 Spring Break**	**3/20 Spring Break**
9		**3/24** Assignment 9 - Google Sketchup		**3/26** Assignment 9 **DUE**	
10		**3/31** Assignment 10a - MS Powerpoint		**4/2** Powerpoint Quiz, Assignment 10a **DUE**	
11		**4/7** Assignment 10b - Prezi		**4/9** Assignment 10b **DUE**	
12		**4/14** Assignment 11 - TBD		**4/16** Assignment 11 **DUE**	
13		**4/21** Exam 1, Final Project Assignment		**4/23** Review Exam, Final Project work day	
14		**4/28** Assignment 12 - Group Presentations		**4/30** Group Presentations conducted in class	
15		**5/5** Final Project work day, **NOTEBOOKS DUE**		**5/7** Final Project work day	
16	**5/11 Finals Week**	**5/12 Finals Week**	**5/13 Finals Week**	**5/14 Finals Week**	**5/15 Finals Week**

Disclaimer: The instructor reserves the right to make changes to the course calendar regarding course content and due dates.

COURSE SYLLABUS

Instructor Dan Hall Seaton 242B danhall@k-state.edu

Spring 2015 Office Hours 7:30 - 11:30 am on Tuesday and Thursday, and by appointment. There are no stupid questions.

Course Description The study of construction materials, their properties, selection and use

Class Schedule Tuesday and Thursday at 8:30 am and 9:30 am in Seaton 221

Student Learner Outcomes
1. Understanding of building materials and their use
2. Working knowledge of building systems and construction methods
3. Introduction to construction terminologies
4. Calculation of building material quantities
5. Development of hand lettering skills and notebook organization

Letter Grades Grades will be based on a percentage of total points possible
A = 94 to 100% B = 86 to 93% C = 76 to 85% D = 68 to 75% F = 0 to 67%

Approximate Evaluation Values Subject to Change Without Notice

Homework and Quizzes	~ 447
Four Scheduled Exams	~ 400
Attendance	~ 150
Notebook	~ 40
TOTAL Points Possible	~ 1037

Late Work All homework one class period late subject to 50% deduction
All homework two or more class periods late not accepted

Attendance Prompt attendance is expected in this class.
If you must miss a class, you shall make arrangements in advance to cover exams, homework and quizzes. All arrangements to be emailed to the instructor for consideration. Turning in work early is always accepted.

In Class Questions and discussion are welcomed. Remember, this is your education.
Food, drink, hats / caps, electronic devices, newspapers are not permitted.

Notebook You are required to develop a 3 ring loose leaf notebook for your use during the semester, and for future reference. Notebooks shall be tabbed, labeled, referenced with a table of contents, and contain all handwritten class notes, handouts, homework , and quizzes plus exams. Notebooks shall be complete with a cover indicating your name, “CONSTRUCTION MATERIALS”, “SPRING 2015", and a computer generated or hand drawn image relating to construction materials. Originality is always encouraged.

Textbook There is no textbook required. Course information will be presented in class, with additional information provided as handouts.

Copyright All course materials and presentations carry a copyright © 2015 Nine Gables.

During this course students are prohibited from selling notes to or being paid for taking notes by any person or commercial firm without the express written permission of the instructor of this course.

Disclaimer The instructor reserves the right to modify and/or add items to this syllabus.

Academic Integrity, Accommodations for Students with Disabilities, Campus Safety, Harassment, and Expectations for Classroom Conduct are subject to guidelines of Kansas State University, College of Engineering, and Department of Architectural Engineering and Construction Science.

Day 1	Tuesday	January 20	Introduction	TENTATIVE
Day 2	Thursday	January 22	The Basics	CALENDAR
Day 3	Tuesday	January 27	The Basics	All subject to change
Day 4	Thursday	January 29	The Basics	without notice
Day 5	Tuesday	February 3	The Basics	
Day 6	Thursday	February 5	Concrete	
	Monday	February 9	45 + minute Help Session at 10:00 am, 2:30 pm and 7:00 pm	
Day 7	Tuesday	February 10	Exam One	
Day 8	Thursday	February 12	Concrete Conference	
Day 9	Tuesday	February 17	Concrete	
Day 10	Thursday	February 19	Concrete	
Day 11	Tuesday	February 24	Concrete	
Day 12	Thursday	February 26	Concrete	
Day 13	Tuesday	March 3	Steel	
Day 14	Thursday	March 5	Steel	
	Monday	March 9	45 + minute Help Session at 10:00 am, 2:30 pm and 7:00 pm	
Day 15	Tuesday	March 10	Exam Two	
Day 16	Thursday	March 12	Steel	
Day 17	Tuesday	March 24	Steel	
Day 18	Thursday	March 26	Steel	
Day 19	Tuesday	March 31	Masonry	
Day 20	Thursday	April 2	Notebooks Due	
Day 21	Tuesday	April 7	Masonry	
Day 22	Thursday	April 9	Masonry	
	Monday	April 13	45 + minute Help Session at 10:00 am, 2:30 pm and 7:00 pm	
Day 23	Tuesday	April 14	Exam Three	
Day 24	Thursday	April 16	Masonry	
Day 25	Tuesday	April 21	Masonry	
Day 26	Thursday	April 23	Wood	
Day 27	Tuesday	April 28	Wood	
Day 28	Thursday	April 30	Wood	
Day 29	Tuesday	May 5	Wood	
Day 30	Thursday	May 7	Wood	
	Sunday	May 10	45 minute Help Session at 7:00 and 7:45 pm	
Day 31A	Monday	May 11	Exam Four	
	Wednesday	May 13	45 minute Help Session at 7:00 and 7:45 pm	
Day 31B	Thursday	May 14	Exam Four	

THE END

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CNS 231 – Statics A
Spring 2015

Professor:	**Susan L. Gerth, PE**
Office:	**2114 Fiedler Hall**
Office Hours:	**MWF 9:30-11:20 am; T 8:00-11:00 am**
E-mail:	**sgerth@ksu.edu**
Office Phone No.:	**785-532-1579**

Course Description: Composition and resolution of forces; equilibrium of force systems; application of the principles of statics to problems, including force analyses of simple structures. Centroids; moments of inertia. Three hours rec. a week. Pr.: MATH 150 or equiv., earned grade of C or better in PHYS 113 and MATH 220.

Class Meeting: MWF 8:30-9:20 a.m. **Room** Seaton 237

Student Learning Outcomes: Upon completion of this course one should be able to:

1. Resolve forces into components and find resultants of force systems.
2. Compute moments of force systems and force-couple systems.
3. Draw freebody diagrams and analyze determinate force systems.
4. Analyze simple structures, including trusses, frames, and machines.

Evaluation:

Grade Scale:

A	100-90%	Grades will be based upon a percentage of total points possible:
B	89-80%	% grade = $\frac{\text{Points earned}}{\text{Total Points Possible}} \times 100$
C	79-70%	
D	69-60%	
F	59% and below	

Evaluation Values:

Math Assessment Quiz	30 points
Homework	50 points
Exams (3@100)	300 points
Final Exam	150 points
Notebook	50 points
Total Possible	580 points

Homework: Successful completion of practice problems is essential to success in a problem-oriented class such as Statics A. To that end, homework is assigned daily and the student is expected to make a sincere attempt to solve assigned problems prior to the next class. All assigned problems are to be done in accordance with the guidelines provided. The assigned problems will be due at the **start** of class each Monday unless otherwise noted. In order to be eligible to receive credit, the homework must be turned in (stapled and in numerical order) before the start of class on the date due. When all assigned problems are collected, one or two problems might be graded at 10 points each, with an additional 10 points given for the overall completeness of the set. For the semester, the lowest homework grade will be dropped, and the homework grade will be determined by (number of points earned/number of points possible) x 50.

Homework will adhere to the following specifications. Variations will result in reduced grades on the problem section of the notebook.

1. Use a **separate sheet** of 8-1/2 x 11 in standard engineering paper for each problem.
2. All work shall be in pencil, using engineering lettering or neat printing. Pencil marks will be clear-cut and black. Erasing will be clean and thorough.
3. At the top of each sheet, write the date at the left, "Statics A", and your name at the right.

4. Include a complete copy of the problem statement and a copy of the given figure at the beginning of each solution. Include all sketches and other graphics on the right side of the page.
5. Draw all sketches **approximately** to scale using a straightedge.
6. Include freebody diagrams in all solutions as appropriate.
7. Arrange all computations in a logical order, and record each step.
8. Mark answers so as to be easily located (use a straightedge). Show the proper units and signs for all answers. Use four significant figures for numbers beginning with a "1", and three significant figures for all other answers.

Quiz and Exams: There will be a math assessment quiz during the first week of the semester in order to determine the math (geometry and trigonometry) preparedness for the course. There will be no make-up for this quiz. There will be three regular exams during the semester. They will be closed-book and closed-note. No individual make-up exams will be given. If a student must be absent for an exam due to a reasonable excuse (the instructor will determine whether an absence is excused), the student will ask the instructor in writing (e-mail is acceptable) to take a make-up exam at the end of the semester. The make-up exam is comprehensive and will take place during the last week of classes. There will be only one make-up exam covering all exams missed, and a student will not be excused from more than one exam.

Final Exam: There will be a cumulative final exam worth 150 points (finals week).

Notebook: Each student is responsible to keep a notebook of progress through the semester. At the time of the final exam, the notebook will be collected and graded for a maximum of 50 points. Grading will consider organization and professional presentation, completeness, class notes, assigned problems, quiz and exams (with corrections), and any other evidence of individual pursuit of learning (use included grade sheet).

Text / Reference Materials: Statics and Strength of Materials (Seventh Edition), by H.W. Morrow and Robert P. Kokernak

Classroom Policies: All students are expected to participate in each class. Each student is expected to have pencil, paper, and calculator available in class. Attendance is not necessarily taken on a daily basis; however, each student is responsible for all material presented, regardless of attendance.

Department Classroom Policy: The classroom is to be regarded as the "class office" and therefore professional behavior is expected at all times. The student is expected to start preparing now for the expectations of future employers. **All cell phones are to be turned off during class.** If any of these devices interrupt class, the student may be asked to leave for the remainder of the class period. This will be indicated as an absence for the class period. If a student's cell phone sounds during an exam, the student will turn in the exam immediately and leave the class. **Food, beverage and tobacco products are not permitted in the classroom. Keep the classroom clean by properly disposing of all trash, newspapers, etc. at the end of class.**

Kansas State University and College of Engineering Policies:

Academic Accommodations for Disabled Students: If a student has any physical or learning disability which will make it difficult for you to carry out the work as it is outlined or which will require accommodations or other assistance in this course, the student must notify the instructor within the first two weeks of the class.

Harassment Policy: One purpose of a student's education is to help develop skills, approaches, and abilities that are necessary for effective teamwork, and for success in your profession and as a citizen. It is important that the student understand rights and responsibilities regarding the University's Sexual and Racial Harassment policies. (Full text of the policies can be found on KSU's web site at ***www.ksu.edu/uauc/fhbook/fhxj.html.*** If a student experiences any situations, in or out of class, that seem inappropriate or that make the student uncomfortable, a list of resources and courses of action to assist can be found on the College of Engineering web site at ***www.engg.ksu.edu/students/statement-harrassment.htm***.

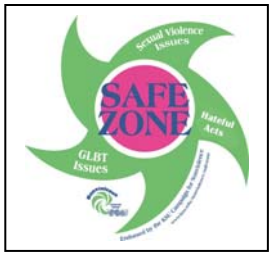
Statement Regarding Academic Honesty: "I believe that engineers must not only be the people who know how to do things right, but also those who know the right things to do." (Quote by Dr. Joseph Bordogna, National Science Foundation). Kansas State University has an Honor & Integrity System based on personal integrity, which is presumed to be sufficient assurance in academic matters one's work is performed honestly and without unauthorized assistance. Undergraduate and graduate students, by registration, acknowledge the jurisdiction of the Honor & Integrity System. The policies and procedures of the Honor & Integrity System apply to all full and part-time students enrolled in undergraduate and graduate courses on-campus, off-campus, and via distance learning. The honor system web site can be reach via the following URL: **www.ksu.edu/honor** or **<http://www.ksu.edu/honor> .**

A component vital to the Honor System is the inclusion of the Honor Pledge which applies to all assignments, examinations, or other course work undertaken by students. The Honor Pledge is implied, whether or not it is stated: "On my honor, as a student, I have neither given nor received unauthorized aid on this academic work." A grade of XF can result from a breach of academic honesty. The F indicates failure in the course; the X indicates the reason is an Honor Pledge violation."

Tobacco Use Policy: The College of Engineering is designated a tobacco-free workplace and the use of tobacco products, including cigarettes, cigars, and smokeless tobacco, is prohibited in any college building, facility, or vehicle. It is the responsibility of each college member (faculty, staff, or student) to adhere to and enforce the policy, and to inform visitors of this policy. If a student, faculty member or college employee continues to disregard the policy, he/she will be reported to the dean and may lose access privileges.

Copyright Issues: Class and lecture notes for this course carry a copyright. Students are prohibited from selling (or being paid for taking) notes during this course to or by any person or commercial firm without the express written permission of the professor teaching this course.

SafeZone: I am part of the SafeZone community network of trained K-State faculty/staff/students who are available to listen and support you. As a SafeZone Ally, I can help you connect with resources on campus to address problems you face, particularly issues of sexual violence, hateful acts, or concerns faced by individuals due to sexual orientation/gender identity. My goal is to help you be successful and to maintain a safe and equitable campus!



Campus Safety Statement: Kansas State University is committed to providing a safe teaching and learning environment for student and faculty members. In order to enhance your safety in the unlikely case of a campus emergency make sure that you know where and how to quickly exit your classroom and how to follow any emergency directives. To view additional campus emergency information go to the University's main page, www.k-state.edu, and click on the Emergency Information button.

Academic Freedom Statement: Kansas State University is a community of students, faculty, and staff who work together to discover new knowledge, create new ideas, and share the results of their scholarly inquiry with the wider public. Although new ideas or research results may be controversial or challenge established views, the health and growth of any society requires frank intellectual exchange. Academic freedom protects this type of free exchange and is thus essential to any university's mission.
Moreover, academic freedom supports collaborative work in the pursuit of truth and the dissemination of knowledge in an environment of inquiry, respectful debate, and professionalism. Academic freedom is not limited to the classroom or to scientific and scholarly research, but extends to the life of the university as well as to larger social and political questions. It is the right and responsibility of the university community to engage with such issues.

CNS 231: Statics A (Spring 2015); Text: "Statics and Strength of Materials", 7th Ed.

CL	DATE	READING	TOPIC	Problems
1	1/21		Course Introduction	Read ch. 1
2	23	1.8	Linear Equations, Determinants	1.46, 47
3	26		Math Assessment	
4	28	2.1-2.3	Resultant of Two Concurrent Forces	2.2, 3, 4
5	30	2.1-2.3	Resultant of Concurrent Forces	2.5,7,8
6	2/2	2.5	Vector Components	2.14, 17, 18
7	4	2.6-2.7	Coplanar Resultants by Components, Diff	
8	6	2.6-2.7	Coplanar Resultants by Components, Diff	2.19,20,24,25
9	9	2.6-2.7	Coplanar Resultants by Components, Diff	2.34,35,36
10	11		Summary and Review	
11	13	ch. 1-2	Exam 1	
12	16	3.1-3.4	Particle Equilibrium, Space Diagrams, FBDs	3.1-3.8 (same page)
13	18	3.5-3.7	Forces in Equilibrium	3.10(b,c);12(b,c);13(b,c)
14	20	3.5-3.7	Forces in Equilibrium	3.15(b or c);16(b or c);17
15	23	4.1-4.4	Vector Properties, Moment of a Force	4.1, 2, 4
16	25	4.1-4.4	Vector Properties, Moment of a Force	4.5, 6, 7
17	27	4.1-4.4	Vector Properties, Moment of a Force	
18	3/2	4.5-4.6	Resultant of Nonconcurrent Parallel Force	4.8, 9, 10
19	4	4.9	Resultant of Distributed Loading	4.28a, 29a, 30a, 32a
20	6	4.7-4.8	Couples, Force-Couple Systems	4.18, 19, 20, 22
21	9	4.7-4.8	Couples, Force-Couple Systems	4.24, 26, 27
22	11		Summary and Review	
23	13	ch. 4, 5	Exam 2	
	16-20		Spring Break - Classes do not meet	
24	23	4.5-4.6	Resultant of Nonconcurrent Nonparallel Force	
25	25	4.5-4.6	Resultant of Nonconcurrent Nonparallel Force	4.13, 14, 15, 17
26	27	5.1-5.7	Equilibrium of Rigid Bodies, FBDs	
27	30	5.1-5.7	Equilibrium of Rigid Bodies, FBDs	5.4, 5, 7, 8
28	4/1	5.1-5.4	Equilibrium of Rigid Bodies, FBDs	5.6, 9, 10
29	3	5.1-5.7	Equilibrium of Rigid Bodies, FBDs	5.16, 19, 20, 22
30	6	5.1-5.7	Equilibrium of Rigid Bodies, FBDs	5.24, 28, 29
31	8	6.1-6.4	Structures: Trusses (Method of Joints)	6.1, 2, 4
	10		Open House - Class does not meet	
32	13	6.4	Method of Joints	6.5, 6, 9, 10
33	15	6.4	Method of Joints	6.17-20 (same page)
34	17	6.6	Method of Sections	6.22, 23, 25, 26
35	20	6.6	Method of Sections	6.27, 28
36	22	6.6	Method of Sections	
37	24	6.7	Frames and Machines	6.29, 30
38	27	6.7	Frames and Machines	6.33, 34, 36
39	29		Summary and Review	
40	5/1	ch. 6	Exam 3	
41	4	6.7	Frames and Machines	6.42, 43, 47
42	6		Summary and Review	
43	8		Summary and Review	
		Final Exam	See University final exam schedule	

KANSAS STATE UNIVERSITY | Architectural Engineering and Construction Science

ARE 310 Introduction to AutoCAD®

Spring 2015, TU 5:30-8:30, Seaton 226B
Professor: Chris Ahern, P.E., LEED BD+C
Office: 233 Seaton Hall **Office Hours: Posted by office door**
E-mail: cahern@ksu.edu **Office Phone: 532-3559**

Course Description

An introduction to the basics of AutoCAD

Student Learning Outcomes

Upon completion of this course one should be able to:

1. Understand the basic AutoCAD terminology and fundamental theories.
2. Apply AutoCAD drafting/design in course work completion.
3. Further apply AutoCAD in other engineering course work.
4. Be prepared for internship and entry-level employment without extensive AutoCAD re-training.

Evaluation

Grade Scale:

A	100-93%
B	92-85%
C	84-77%
D	76-69%
F	68% and below

Grades will be based upon a percentage of total points possible:

$$\% \text{ grade} = \frac{\text{Points earned}}{\text{Total Points Possible}} \times 100$$

Approximate Evaluation Values: Assignments: 65%; Final Project: 25%; Notebook: 10%

Homework

Late work will be accepted up to the start of the following class period with a 20 pt penalty. Notify instructor asap in the case of a real emergency beyond the control of the student (severe illness, family emergencies, etc.) Late is defined as later than the date and time specified by the instructor for any particular assignment. Computer or user error is not the responsibility of the faculty to consider.

Attendance

Attendance is expected at every class. Prompt attendance is required in this course, as it will be in a professional office. 20 points will be deducted from your overall grade for each unexcused absence. To be excused for being absent or late or leaving early, students must receive permission from the instructor on or before the day of the class period in question. The instructor may consider emergencies or other issues on a case-by-case basis.

Text / Reference Materials

No text required. Handouts will be provided in class. You will be required to turn in a notebook on the last day of class. Submittal details will be explained in class on the first day.

Classroom Policies

The classroom is to be regarded as the "class office" and therefore professional behavior is expected at all times. Start preparing now for the expectations of future employers. **Cell phone usage is not permitted during class. Food, drinks, smoking, or chewing are not permitted in the classroom. Keep the classroom clean by properly disposing of all trash at the end of class. Once released to work on your project, you may listen to headphones. Please be respectful to those around you and don't spontaneously break into song.**

Kansas State University and College of Engineering Policies

Statement Regarding Academic Honesty

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Statements for Academic Accommodations for Students with Disabilities*

"Any student with a disability who needs a classroom accommodation, access to technology or other academic assistance in this course should contact Disability Support Services (dss@k-state.edu) and/or the instructor. DSS serves students with a wide range of disabilities including, but not limited to, physical disabilities, sensory impairments, learning disabilities, attention deficit disorder, depression, and anxiety."

Statement Defining Expectations for Classroom Conduct

All student activities in the University, including this course, are governed by the Student Judicial Conduct Code as outlined in the Student Governing Association By Laws, Article VI, Section 3, number 2. Students who engage in behavior that disrupts the learning environment may be asked to leave the class.

Statement for Copyright Notification

Copyrights exist to this syllabus and all lecture material. During this course students are prohibited from selling notes to or being paid for taking notes by any person or commercial firm without the express written permission of the professor teaching this course.

Campus Safety Statement

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Mon	Tues	Wed	Thurs	Fri
	1/20 Syllabus & Course Overview Basic Drawing setup/skills Creating Layers Introduce Assignment #1		1/22 Work on Assignment #1	
	1/27 Introduce Assignment #2 Creating Blocks		1/29 Assignment 1 due @ 5:00pm Hatching	
	2/3 Assignment 2 due @ 5:00pm Introduce Assignment #3 xreferences		2/5 Plotting	
	2/10 Viewports Scaling Titleblocks		2/12 Assignment #3 due @ 5:00pm	
	2/17 Introduce Final Project Sections/Plenums Leaders		2/19 Work Day	

	2/24 Work Day	2/25 Final Project due @ 12:00pm		

KANSAS STATE UNIVERSITY | Architectural Engineering and Construction Science

ARE 310 – Introduction to AutoCAD®

Assignment #1 – (100 points)_____

Name

Rating Scale

Excellent	10	20	30
Good	9	18	27
Average	8	16	24
Fair	7	14	21
Deficient	5	10	15

Item	**Description**	**Points/ Points Possible**
1	Accuracy of Drawing / Drawing File	/20
2	Layers Correct	/20
3	All Lines/Corners Closed	/20
4	Text Placed, Sized and Spelled Correctly	/20
5	Showing 10 Dimensions	/20
6	On Time	
	Overall	/100

Additional Comments:

KANSAS STATE UNIVERSITY | Architectural Engineering and Construction Science

ARE 310 – Introduction to AutoCAD®

Assignment #2 – (70 points)_____

Name

Rating Scale

Excellent	10	20	30
Good	9	18	27
Average	8	16	24
Fair	7	14	21
Deficient	5	10	15

Item	**Description**	**Points/ Points Possible**
1	Accuracy of Drawing	/20
2	Non-Associative Hatching	/10
3	Ceiling Grid / Gyp – Locations/Dimensions	/20
4	Furniture Plan	/20
5	*Extra Credit for Difficulty/Originality/Detail*	/10
6	On Time	
	Overall	/70

Additional Comments:

KANSAS STATE UNIVERSITY | Architectural Engineering and Construction Science

ARE 310 – Introduction to AutoCAD®

Assignment #3 – (120 points)_____

Name

Rating Scale

Excellent	10	20	30
Good	9	18	27
Average	8	16	24
Fair	7	14	21
Deficient	5	10	15

Item	**Description**	**Points/ Points Possible**
1	Accuracy w/r/t Drawing Submission Instructions	/10
2	Layers/Linetypes Correct	/20
3	All Lines Intersecting/Closed	/10
4	No RCP Conflicts	/20
5	Air Devices Ducted, Ductwork Labeled	/20
6	All Lights Circuited and Switched	/20
7	Titleblocks Shown and Labeled Correctly	/20
	On Time	
	Overall	/120

Additional Comments:

KANSAS STATE UNIVERSITY | Architectural Engineering and Construction Science

ARE 310 – Introduction to AutoCAD®

Final – (130 points)_____

Name

Rating Scale

Excellent	10	20	30
Good	9	18	27
Average	8	16	24
Fair	7	14	21
Deficient	5	10	15

Item	**Description**	**Points/ Points Possible**
1	Drawing Shown and Labeled Correctly	/20
2	Layers/Linetypes Correct (15 layers)	/20
3	Elevation Heights	/10
4	Section Accuracy (unless changes approved in class)	/20
5	Notes	/10
6	Overall Effort / Attention to Detail	/20
7	Grade Adjustment for Unexcused Absence	
8	Notebook	/30
	Overall	/130

Additional Comments:

KANSAS STATE UNIVERSITY | Architectural Engineering and Construction Science

CNS 320 – Construction Materials
Spring 2015

Instructor:	**Dan Hall**
Office:	**Seaton 242B**
Office Hours:	**Posted on Door**
E-mail:	**danhall@k-state.edu**
Office Phone No.:	**(785) 532-5964**

Course Description

The study of construction materials, their properties, selection and use

Class Schedule: TU 8:30 and 9:30 Seaton 221

Student Learning Outcomes

Upon completion of this course, students should demonstrate the following proficiencies:

1. Understanding of building materials and their use
2. Working knowledge of building systems and construction methods
3. Introduction to construction terminologies
4. Calculation of building material quantities
5. Development of hand lettering skills and notebook organization

Evaluation

Grade Scale:

94-100	= A
86-93	= B
76-85	= C
68-75	= D

Approximate Evaluation Values:

Homework/Quizzes	~ 447 points
4 Scheduled Exams	~ 400 points
Attendance	~ 150 points
Notebook	~ 40 points
Total POINTS Possible	~1037 points

Late Work: All homework one class period late subject to 50% deduction. All homework two or mor class periods late not accepted.

Attendance: Prompt attendance is expected in this class. If you must miss a class, you shall make arrangements in advance to cover exams, homework and quizzes. All arrangements to be emailed to the instructor for consideration. Turning in work early is always accepted.

In Class: Questions and discussion are welcomed. Remember, this is your education. Food, drink, hats / caps, electronic devices, newspapers are not permitted.

Notebook: You are required to develop a 3 ring loose leaf notebook for your use during the semester, and for future reference. Notebooks shall be tabbed, labeled, referenced with a table of contents, and contain all handwritten class notes, handouts, homework , and quizzes plus exams. Notebooks shall be complete with a cover indicating your name, "CONSTRUCTION MATERIALS", "SPRING 2015", and a computer generated or hand drawn image relating to construction materials. Originality is always encouraged.

Textbook: There is no textbook required. Course information will be presented in class, with additional information provided as handouts.

Copyright: All course materials and presentations carry a copyright © 2015 Nine Gables.

Department Classroom Policy:

The classroom is to be regarded as the "class office" and therefore professional behavior is expected at all times. Start preparing now for the expectations of future employers. **All cell phones and electronic devices are to be turned off during class**. If any of these devices interrupt class, then you will be asked to leave for the remainder of the class period. This will be indicated as an absence for the class period. A second disruptive occurrence results in dropping the class. (Department Policy)

No food or drink is permitted in the classroom. Also no hats/caps, newspapers, electronic devices or other distracting items will be allowed.

University and College of Engineering Policies:

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students with a wide range of disabilities including, but not limited to, physical disabilities, medical conditions, learning disabilities, attention deficit disorder, depression, and anxiety. If you are a student enrolled in campus/online courses through the Manhattan or Olathe campuses, contact the Student Access Center at accesscenter@k-state.edu, 785-532-6441; for Salina campus, contact the Academic and Career Advising Center at acac@k-state.edu, 785-826-2649.

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Day 21	Tuesday	April 7	Masonry	
Day 22	Thursday	April 9	Masonry	
	Monday	April 13	45 + minute Help Session at 10:00 am, 2:30 pm and 7:00 pm	
Day 23	Tuesday	April 14	Exam Three	
Day 24	Thursday	April 16	Masonry	
Day 25	Tuesday	April 21	Masonry	
Day 26	Thursday	April 23	Wood	
Day 27	Tuesday	April 28	Wood	
Day 28	Thursday	April 30	Wood	
Day 29	Tuesday	May 5	Wood	
Day 30	Thursday	May 7	Wood	
	Sunday	May 10	45 minute Help Session at 7:00 and 7:45 pm	
Day 31A	Monday	May 11	Exam Four	
	Wednesday	May 13	45 minute Help Session at 7:00 and 7:45 pm	
Day 31B	Thursday	May 14	Exam Four	

KANSAS STATE UNIVERSITY | Architectural Engineering and Construction Science

Construction Techniques & Detailing
CNS 321 Spring 2015

Instructor: **Tom Logan** Office: Seaton 232
Office Phone: (785) 532-3580 Office Hours: Posted on Door
Email: tdlogan@ksu.edu

Instructor: **Katie Loughmiller** Office: Seaton 230
Office Phone: (785) 532-3567 Office Hours: Posted on Door
Email: loughmil@ksu.edu

COURSE DESCRIPTION:

Study of construction methods and procedures in the assembly of building materials. Nine hours of lab per week. Prerequisite: Admission to the Professional Program

CLASS MEETING TIME:	**ROOM:**
MWF – 8:30-11:20 am	254H Seaton Hall
TU – 7:30-11:20 am	254H Seaton Hall

STUDENT LEARNING OUTCOMES:

Upon completion of this course, the student shall demonstrate the following proficiencies:

1. Identify materials used in building assemblies.
2. Identify basic construction techniques
3. Demonstrate an understanding of construction sequences.
4. Demonstrate familiarity with the current methods and standards used in architectural detailing.
5. Demonstrate improved graphic communication abilities.
6. Illustrate construction materials in relationship to one another as an assembly or as part of a larger system.

EVALUATION:

Grade Scale:

93 to 100 = A
85 to 92 = B
78 to 84 = C
70 to 77 = D
0 to 69 = F

Grades will be based upon a percentage of total points possible:

$$\%\text{grade} = \frac{\text{Points Earned}}{\text{Total Points Possible}} \times 100$$

Evaluation Values:

1175 – Class Assignments
90 – Rework
100 – Model
65 – Online quizzes
200 – Final Project
20 – Notebook
50 – Portfolio
1700 – Anticipated Total

Class Assignments:

Class time will be spent working through problems and applications in graphic communication of architectural and construction details. Each student will be responsible to complete each assignment prior to the given deadline. Class time will be used to work on the project while the instructor is available for questions and clarifications.

Portfolio:

Each student is expected to maintain a course portfolio that will be turned in at the end of the semester. The portfolio is developed as a class project in the 4th week of classes.

Notebook:

Each student is expected to create and maintain throughout the semester a dedicated three-ring binder notebook. This notebook shall include all class notes (student), class handouts, graded assignments, and any other relative information. All notebooks must include a cover page on the outside of the notebook, a binder label, and a "Table of Contents" with matching labeled tab dividers for each assignment. All student notes within shall be recopied if the original notes are not legibly written. The notebook will be graded on completeness, ease of reference and neatness. Notebooks may be collected at any time during the semester for review without prior notice.

Late Work:

All projects are due at the time, date and location specified. Late work will be reviewed, but will receive a grade of **ZERO (0)**. **"Late"** is defined as work turned in after the start of class on the due date. Real emergencies, as determined at the sole discretion of the instructor, that delay submission of an assignment may be considered on an individual basis.

TEXT/REFERENCE MATERIALS:

Required Text: *Building Construction Illustrated*, Ching, 5th ed., ISBN 978-1-118-45834-1

REQUIRED ADDITIONAL MATERIALS:

Drafting Equipment and Supplies
11x17 Vellum

CLASSROOM POLICIES:

The classroom is to be regarded as a "class office". Therefore, professional behavior is expected at all times.

1. Attendance is mandatory and expected:
    a. Each student is responsible for all information introduced in class.
    b. Excused absences are to be requested and approved prior to the beginning of the class period. Approved absences are at the discretion of the instructor and will be considered on a case by case basis.

c. If an absence is due to illness, a doctor's note is required for the absence to be excused.
d. Missing/leaving class for internship/job interviews is not acceptable and will not be counted as an excused absence. Schedule interviews outside of class time.
e. Unexcused absences will result in a **20** point reduction in total grade per occurrence. (This includes absences caused by cell phone disruptions and tardiness). You will be allowed **one** discretionary unexcused absence for the semester, so use it wisely!
f. Leaving class early will result in a deduction of **10** points per occurrence.

2. Tardiness will not be tolerated. If you are not present in the classroom at the start of class (by the instructor's watch), a **10** point deduction will be assessed.
3. Arrive for class prepared to go to work. This means having all the supplies and equipment required to complete the assigned project.
4. Leave it better than you found it. Keep the classroom clean and dispose of all trash at the end of each class.

Department Classroom Policy:

The classroom is to be regarded as a professional business environment. Therefore professional behavior is expected at all times. Start preparing now for the expectations of future employers. **All cell phones, iPods, etc. are to be silenced or turned off during class.** If any of these devices interrupt class, then you may be asked to leave for the remainder of the class period. This will be indicated as an absence for the class period. A second disruptive occurrence may result in being dropped from the class.

Food, beverage and tobacco products are not permitted in the classroom. Keep the classroom clean by properly disposing of all trash, newspapers, etc. at the end of class.

Kansas State University and College of Engineering Policies

Statement Regarding Academic Honesty:

Kansas State University has an Honor System based on personal integrity, which is presumed to be sufficient assurance in academic matters one's work is performed honestly and without unauthorized assistance. Undergraduate and graduate students, by registration, acknowledge the jurisdiction of the Honor System. The policies and procedures of the Honor System apply to all full and part-time students enrolled in undergraduate and graduate courses on-campus, off-campus, and via distance learning. The honor system website can be reach via the following URL: *www.ksu.edu/honor* .

A component vital to the Honor System is the inclusion of the Honor Pledge which applies to all assignments, examinations, or other course work undertaken by students. The Honor Pledge is implied, whether or not it is stated: "On my honor, as a student, I have neither given nor received unauthorized aid on this academic work." A grade of XF can result from a breach of academic honesty. The F indicates failure in the course; the X indicates the reason is an Honor Pledge violation.

Statements Regarding Students with Disabilities:

Students with disabilities who need classroom accommodations, access to technology, or information about emergency building/campus evacuation processes should contact the Student Access Center and/or their instructor. Services are available to students with a wide range of disabilities including, but not limited to, physical disabilities, medical conditions, learning disabilities, attention deficit disorder, depression, and anxiety. If you are a student enrolled in campus/online courses through the Manhattan or Olathe campuses, contact the Student Access Centerat accesscenter@k-state.edu, 785-532-6441; for Salina campus, contact the Academic and Career Advising Center at acac@k-state.edu, 785-826-2649.

Statement for Copyright Notification

Copyright 2014 (Tom Logan and or Katie Loughmiller) as to this syllabus and all lectures. During this course students are prohibited from selling notes to or being paid for taking notes by any person or commercial firm without the express written permission of the professor teaching this course.

Statement Defining Expectations for Classroom Conduct

All student activities in the University, including this course, are governed by the Student Judicial Conduct Code as outlined in the Student Governing Association By Laws, Article V, Section 3, number 2. Students who engage in behavior that disrupts the learning environment may be asked to leave the class.

Campus Safety Statement

Kansas State University is committed to providing a safe teaching and learning environment for student and faculty members. In order to enhance your safety in the unlikely case of a campus emergency make sure that you know where and how to quickly exit your classroom and how to follow any emergency directives. To view additional campus emergency information go to the University's main page, www.k-state.edu, and click on the Emergency Information button.

Harassment Policy:

I believe that engineers must not only be the people who know how to do things right, but also those who know the right things to do. (Quote by Dr. Joseph Bordogna, National Science Foundation) One purpose of your education is to help you develop skills, approaches, and abilities that are necessary for effective teamwork, and for your success in your profession and as a citizen. It is important that you understand your rights and responsibilities regarding the University's Sexual and Racial Harassment policies. (Full text of the policies can be found on KSU's web site at ***www.ksu.edu/uauc/fhbook/fhxj.html.*** If you experience any situations, in or out of class, that seem inappropriate or that make you uncomfortable, a list of resources and courses of action to assist you can be found on the College of Engineering web site at ***www.engg.ksu.edu/students/statement-harrassment.htm***.

Tobacco Use Policy:

The College of Engineering is designated a tobacco-free workplace and the use of tobacco products, including cigarettes, cigars, and smokeless tobacco, is prohibited in any college building, facility, or vehicle. It is the responsibility of each college member (faculty, staff, or student) to adhere to and enforce the policy, and to inform visitors of this policy. If a student, faculty member or college employee continues to disregard the policy, he/she may lose access privileges.

Tech and Detail schedule

Week	Day	Project	Description	Week
1	1	1	Introduction/Equipment and Supplies/Scales/Lines and lettering lecture and assignment	21-Jan
1	2	2	Orthographic projection lecture and assignment	23-Jan
2	3	3	Dimensioning lecture and assignment/Plan set review/floor plans	28-Jan
2	4	4/5/6	Floor plans and assignment/Sections and symbols lecture and assignment/Portfolio	30-Jan
3	7	7	Isometrics and dimensioning lecture and assignment	4-Feb
3	8	8/9	Sketching, Lines & Lettering	6-Feb
4		10	Concrete	11-Feb
5		11	Masonry/Portfolio due	18-Feb
6		12	Structural framing	21-Feb
7		13	Roofing and waterproofing	25-Feb
8		14	Doors and windows	4-Mar
9		15	Wall section - residential	11-Mar
10		16	Wall section - commercial	25-Mar
11		17	Stairs and Codes	1-Apr
12			Plan reading exercise 1	8-Apr
12			Plan reading exercise 2	15-Apr
13		18	Model/Final project kickoff	22-Apr
14		19	Final Project	29-Apr
15			Final Project-Due 5/12	6-May

KANSAS STATE UNIVERSITY | Architectural Engineering and Construction Science

CNS 325 Construction Drawings
Spring 2015

Instructor:	**Rod Elder**
Office:	**254C Seaton Hall**
Office Hours:	**As posted**
E-mail Address:	**relder@ksu.edu**
Office Phone:	**785-532-3479**

Course Description

Production of a partial set of construction drawings. Emphasis on construction procedures. Introduction to shop drawings. Prerequisite: CNS 321 – Construction Techniques and Detailing.

Student Learning Outcomes

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

1. Interpret and understand construction documents (drawings, specifications and submittals),
2. Prepare construction drawings, mechanically and freehand, in a manner that successfully conveys the necessary information,
3. Apply requirements of the 2009 International Building Code (IBC) and the 2010 ADA Standards for Accessible Design to construction drawings, and
4. Demonstrate "life-long learning skills" by researching materials needed for the construction of a building.

Class Schedules	Room
08:30 – 11:20 MWF	Seaton 254I
11:30 – 2:20 MWF	Seaton 254I
07:30 – 11:20 TU	Seaton 254I

Evaluation

Grading Scale

A	90 – 100 %	Grades will be based upon a percentage of total points possible:
B	80 – 89.9 %	% grade = Points earned / Points Possible
C	70 – 79.9 %	
D	60 – 69.9 %	
F	59.9 % and below	

Approximate Evaluation Values

Miscellaneous assignments and quizzes	100
Construction drawings	364
Freehand sketch	20
Notebook	30
Anticipated Total Points	514

In-Class Problems and Quizzes
During the course of the semester, miscellaneous assignments and construction document quizzes will be completed.

Construction Drawings
During the course of the semester, five (5) full-size sheets of construction drawings will be completed on the assigned building. Point values vary depending on the complexity of the drawing. Grading criteria will be provided at the start of each drawing.

Attendance
Attendance is mandatory for this class.

- Attendance will be graded as extra credit, with each student beginning with:
  - ❖ MWF class – fifteen (15) points, and
  - ❖ TU class – ten (10) points.

  Absences for any reason will result in a deduction of five (5) points per occurrence. Arrival for class after the first ten (10) minutes will be graded as an absence, regardless of the actual time of arrival. Negative extra credit attendance grades are possible.

Reference Materials and Texts

- Required:
  - 2010 ADA Standards for Accessible Design (available for purchase at room 24, Umberger Hall)
  - Building Construction Illustrated, Fifth Edition, Francis D. K. Ching
  - One set of construction drawings (to be provided)
- Optional:
  - 2009 International Building Code
    - may be accessed at http://publicecodes.cyberregs.com/icod/ibc/2009/index.htm

Class Policies

- Students are expected to be in the classroom on time and ready to work when class begins.
- A student is considered late if he/she arrives after the official class start time, but within the first ten (10) minutes. Punctuality will be graded on subsequent construction drawings submitted for grading, with a one (1) point deduction for each instance of a student being late.
- Late work should not happen. Work submitted after the stated due date/time will have points deducted as follows:
  - Within 15 minutes of the stated time – minus 10% of the drawing point value
  - More than 15 minutes late, but within 30 minutes of the stated time – minus 25% of the drawing point value
  - More than 30 minutes late – a grade of zero (0) will be recorded and the drawing will not be reviewed
- Extenuating circumstances will be considered on a case-by-case basis, and only with documentation acceptable to the instructor.

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CNS 325 – Construction Drawings
Spring 2015

Appendix A

Academic Honesty

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Appendix B

Drawings

The drawings listed below will be required during the semester.
Unless otherwise directed, all drawings will be hand-drawn on 24”x 36” vellum or mylar.

Sheet A-1	
Lower Level Floor Plan	1/4” = 1’ - 0”
Foundation Plan	1/8” = 1’ - 0”
Door Schedule	
Sheet A-2	
First Floor Plan	1/4” = 1’ - 0”
Precast Panel Plan	1/8” = 1’ - 0”
Door Schedule	
Sheet A-3	
Exterior Elevations	1/4” = 1’ - 0”
Sheet A-4	
Wall Sections	3/4” = 1’- 0”
Details	1-1/2” = 1’- 0”
Sheet SD-1	
Site Demolition Plan	1” = 10’ - 0”
Sheet T-1	
Site Plan	1” = 10’ - 0”
Typical Details	TBD

Submittal Dates

The following are the submittal dates for required drawings.

Sheet A-1	**Monday, February 23**
Sheet A-2	**Monday, March 09**
Sheet A-3	**Friday, March 27**
Sheet A-4	**Friday, April 10**
Sheet SD-1	**Monday, April 20**
Notebook	**Friday, April 24**
Sheet T-1	**Friday, May 08**

Assignment Schedule – MWF

Week	Dates	Content	Reading Assignments (Ching, unless otherwise noted)
1	Jan 21	Course introduction	
	Jan 23	**International Building Code (IBC)**	
2	Jan 26	**2010 ADA Standards for Accessible Design**	Skim: ADA Standards, Chapters 1-6
	Jan 28	**Reading plan drawings** (architectural and structural)	4.02-4.09, 4.11-4.13, 5.41-5.46, 7.28-7.29, 7.32-7.34, 8.02-9.16
		Begin Sheet A-1 (Lower Level Floor Plan, Foundation Plan, etc.)	
	Jan 30	Continue Sheet A-1	
3	Feb 02	**Specifications and submittals**	
	Feb 02-06	Continue Sheet A-1	
4	Feb 09-13	Continue Sheet A-1	
5	Feb 16-20	Continue Sheet A-1	
6	Feb 23	**Sheet A-1 due by 4:00 p.m.**	
	Feb 25	**Reading structural, mechanical and electrical drawings**	3.02-3.26, 11.02-11.42
		Begin Sheet A-2 (First Floor Plan)	
	Feb 27	Continue Sheet A-2	
7	Mar 02-06	Continue Sheet A-2	
8	Mar 09	**Sheet A-2 due by 4:00 p.m.**	
	Mar 11	**Reading elevation drawings**	6.02-6.03, 6.28-6.30, 7.02-7.06
		Begin Sheet A-3 (Exterior Elevations)	
	Mar 13	Continue Sheet A-3	
A	Mar 16-20	**Spring Break**	
9	Mar 23-27	Continue Sheet A-3	
	Mar 27	**Sheet A-3 due by 4:00 p.m.**	
10	Mar 30	**Reading section and detail drawings**	6.04-6.30, 7.28-7.29, 7.32-7.34, 7.39-7.44, 7.45-7.47
	Mar 30	**Begin Sheet A-4** (Wall Sections and Details)	
	Apr 01-03	Continue Sheet A-4	
11	Apr 06-10	Continue Sheet A-4	
	Apr 10	**Sheet A-4 due by 4:00 p.m.**	
12	Apr 13	**Reading site drawings**	1.10-1.11, 1.24-1.25, 1.26-1.29, 1.36-1.38
		Begin Sheet SD-1 (Site Demolition Plan)	
	Apr 15-17	Continue Sheet SD-1	
13	Apr 20	**Sheet SD-1 due by 4:00 p.m.**	
	Apr 22	**Begin Sheet T-1** (Site Plan and Misc)	
	Apr 24	Continue Sheet T-1; **Notebook due by 4:00 p.m.**	
14	Apr 27-May 01	Continue Sheet T-1	
15	May 04-08	Continue sheet T-1	
	May 08	**Sheet T-1 due by 4:00 p.m.**	

Appendix B

Drawings

The drawings listed below will be required during the semester.
Unless otherwise directed, all drawings will be hand-drawn on 24”x 36” vellum or mylar.

Sheet A-1	
Lower Level Floor Plan	1/4” = 1’ - 0”
Foundation Plan	1/8” = 1’ - 0”
Door Schedule	
Sheet A-2	
First Floor Plan	1/4” = 1’ - 0”
Precast Panel Plan	1/8” = 1’ - 0”
Door Schedule	
Sheet A-3	
Exterior Elevations	1/4” = 1’ - 0”
Sheet A-4	
Wall Sections	3/4” = 1’- 0”
Details	1-1/2” = 1’- 0”
Sheet SD-1	
Site Demolition Plan	1” = 10’ - 0”
Sheet T-1	
Site Plan	1” = 10’ - 0”
Typical Details	TBD

Submittal Dates

The following are the submittal dates for required drawings.

Sheet A-1	**Monday, February 23**
Sheet A-2	**Monday, March 09**
Sheet A-3	**Friday, March 27**
Sheet A-4	**Friday, April 10**
Sheet SD-1	**Monday, April 20**
Notebook	**Friday, April 24**
Sheet T-1	**Friday, May 08**

Assignment Schedule – TU

Week	Dates	Content	Reading Assignments (Ching, unless otherwise noted)
1	Jan 20	Course introduction	
	Jan 22	**International Building Code (IBC)**	
2	Jan 27	**2010 ADA Standards for Accessible Design**	Skim: ADA Standards, Chapters 1-6
	Jan 29	**Reading plan drawings** (architectural and structural)	4.02-4.09, 4.11-4.13, 5.41-5.46, 7.28-7.29, 7.32-7.34, 8.02-9.16
		Begin Sheet A-1 (Lower Level Floor Plan, Foundation Plan, etc.)	
3	Feb 03	**Specifications and submittals**	
	Feb 03-05	Continue Sheet A-1	
4	Feb 10-12	Continue Sheet A-1	
5	Feb 17-19	Continue Sheet A-1	
6	Feb 23	**Sheet A-1 due by 4:00 p.m.**	
	Feb 24	**Reading structural, mechanical and electrical drawings**	3.02-3.26, 11.02-11.42
		Begin Sheet A-2 (First Floor Plan)	
	Feb 26	Continue Sheet A-2	
7	Mar 03-05	Continue Sheet A-2	
8	Mar 09	**Sheet A-2 due by 4:00 p.m.**	
	Mar 10	**Reading elevation drawings**	6.02-6.03, 6.28-6.30, 7.02-7.06
		Begin Sheet A-3 (Exterior Elevations)	
	Mar 12	Continue Sheet A-3	
A	Mar 16-20	**Spring Break**	
9	Mar 24-26	Continue Sheet A-3	
	Mar 27	**Sheet A-3 due by 4:00 p.m.**	
10	Mar 31	**Reading section and detail drawings**	6.04-6.30, 7.28-7.29, 7.32-7.34, 7.39-7.44, 7.45-7.47
	Mar 31	**Begin Sheet A-4** (Wall Sections and Details)	
	Apr 02	Continue Sheet A-4	
11	Apr 07-09	Continue Sheet A-4	
	Apr 10	**Sheet A-4 due by 4:00 p.m.**	
12	Apr 14	**Reading site drawings**	1.10-1.11, 1.24-1.25, 1.26-1.29, 1.36-1.38
		Begin Sheet SD-1 (Site Demolition Plan)	
	Apr 16	Continue Sheet SD-1	
13	Apr 20	**Sheet SD-1 due by 4:00 p.m.**	
	Apr 21	**Begin Sheet T-1** (Site Plan and Misc)	
	Apr 23	Continue Sheet T-1	
	Apr 24	**Notebook due by 4:00 p.m.**	
14	Apr 28-30	Continue Sheet T-1	
15	May 05-07	Continue sheet T-1	
	May 08	**Sheet T-1 due by 4:00 p.m.**	

Construction Drawings

CNS325

Spring 2015

Drawing Evaluation:

During the course of the semester, six (6) construction drawings will be prepared and submitted for grading. Drawings shall be prepared on 24 x 36 vellum or mylar, with a 24 x 36 photocopy submitted no later than the specified date.

Evaluation of each drawing will be completed using the evaluation sheet provided at the start of each drawing. The student is to complete the "Name" and "Hour" spaces, and submit the evaluation sheet with his/her drawing. Failure to submit the evaluation sheet with the drawing will result in a deduction of ten (10) additional points from the numerical grade given by the instructor on the drawing.

Late and Missed Assignments:

All drawings are due at the time and date specified in Appendix B to the syllabus. Refer to the syllabus for penalties for late drawings.

Missed assignments will result in a zero (0) being recorded for the assignment; no make-ups will be given.

Exceptions:

1. Documented circumstances beyond a student's control (family emergency, death in the family, etc.), and
2. If the faculty-sponsor of a student organization issues a letter advising that a student will be away on department business on the due date of an assignment.

In such instances, the student must confer with the instructor and make arrangements to turn in the work by a date acceptable to the instructor.

Construction Drawings

CNS325

Spring 2015

Drawing Evaluation

Name: _____ Hour: _____

Assignment: Sheet A-1 (100 points)
Lower Level Floor Plan/Foundation Plan/Schedules/Research Materials

Due: Monday, February 23, 2015, 4:00 p.m.

Graphic Communication (72 points)						_____
Sheet composition	0	1	2	3	4	
Line work	0	1	2	3	4	
Notes	0	1	2	3	4	
Material symbols	0	1	2	3	4	
Lettering	0	1	2	3	4	
Spelling	0	1	2	3	4	
Accessibility compliance	0	1	2	3	4	
Code compliance	0	1	2	3	4	
Partition schedule	0	1	2	3	4	
Door schedule	0	1	2	3	4	
Dimensioning	0	3	6	9	12	
Foundation plan	0	3	6	9	12	
Plan coordination	0	2	4	6	8	
Technical Understanding (24 points)						_____
Research materials	0	4	8	12	16	
Constructability and accuracy	0	2	4	6	8	
Participation (4 points)						_____
Punctuality	0	1	2	3	4	
				TOTAL		_____

A	100 – 90%
B	89.9 – 80%
C	79.9 – 70%
D	69.9 – 60%
F	59.9 and below

Construction Drawings

CNS325

Spring 2015

Drawing Evaluation

Name: _____ Hour: _____

Assignment: Sheet A-2 (88 points)
First Floor Plan/Precast Concrete Plan/Schedules/Research Materials

Due: Monday, March 13, 2015, 4:00 p.m.

Graphic Communication (72 points)						_____
Sheet composition	0	1	2	3	4	
Line work	0	1	2	3	4	
Notes	0	1	2	3	4	
Material symbols	0	1	2	3	4	
Lettering	0	1	2	3	4	
Spelling	0	1	2	3	4	
Accessibility compliance	0	1	2	3	4	
Code compliance	0	1	2	3	4	
Partition schedule	0	1	2	3	4	
Door schedule	0	1	2	3	4	
Dimensioning	0	3	6	9	12	
Precast Concrete Slab Plan	0	3	6	9	12	
Plan coordination	0	2	4	6	8	
Technical Understanding (12 points)						_____
Research materials	0	1	2	3	4	
Constructability and accuracy	0	2	4	6	8	
Participation (4 points)						_____
Punctuality	0	1	2	3	4	
				TOTAL		_____

A	100 – 90%
B	89.9 – 80%
C	79.9 – 70%
D	69.9 – 60%
F	59.9 and below

Construction Drawings

CNS325

Spring 2015

Drawing Evaluation

Name: _____ Hour: _____

Assignment: Sheet A-3 (40 points)
North and East Exterior Elevations

Due: Friday, April 03, 2015, 4:00 p.m.

Graphic Communication (28 points)						_____
Sheet composition	0	1	2	3	4	
Line work	0	1	2	3	4	
Notes	0	1	2	3	4	
Material symbols	0	1	2	3	4	
Lettering	0	1	2	3	4	
Spelling	0	1	2	3	4	
Elevation references	0	1	2	3	4	
Technical Understanding (8 points)						_____
Constructability and accuracy	0	2	4	6	8	
Participation (4 points)						_____
Punctuality	0	1	2	3	4	
				TOTAL		_____

A	100 – 90%
B	89.9 – 80%
C	79.9 – 70%
D	69.9 – 60%
F	59.9 and below

Construction Drawings

CNS325

Spring 2015

Drawing Evaluation

Name: _____ Hour: _____

Assignment: Sheet A-4 (76 points)
Wall Sections

Due: Tuesday, April 21, 2015, 4:00 p.m.

Graphic Communication (72 points)						_____
Sheet composition	0	1	2	3	4	
Lettering	0	1	2	3	4	
Spelling	0	1	2	3	4	
Section 1: West Wall Section						
Line work	0	1	2	3	4	
Notes	0	1	2	3	4	
Reference elevations	0	1	2	3	4	
Accuracy	0	2	4	6	8	
Section 2: Stair Wall Section						
Line work	0	1	2	3	4	
Notes	0	1	2	3	4	
Reference elevations	0	1	2	3	4	
Accuracy	0	2	4	6	8	
Section 3: Described Wall Section						
Line work	0	1	2	3	4	
Notes	0	1	2	3	4	
Reference elevations	0	1	2	3	4	
Accuracy	0	2	4	6	8	
Participation (4 points)						_____
Punctuality	0	1	2	3	4	
				TOTAL		_____

A	100 – 90%
B	89.9 – 80%
C	79.9 – 70%
D	69.9 – 60%
F	59.9 and below

Construction Drawings

CNS325

Spring 2015

Drawing Evaluation

Name: _____ Hour: _____

Assignment: Sheet SD-1 (20 points)
Site Demolition Plan

Due: Monday, April 20, 2015, 4:00 p.m.

Graphic Communication (16 points)						_____
Sheet composition	0	1	2	3	4	
Line work	0	1	2	3	4	
Lettering	0	1	2	3	4	
Notes	0	1	2	3	4	
Technical Understanding (4 points)						_____
Constructability and accuracy	0	1	2	3	4	
			TOTAL			_____

A	100 – 90%
B	89.9 – 80%
C	79.9 – 70%
D	69.9 – 60%
F	59.9 and below

Construction Drawings

CNS325

Spring 2015

Drawing Evaluation

Name: _____ Hour: _____

Assignment: Sheet T-1 (56 points)
Site Plan and Detail

Due: Friday, May 08, 2015, 4:00 p.m.

Graphic Communication (44 points)						_____
Sheet composition	0	1	2	3	4	
Line work	0	1	2	3	4	
Notes	0	1	2	3	4	
Lettering	0	1	2	3	4	
Spelling	0	1	2	3	4	
Parking	0	1	2	3	4	
Accessibility compliance	0	1	2	3	4	
Elevations (spot and building floors)	0	1	2	3	4	
Dimensioning	0	2	4	6	8	
Freehand detail (fully noted)	0	1	2	3	4	
Technical Understanding (8 points)						_____
Constructability and accuracy	0	2	4	6	8	
Participation (4 points)						_____
Punctuality	0	1	2	3	4	
				TOTAL		_____

A	100 – 90%
B	89.9 – 80%
C	79.9 – 70%
D	69.9 – 60%
F	59.9 and below

Construction Drawings
CNS 325
Spring 2015
Notebook Evaluation

Name: _____ Hour: _____

Due: Friday, April 24, 2015, 4:00 p.m.

		Value	Grade
	Cover Page/Spine	2	
	Table of Contents	2	
Tab			
1.	Miscellaneous Course Information	4	
2.	IBC Information/Notes	4	
3.	Accessibility Information/Notes	4	
4.	Plan Reading Information/Notes	4	
5.	Grade Sheets and Supplemental Drawing Information	6	
6.	Research Information (cut-sheets)	4	
	Overall Evaluation:	30	

KANSAS STATE UNIVERSITY | Architectural Engineering and Construction Science

CNS 330 SITE CONSTRUCTION

Spring 2015

Professor:	James F. Goddard	Office Hours:	See hours posted by office door
Office:	242 Seaton Hall	E-mail:	goddard@ksu.edu
		Office Phone No.:	532-3569

Course Description Study of site construction problems and procedures, site survey and investigations, review of site plans, construction layouts, earthwork calculation, excavation/shoring methods, computer applications.

TEXT None

STUDENT LEARNING OUTCOMES Upon completion of this course, the student shall be able to:

1. Assess the site/ site plans from the constructor=s viewpoint to analyze the factors affecting construction operations, scheduling, estimating, and costs.
2. Analyze site grading by reading, understanding, and manipulating contours and elevations.
3. Calculate grades and slopes.
4. Solve and calculate horizontal and vertical curves for purposes of construction layouts for civil type projects.
5. Understand foundation systems and the layout of various project structures.
6. Understand and have the competence to calculate utility information and perform utility layout functions.
7. Apply the methodologies of earthwork take-off of cuts and fills.
8. Understand and apply the basics of soil terminologies and testing.

COURSE EVALUATION METHODS

GRADING SYSTEM: Attendance is required and missed material is difficult to make up in recitation and next to impossible in the lab. It is important to attend all recitation sessions. Attendance will be taken and a portion of the final grade will be based upon class attendance and participation. **Tardiness will not be tolerated**. Points are given for *attendance* and *participation* in both recitation and in the lab portions of the course.

Scores from all homework, reports, and attendance in *recitation* will make up 25% of the course grade. Scores from all homework, projects, and attendance and participation in *lab* will make up 25% of the course grade. *Quizzes and exams* will comprise the remaining 50% of the course grade. Grades will then be determined by the following percentage scale:

94 to 100 = A
86 to 93 = B
76 to 85 = C
70 to 75 = D
0 to 69 = F

EXAMS: There will be two exams during the semester each worth 100 points. A comprehensive final exam valued at 200 points will be given on Tuesday, May12, 2015 at 9:40 am. Some unannounced quizzes may be given throughout the semester.

NOTEBOOK: A notebook will be presented for a grade value of 50 points. It is to be due by 3:00 pm on Thursday, May 7, 2015. It may be retrieved on Friday, May 8th **between 8:00 a.m. & 4:00 p.m.**

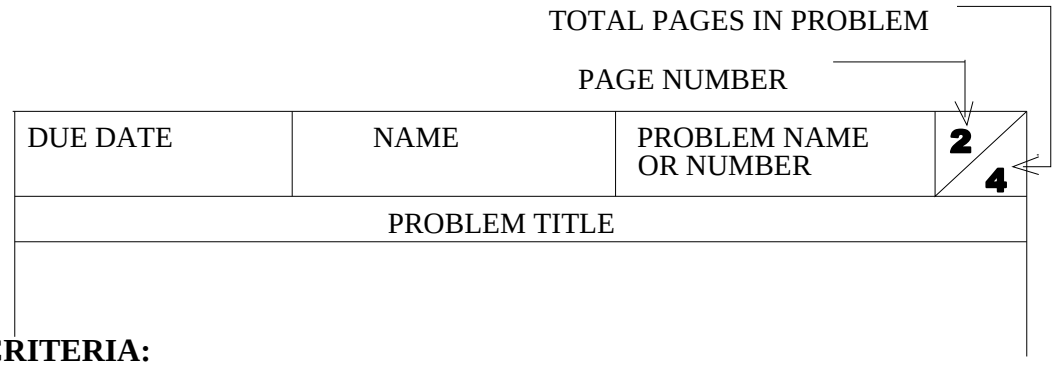
This notebook shall contain all class notes and problems. It shall be presented with a title page and a complete table of contents. It ***also*** shall be labeled on the front of the Notebook.

Each section listed in the table of contents shall be appropriately tabbed. The sections should reflect similar subject matter such as: Curves; or Sewer Lines; etc. All recitation and lab material relating to the same topic shall be bound together in the same section.

HOMEWORK: Points possible on each problem will vary from 20 to 75 points depending upon the difficulty. All homework not turned in by the beginning of the class period on the due date will be considered late and **will not** be accepted.

All homework must be legible and presented in the requested format. If not, it will not be graded. Answers for problems *must be expressed in the correct accuracy and with the appropriate units*.

HOMEWORK: All homework problems not otherwise designated ***shall be*** **on engineering paper and contain the following information on each page:**



OTHER CRITERIA:

DEPARTMENT CLASSROOM POLICIES: The classroom is to be regarded the same as a professional office and professional behavior is expected at all times. The following departmental policies are enforced 24 hours a day, seven days a week in all department spaces.

1. No food or drinks in any containers allowed in the classrooms or labs.
2. No tobacco product usage within Seaton Hall. (Chewing or smoking)
3. **TURN OFF ALL CELL PHONES BEFORE CLASS!!** If a cell phone interrupts the class session, you will be asked to leave the room and a an unexcused absence recorded for that day. A second event will result in the dropping you from the course for the semester. Text messaging is not allowed during class time.

DISHONESTY: INTEGRITY: Kansas State University has an Honor System based on personal integrity which is presumed to be sufficient assurance that, in academic matters, one's work is performed honestly and without unauthorized assistance. Undergraduate and graduate students, by registration, acknowledge the jurisdiction of the Honor System. The policies and procedures of the Honor System apply to all full and part-time students enrolled in undergraduate and graduate courses on-campus, off-campus, and via distance learning. The honor system website can be reached via the following URL: www.k-state.edu/honor. A component vital to the Honor System is the inclusion of the Honor Pledge which applies to all assignments, examinations, or other course work undertaken by students. The Honor Pledge is implied, whether or not it is stated: "On my honor, as a student, I have neither given nor received unauthorized aid on this academic work." A grade of XF can result from a breach of academic honesty. The F indicates failure in the course; the X indicates the reason is an Honor Pledge violation.Visit the Honor System home web page at:

PHYSICAL LIMITATIONS: Students with disabilities who need classroom accommodations, access to technology, or information about emergency building/campus evacuation processes should contact the Student Access Center and/or their instructor. Services are available to students with a wide range of disabilities including, but not limited to, physical disabilities, medical conditions, learning disabilities, attention deficit disorder, depression, and anxiety. If you are a student enrolled in campus/online courses through the Manhattan or Olathe campuses, contact the Student Access Center at accesscenter@k-state.edu, 785-532-6441

CLASSROOM CONDUCT POLICY: All student activities in the University, including this course, are governed by the Student Judicial Conduct Code as outlined in the Student Governing Association By Laws, Article V, Section 3, number 2. Students who engage in behavior that disrupts the learning environment may be asked to leave the class.

KANSAS STATE UNIVERSITY | Architectural Engineering and Construction Science

SITE CONSTRUCTION

Course Topical Content

Introduction to the Construction Site
- Overview of site requirements related to construction

Review of equipment and general techniques
- Instrument overview
- Measurement Techniques

Introduction to land use
- Land surveys
- Topo surveys

Land use control and development
- Zoning principles
- Subdivision regulations
- Deed restrictions
- Easements and Right of ways
- Relationship of building codes to land uses

Site analysis
- Overview from owner and designer perspective
- Constructor's analysis and considerations

Topographical
- Topographic surveying and mapping
- Regrading criteria
- Grading and drainage
- Code requirements

Building layouts
- Staking, Batterboards, and other options for alignment and elevation control
- Column, wall and other layout considerations
- Foundations, types and uses

Utilities
- Plan reading and layout considerations
- Sewerline terminologies and plan reading
- Utility trenching considerations
  - (including overview of safety considerations)
- Sewerline trenching and excavation calculations
- Sewerline layout
  - Batterboard method
  - Laser methods

Linear project layouts
(Drainage channels, canals, roads, etc)
- Horizontal curve calculations
- Horizontal curve layout
- Vertical curve calculations
- Grade and layout computations for complete project
- General staking methods and pavement control
- Slope staking

Site grading control
- Grading methods
- Staking methods and terminologies
- Introduction to interpolation

Earthwork
- Methods of quantity take-off
- Calculations and take-off applications
  - (site excavations, mass excavation, foundation exc.)
- Spreadsheet applications
- Use of cross-sectioning and planimeters
- Use of Paydirt take-off
- Excavation safety considerations

Vertical Control
- Elevation controls for layout
- Vertical alignment of structures
- Alignment on highrise structures
- Use of laser for vertical layout w/in structures

Soil Mechanics
- Introduction
- Terminologies and test usages
- Sieve analysis and gradation
- Other testing and soil engineering
- Moisture content and soil swell and shrinkage

CNS 522 – Theory I

Fall 2014

Professor:	**Susan L. Gerth, PE**
Office:	**2114 Fiedler**
Office Hours:	**MWF 9:30-11:20 Seaton ; T 8:00-11:00**
E-mail:	**sgerth@ksu.edu**
Office Phone No.:	**785-532-1579**

Course Description

The elastic analysis of determinate and indeterminate structures. Emphasis on equilibrium equations, shear and moment diagrams and solving forces in trusses. Includes solutions of indeterminate structures. Pr.: CE 331

Class Meeting MWF 7:30-8:20 a.m. **Room** Seaton 221

Student Learning Outcomes

Upon completion of this course one should be able to:

1. Define loads and critical load combinations
2. Create and use shear and moment diagrams
3. Analyze all types of trusses
4. Evaluate select indeterminate structures.

Evaluation

Grade Scale:

A	100-90%	Grades will be based upon a percentage of total points possible:
B	89-80%	% grade = Points earned / Total Points Possible x 100
C	79-70%	
D	69-60%	
F	59% and below	

Evaluation Values:

Exams	400 points
Unannounced Quizzes	varies

Homework

Successful completion of practice problems is essential to success in a problem-oriented class such as Theory I. To that end, homework is assigned frequently and the student is expected to make a sincere attempt to solve assigned problems prior to the next class. All assigned problems are to be done in accordance with the guidelines provided and may be collected. One or two problems may be collected as part of each exam.

Homework will adhere to the following specifications. Variations will result in reduced grades on the problem section of the notebook.

1. Use a **separate sheet** of 8-1/2 x 11 in standard engineering paper for each problem.
2. All work shall be in pencil, using engineering lettering. Pencil marks will be clear-cut and black. Erasing will be clean and thorough.
3. At the top of each sheet, write the date at the left, “Theory I” in the center, and your name at the right.
4. Include a complete copy of the problem statement and a copy of the given figure at the beginning of each solution. Include all sketches and other graphics on the right side of the page.
5. Draw all sketches **approximately** to scale using a straightedge.

6. Include freebody diagrams in all solutions as appropriate.
7. Arrange all computations in a logical order, and record each step, including source of reference.
8. Mark answers so as to be easily located (use a straightedge). Show the proper units and signs for all answers. Use four significant figures for numbers beginning with a "1", and three significant figures for all other answers.

Exams

There will be four exams, each worth 100 points. There may also be unannounced quizzes throughout the semester to monitor your preparedness for class. No questions about grading discrepancies on an individual exam will be considered after one week from the date those exams are returned. No individual make-up exams will be given. If a student is excused for a scheduled exam (the instructor will determine whether the absence is excused or not), the student may take a comprehensive make-up exam during the last week of classes. No student is eligible for more than one make-up exam.

Notebook

Each student is responsible to keep a notebook of progress through the semester. The students should be prepared to show the notebook when asked by the instructor (don't procrastinate). At the end of the semester, the notebook may be checked in the event of a border line grade.

Text / Reference Materials

Structural Analysis (4th Edition), by Jack C. McCormac;
Loads packet available on KSOL

Classroom Policies

All students are expected to participate in each class. Each student should have pencil, paper, loads packet, text, and calculator available in class. Attendance, although not necessarily taken on a daily basis, is expected for all classes. Students are responsible for all material covered in class each day regardless of attendance status.

Department Classroom Policy:

The classroom is to be regarded as the "class office" and therefore professional behavior is expected at all times. Start preparing now for the expectations of future employers. **All cell phones are to be turned off during class.** If any of these devices interrupt class, the owner may be asked to leave for the remainder of the class period. This will be indicated as an absence for the class period. If a student's cell phone sounds during an exam, the student may be asked to turn in the exam and to leave the class.

Food, beverage and tobacco products are not permitted in the classroom. Keep the classroom clean by properly disposing of all trash, newspapers, etc. at the end of class.

Kansas State University and College of Engineering Policies

Academic Accommodations for Disabled Students

If you have any physical or learning disability which will make it difficult for you to carry out the work as I have outlined it or which will require accommodations or other assistance in this course must notify me within the first two weeks of the class.

Harassment Policy

One purpose of your education is to help you develop skills, approaches, and abilities that are necessary for effective teamwork, and for your success in your profession and as a citizen. It is important that you understand your rights and responsibilities regarding the University's Sexual and Racial Harassment policies. (Full text of the policies can be found on KSU=s web site at ***www.ksu.edu/uauc/fhbook/fhxj.html.*** If you experience any situations, in or out of class, that seem inappropriate or that make you uncomfortable, a list of resources and courses of action to assist you can be found on the College of Engineering web site at ***www.engg.ksu.edu/students/statement-harrassment.htm***.

SafeZone

I am part of the SafeZone community network of trained K-State faculty/staff/students who are available to listen and support you. As a SafeZone Ally, I can help you connect with resources on campus to address problems you face, particularly issues of sexual violence, hateful acts, or concerns faced by individuals due to sexual orientation/gender identity. My goal is to help you be successful and to maintain a safe and equitable campus!

Statement Regarding Academic Honesty

"I believe that engineers must not only be the people who know how to do things right, but also those who know the right things to do." (Quote by Dr. Joseph Bordogna, National Science Foundation). Kansas State University has an Honor & Integrity System based on personal integrity, which is presumed to be sufficient assurance in academic matters one's work is performed honestly and without unauthorized assistance. Undergraduate and graduate students, by registration, acknowledge the jurisdiction of the Honor & Integrity System. The policies and procedures of the Honor & Integrity System apply to all full and part-time students enrolled in undergraduate and graduate courses on-campus, off-campus, and via distance learning. The honor system web site can be reach via the following URL: **www.ksu.edu/honor** or <**http://www.ksu.edu/honor**> **.**

A component vital to the Honor System is the inclusion of the Honor Pledge which applies to all assignments, examinations, or other course work undertaken by students. The Honor Pledge is implied, whether or not it is stated: "On my honor, as a student, I have neither given nor received unauthorized aid on this academic work." A grade of XF can result from a breach of academic honesty. The F indicates failure in the course; the X indicates the reason is an Honor Pledge violation."

Tobacco Use Policy

The College of Engineering is designated a tobacco-free workplace and the use of tobacco products, including cigarettes, cigars, and smokeless tobacco, is prohibited in any college building, facility, or vehicle. It is the responsibility of each college member (faculty, staff, or student) to adhere to and enforce the policy, and to inform visitors of this policy. If a student, faculty member or college employee continues to disregard the policy, he/she will be reported to the dean and may lose access privileges.

Copyright Issues

Class and lecture notes for this course carry a copyright. Students are prohibited from selling (or being paid for taking) notes during this course to or by any person or commercial firm without the express written permission of the professor teaching this course.

CNS 522: Theory I (Spring 2015) : TEXT: "Structural Analysis," McCormac, 4th Ed., Wiley, 2007

CL	DATE	READING	TOPIC	PROBLEMS
1	1/21		Introduction; Princ., Components, Calcs	
2	23	Ch. 4.1-4.15	Support Reactions; Equilibrium Equations	4.3, 5, 8
3	26	Ch. 4.1-4.15	Support Reactions; Equilibrium Equations	
4	28	Ch. 4.11-4.15	Equilibrium Equations	4.13, 16, 18
5	30	Ch. 4.11-4.15	Equilibrium Equations	
6	2/2	Ch. 4.16-4.18	Arches	4.33, 36
7	4	Ch. 4.16-4.19	Arches; Cables	
8	6	Ch. 4.19	Cables	
9	9	Ch. 4.19	Cables	4.46, 48
10	11		Summary and Review	
11	13	Ch. 4	Exam 1	
12	16	Ch. 5.1-5.5	V and M Relationships, Diagrams	5.3, 8, 12, 26, 30, 33
13	18	Ch. 5.1-5.5	V and M Relationships, Diagrams	
14	20	Ch. 5.1-5.5	V and M Relationships, Diagrams	
15	23	Ch. 5.6	V and M for Frames	
16	25	Ch. 5.6	V and M for Frames	5.39, 42
17	27	Ch. 6.1-6.9	Truss Analysis, Method of Joints	6.23, 28
18	3/2	Ch. 6.1-6.9	Truss Analysis, Method of Joints	
19	4	Ch. 7.1-7.2	Method of Sections	7.1,2,3
20	6	Ch. 7.1-7.2	Method of Sections	
21	9	Ch. 7.1-7.2	Method of Sections	
22	11		Summary and Review	
23	13	Ch. 5-7	Exam 2	
	16-20		Spring Break - Classes do not meet	
24	23	Ch. 2.1-2.5	Loads and Codes	
25	25	Ch. 2.1-2.5	Loads and Codes	
26	27	Ch. 3.1-3.3	Tributary Areas; Live Load Reductions	
27	30	Ch. 3.1-3.3	Tributary Areas; Live Load Reductions	
28	4/1	Ch. 3.4-3.7	ASD, Strength Designs, Loading the Structure	
29	3	Ch. 3.4-3.7	ASD, Strength Designs, Loading the Structure	
30	6	Ch. 9.1-9.5	Influence Lines	9.1,2,3
31	8	Ch. 9.6	Qualitative Influence Lines	9.7, 9, 12
	10		Open House - Class does not meet	
32	13	Ch. 9.7	Influence Lines - Concentrated Loads	9.19
33	15	Ch. 9.8	Influence Lines - Distributed Loads	
34	17	Ch. 9.9	Maximum Loading	9.21, 23 (no impact factors)
35	20	Ch. 9.9	Maximum Loading	
36	22	Ch. 2, 3, 9	Exam 3 - may use loads handout with any handwritten notes, except old exams	
37	24	Ch. 19.1-2	Approx. Methods for Stat. Indet. Trusses	19.4, 5(resist same)
38	27	Ch. 19.3,4	Building Frames w/Vertical Loads	19.7 (method from class)
39	29	Ch. 19.3,4	Building Frames w/Vertical Loads	
40	5/1	Ch. 19.3,4	Building Frames w/Vertical Loads	
41	4	Ch. 19.5	Lateral Loads, Portal Method	19.12 (no axial forces, show M
42	6	Ch. 19.5	Lateral Loads, Portal Method	diagr for CGKO)
43	8		Summary and Review	
		Final Exam	See University final exam schedule	

KANSAS STATE UNIVERSITY | Architectural Engineering and Construction Science

CNS 524 - Steel Construction

Spring 2015

Instructor:	**Bill Zhang, PhD, PE, SE, LEED® AP**
Office:	**Seaton 231**
Office Hours:	**Posted by office door**
E-mail:	**billz@ksu.edu**
Office Phone No.:	**785-532-3583**

COURSE DESCRIPTION

Principles and standard practice of building steel structure construction, including design, fabrication, and erection of structural steel in conformance with codes.
Prerequisites: CNS 522 – Theory of Structures.

SCHEDULE MWF 7:30AM – 8:20AM **Room** Seaton 237

STUDENT LEARNING OUTCOMES

For complete ACEC Course Outcomes please see the Course Outcomes Map (provided separately).
Upon completion of this course one should be able to:

1. Understand standard practice and terminology in building steel construction.
2. Understand building steel structures and the components, and the construction process of steel structures.
3. Apply current codes, standards, structural steel principles to solve steel construction problems.
4. Understand basic information on structural steel plans.

EVALUATION

Grading Scale:

A	90.0-100%
B	80.0-89.9%
C	70.0-79.9%
D	60.0-69.9%
F	59.9% and below

Approximate Evaluation Values:

Assignments/Quizzes/Attendance	20%
Mid-term Exams	40%
Final Exam	40%
Total 100%	

HOMEWORK

Homework will be assigned on a regular basis and will be due at the **beginning** of the class on due day, unless otherwise noted. **LATE ASSIGNMENTS WILL NOT BE ACCEPTED FOR CREDIT.** Homework assignments are to be completed as group projects. The class members will be assigned to teams of four individuals per team. **EVERY INDIVIDUAL MEMBER OF THE GROUP SHALL PARTICIPATE, CONTRIBUTE AND UNDERSTAND THE PROBLEMS AND SOLUTIONS.** All assignments must have your names, date, CNS524 and the homework assignment number at the top of each page. Homework must be neat and organized and is to be on engineering problem paper. **Use of a straight edge in preparation of homework assignments is required**. Refer to the attached handout for the homework format and a sample problem. (Points will be deducted from homework assignments that are not neat, organized or do not follow the required format.) Only selected homework will be graded per instructor's discretion. Quizzes based on homework will be used as an assessment tool to check the individual efforts by students.

ATTENDANCE

Class attendance is **REQUIRED** and will be **STRICTLY MONITORED** by the instructor. Missing **THREE CLASSES WITHOUT LEGITIMATE REASONS** will **ZERO** the **ATTENDANCE CREDITS. A SIXTH UNEXCUSED ABSENCE WILL AUTOMATICALLY FAIL THE STUDENT IN THIS CLASS.** Students are responsible for all material presented and/or distributed during class meetings. Attendance and punctuality are considered normal and necessary courtesy extended to the class members and the instructor.

QUIZZES / MID-TERM EXAMS / FINAL EXAM

Quizzes may be given at any time. As mentioned above, quizzes are based on the homework problems due previously. **No makeup quizzes!**

All examinations, including mid-term exams and final exam, will be closed notes and open Vulcraft Manuals and AISC Steel Manual and other allowed references. Solutions must be complete indicating assumptions made, justifications for the assumptions, and answers clearly marked. **No makeup exams, if an exam is missed for a valid documented reason, a special comprehensive exam will be given during final exam week.**

Exam Schedule: 2/20, 4/17 (tentative, subjected to change), and 5/12/2015 (4:10-6:00PM) for the final exam.

NOTEBOOK

All students are expected to develop a 3-ring, loose-leaf course notebook with class notes, handouts, corrected homework problems. The instructor may review notebooks any time during the semester and/or at the end of semester, and appropriate credit will be given based on organization, completeness and neatness.

TEXT / REFERENCE MATERIALS

Textbooks (required):

Steel Construction Manual, 14th Edition, American Institute of Steel Construction.

The following will be distributed by the instructor at the beginning of semester:

Vulcraft Steel Roof & Floor Deck Manual

Vulcraft Steel Joists & Joist Girders Manual

CLASSROOM POLICY:

The classroom is to be regarded as a professional business environment. Therefore professional behavior is expected at all times. **All cell phones and other portable electronics are to be turned off or completely silent during class (except for note-taking purpose and permitted by the instructor) and texting is expressly forbidden.** If any of these devices interrupt class, then you may be asked to leave for the remainder of the class period. A second occurrence may result in being dropped from the class. Food, beverage and tobacco products are prohibited in the classroom. Keep the classroom clean by properly disposing of all trash, newspapers, etc. at the end of class.

All student activities in the University, including this course, are governed by the Student Judicial Conduct Code as outlined in the Student Governing Association By Laws, Article VI, Section 3, number 2. Students who engage in behavior that disrupts the learning environment may be asked to leave the class.

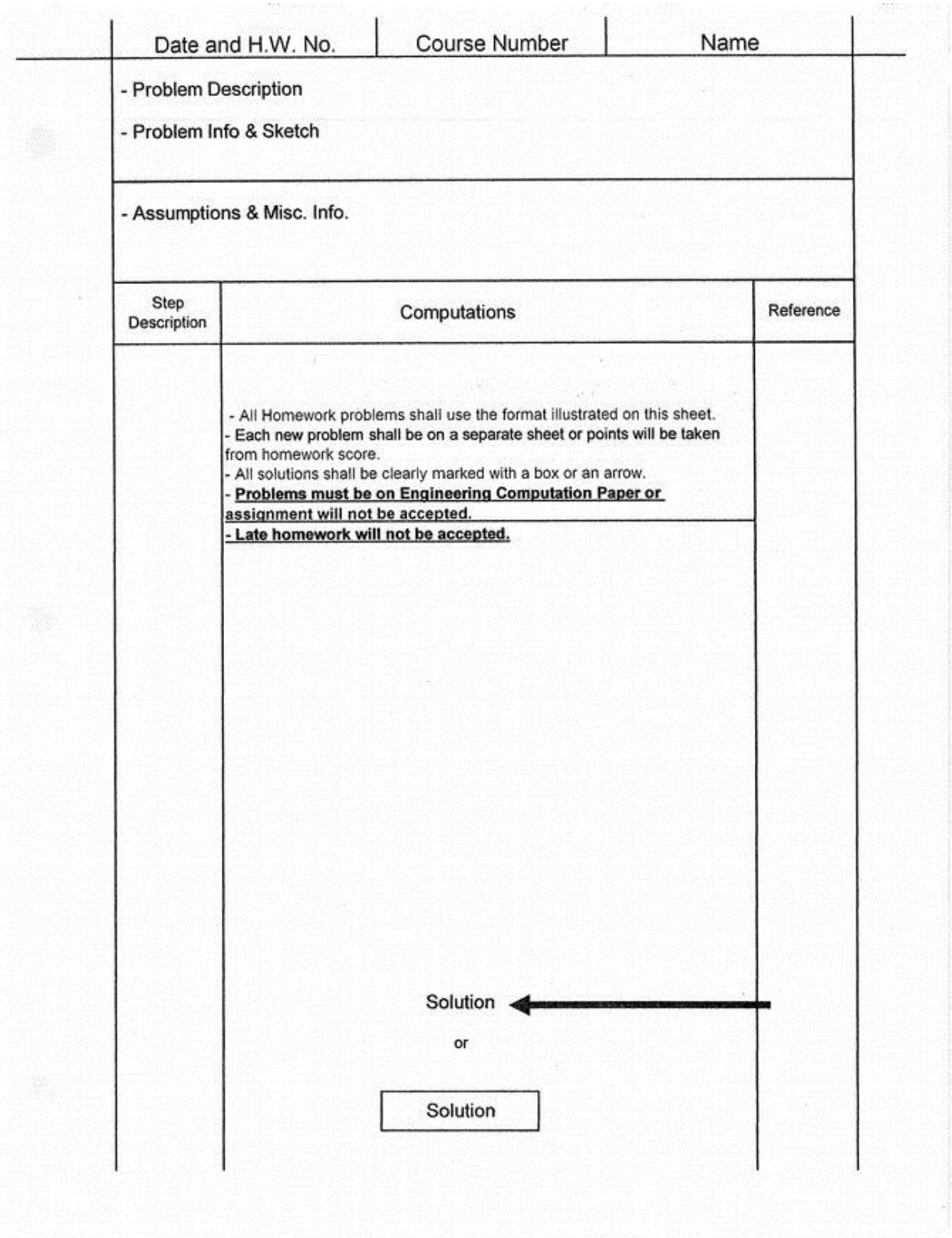
TOPICS COVERED

- See Supplement B

UNIVERSITY POLICIES: Please see Supplement C for additional University Policies.

DISCLAIMER: The instructor reserves the right to modify and/or add to this syllabus as necessary.

Supplement A – Homework Format



Date and H.W. No.	Course Number	Name

- Problem Description
- Problem Info & Sketch

- Assumptions & Misc. Info.

Step Description	Computations	Reference

- All Homework problems shall use the format illustrated on this sheet.
- Each new problem shall be on a separate sheet or points will be taken from homework score.
- All solutions shall be clearly marked with a box or an arrow.
- **Problems must be on Engineering Computation Paper or assignment will not be accepted.**
- **Late homework will not be accepted.**

Solution

or

Solution

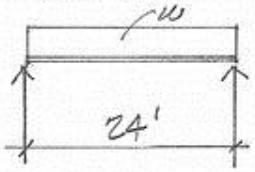
JAN. 16, 2008 | CNS524 | SUTTON STEPHENS | 1/1

HOMEWORK #1

3-0235 — 50 SHEETS — 5 SQUARES
3-0236 — 100 SHEETS — 5 SQUARES
3-0237 — 200 SHEETS — 5 SQUARES
3-0137 — 200 SHEETS — FILLER
COMET

PROBLEM 1

DETERMINE THE MOST ECONOMICAL A992 (F_y = 50 KSI) STEEL W-SECTION THAT CAN BE USED AS A SIMPLY SUPPORTED BEAM THAT SPANS 24-FEET, HAS FULL LATERAL SUPPORT, AND WILL SUPPORT A SERVICE LIVE LOAD OF 0.48 KIPS PER FOOT AND A SERVICE DEAD LOAD OF 0.42 KIPS PER FOOT, NOT INCLUDING THE WEIGHT OF THE BEAM. DESIGN FOR FLEXURE ONLY



ASSUME BEAM WT. = 25 PLF

STEP DESCRIPTION	COMPUTATION	REFERENCE
DETERMINE DESIGN MOMENT	FACTOR LOADS: $W_u = 1.2D + 1.6L$ $W_u = 1.2(0.42 + 0.025) + 1.6(0.48) = 1.330$ KLF $M_u = \frac{W_u L^2}{8} = \frac{1.30 \text{ KLF}\,(24')^2}{8} = 93.7$ K-FT	LRFD EQ (2) AISC PART 2 AISC TBL 3-23 BEAM (1)
SELECT BEAM	$M_u \le \phi M_n$ WHERE $\phi M_n = \phi M_p$ SINCE $L_b \le L_p$ OPTIONS: W10×22 $\phi M_p = 97.5$ K-FT > 93.7 K-FT OK W12×22 $\phi M_p = 110$ K-FT > 93.7 K-FT OK W14×22 $\phi M_p = 123$ K-FT > 93.7 K-FT OK ASSUME THERE ARE NO DEPTH RESTRICTIONS ∴ USE W14×22	AISC TBL 3-2

Supplement B – Course Outline

1. **INTRODUCTION**
   - History of structural steel in construction
   - Mechanical and physical properties of structural steel
   - ASD and LRFD methodologies
2. **STEEL DECK**
   - Non-composite deck
   - Composite deck
   - Roof deck
3. **OPEN WEB STEEL JOISTS**
   - Steel joints
   - Bridging
   - Joist Girders
   - Shop Drawings
4. **TENSION MEMBERS**
   - Limit states of tension members
   - Net area determination
   - Shear lag consideration
   - Block shear
5. **COMPRESSION MEMBERS (COLUMNS)**
   - Limit states of columns
   - Design of columns using AISC Manual design tables
6. **FLEXURAL MEMBERS (BEAMS)**
   - Limit states of flexural members
   - Yielding
   - Lateral-torsional buckling
   - Design tables and charts
   - Shear and Serviceability (deflection)
7. **CONNECTIONS**
   - Bolted connections
   - Welded connections
8. **AISC CODE OF STANDARD PRACTICE**

Supplement C – University Policies

1. **Statement Regarding Academic Honesty**

   Kansas State University has an Honor System based on personal integrity, which is presumed to be sufficient assurance that, in academic matters, one's work is performed honestly and without unauthorized assistance. Undergraduate and graduate students, by registration, acknowledge the jurisdiction of the Honor System. The policies and procedures of the Honor System apply to all full and part-time students enrolled in undergraduate and graduate courses on-campus, off-campus, and via distance learning. The honor system website can be reached via the following URL: www.k-state.edu/honor. A component vital to the Honor System is the inclusion of the Honor Pledge which applies to all assignments, examinations, or other course work undertaken by students. The Honor Pledge is implied, whether or not it is stated: "On my honor, as a student, I have neither given nor received unauthorized aid on this academic work." A grade of XF can result from a breach of academic honesty. The F indicates failure in the course; the X indicates the reason is an Honor Pledge violation.

2. **Statement Regarding Students with Disabilities**

   Students with disabilities who need classroom accommodations, access to technology, or information about emergency building/campus evacuation processes should contact the Student Access Center and/or their instructor. Services are available to students with a wide range of disabilities including, but not limited to, physical disabilities, medical conditions, learning disabilities, attention deficit disorder, depression, and anxiety. If you are a student enrolled in campus/online courses through the Manhattan or Olathe campuses, contact the Student Access Center at accesscenter@k-state.edu, 785-532-6441; for Salina campus, contact the Academic and Career Advising Center at acac@k-state.edu, 785-826-2649.

   Additional Information for Faculty:

   Faculty members who need assistance with accommodating a student with a documented disability should contact the access services office on the appropriate campus. Assistance may include administration of course exams with extended time and/or distraction reduced environment or providing an alternate format of text materials.

3. **Statement Defining Expectations for Classroom Conduct**

   All student activities in the University, including this course, are governed by the Student Judicial Conduct Code as outlined in the Student Governing Association By Laws, Article V, Section 3, number 2. Students who engage in behavior that disrupts the learning environment may be asked to leave the class.

CNS528 – Concrete & Masonry Construction – Spring 2015

Professor:	**Don Phillippi**
Office:	**250 Seaton Hall**
Office Hours:	**MWF 12:30-1:30, TU 2:30-4:00**
E-mail:	**dphillip@k-state.edu**
Office Phone:	**785-532-3574**

CNS528 Concrete & Masonry Construction

Determination of loads, critical load combinations, load path, and stability of structures. Principles of design, fabrication and erection of concrete and masonry structures.
Prerequisite: CNS 522 Theory of Structures

Class Meeting: MWF 10:30 AM -11:20 AM. **Room:** S237

Student Learning Outcomes

Upon completion of this course, students should be able to:

1. Apply the physical properties of concrete, reinforcing steel and masonry.
2. Understand the construction process, loads, critical load combinations, load paths of a structure, and shear/moment diagrams.
3. Evaluate reinforced concrete and masonry systems and terminology using written, graphic and oral skills.
4. Understand structural systems and components such as roofs, walls, floors, decks, beams and columns.
5. Understand standard ACI code specifications for reinforced concrete and masonry through the execution of homework assignments.

Evaluation

Grade Scale

A ≥ 93
86 ≤ **B** < 93
78 ≤ **C** < 86
70 ≤ **D** < 78
F < 70 in combination with failure to: complete exams; or assignments; or attend class.

Tentative Evaluation Weight

Homework	15%
Quizzes	5%
Project	15%
Test 1	15%
Test 2	15%
Test 3	15%
Test 4	15%
Notebook	5%

Note: All homework assignments and quizzes will count toward the final grade.

There is not a Final Examination for this course.

Disclaimer: The instructor reserves the right to modify or add items to this syllabus at his discretion

Homework

Assignments will be posted online or distributed in class. All homework is to be completed as individual assignments and turned in at the beginning of the class hour on the due date, with one problem of each assignment graded. Homework must be neat and organized and is to be on engineering problem paper. Use of a straight edge in preparation of homework assignments is required. Refer to the attached handout for the homework format and a sample problem. Points will be deducted from homework assignments that are not neat, organized or do not follow the required format.

Project

The group project consists of both a presentation and a paper as instructed in a separate handout.

Examinations (Quizzes, Tests, Final Exam)

Unannounced quizzes based on previously assigned reading or the previous lecture will be administered throughout the semester. All quizzes will be closed book and closed notes.

The examinations will generally be open code book with one page of notes (one side only) permitted. Solutions must be complete, well organized, on one side of the paper only, and answers clearly marked. Assumptions must be clearly marked and justified. Draw sketches and identify references.

Notebooks

All students are expected to develop a 3-ring, loose-leaf course notebook with class notes, handouts, homework problems and exams. The instructor will review notebooks the 14th week for an initial review at the request of the student prior to Exam 4 (see requirements on K-State Online). Grading shall occur during Exam 4.

Textbooks and Reference Materials

Textbooks:

1. *American Concrete Institute ACI 318-11 Building Code Requirements for Structural Concrete and Commentary*
2. Course Handouts and Postings on the CNS528 website on K-State On-Line

Reference Codes:

1. *Concrete Structures* by Setareh & Darvas
2. *Building Code Requirements for Masonry Structures (ACI 530-02/ASCE 5-02, TMS 402-02)*

CNS 528 Classroom Policies

Class attendance is strongly encouraged and will be monitored by the instructor. Students are responsible for all material presented and/or distributed during class meetings. Attendance and punctuality are considered normal courtesy extended to the class members and the instructor. In not present when the classroom door is closed, please do not enter.

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Statement for Copyright Notification
Copyright 2014 (Don Phillippi) as to this syllabus and all lectures. During this course students are prohibited from selling notes to or being paid for taking notes by any person or commercial firm without the express written permission of the professor teaching this course.

Campus Safety Statement
Kansas State University is committed to providing a safe teaching and learning environment for student and faculty members. In order to enhance your safety in the unlikely case of a campus emergency make sure that you know where and how to quickly exit your classroom and how to follow any emergency directives. To view additional campus emergency information go to the University's main page, www.k-state.edu, and click on the Emergency Information button.

Academic Freedom Statement
Kansas State University is a community of students, faculty, and staff who work together to discover new knowledge, create new ideas, and share the results of their scholarly inquiry with the wider public. Although new ideas or research results may be controversial or challenge established views, the health and growth of any society requires frank intellectual exchange. Academic freedom protects this type of free exchange and is thus essential to any university's mission. Moreover, academic freedom supports collaborative work in the pursuit of truth and the dissemination of knowledge in an environment of inquiry, respectful debate, and professionalism. Academic freedom is not limited to the classroom or to scientific and scholarly research, but extends to the life of the university as well as to larger social and political questions. It is the right and responsibility of the university community to engage with such issues.

Harassment Policy

"I believe that engineers must not only be the people who know how to do things right, but also those who know the right things to do." (Quote by Dr. Joseph Bordogna, National Science Foundation) One purpose of your education is to help you develop skills, approaches, and abilities that are necessary for effective teamwork, and for your success in your profession and as a citizen. It is important that you understand your rights and responsibilities regarding the University's Sexual and Racial Harassment policies. (Full text of the policies can be found on KSU's web site at ***www.ksu.edu/uauc/fhbook/fhxj.html.*** If you experience any situations, in or out of class, that seem inappropriate or that make you uncomfortable, a list of resources and courses of action to assist you can be found on the College of Engineering web site at ***www.engg.ksu.edu/students/statement-harrassment.html.***

Tobacco Use Policy

The College of Engineering is designated a tobacco-free workplace and the use of tobacco products, including cigarettes, cigars, and smokeless tobacco, is prohibited in any college building, facility, or vehicle. It is the responsibility of each college member (faculty, staff, or student) to adhere to and enforce the policy, and to inform visitors of this policy. If a student, faculty member or college employee continues to disregard the policy, he/she may lose access privileges.

	CNS 528 Concrete & Masonry Construction, Spring 2015				
18-Jan	Week 1	21-Jan		Introduction & Course Overview, Statics/Strength of Materials	Day 1
20-Jan		23-Jan		Centroid, Moment of Inertia and Loading Conditions	Day 2
23-Jan	Week 2	26-Jan		Concrete Elastic Design - Stage 1 (Uncracked), Stage 2 (Cracked)	Day 3
25-Jan		28-Jan	HW 1 Due	Concrete Elastic Design - Stage 1 (Uncracked), Stage 2 (Cracked)	Day 4
27-Jan		30-Jan		Concrete Elastic Design - Stage 1 (Uncracked), Stage 2 (Cracked)	Day 5
30-Jan	Week 3	2-Feb		Concrete Elastic / Ultimate Strength Design (Stage 3)	Day 6
1-Feb		4-Feb	HW 2 Due	Concrete Elastic / Ultimate Strength Design (Stage 3)	Day 7
3-Feb		6-Feb		Concrete Elastic / Ultimate Strength Design (Stage 3)	Day 8
6-Feb	Week 4	9-Feb	HW 3 Due	Concrete Elastic / Ultimate Strength Design (Stage 3)	Day 9
8-Feb		11-Feb	Exam 1	No Recitation	Day 10
10-Feb		13-Feb		ACI Criteria for Continuous Beams and Slabs	Day 11
13-Feb	Week 5	16-Feb		ACI Criteria for Continuous Beams and Slabs	Day 12
15-Feb		18-Feb	HW 4 Due	ACI Criteria for Continuous Beams and Slabs	Day 13
17-Feb		20-Feb		ACI Criteria for Continuous Beams and Slabs	Day 14
20-Feb	Week 6	23-Feb		ACI Criteria for Continuous Beams and Slabs	Day 15
22-Feb		25-Feb	HW 5 Due	ACI Criteria for Continuous Beams and Slabs	Day 16
24-Feb		27-Feb		Continuous Slab Design and Analysis	Day 17
27-Feb	Week 7	2-Mar		Continuous Slab Design and Analysis	Day 18
29-Feb		4-Mar	HW 6 Due	Continuous Slab Design and Analysis	Day 19
2-Mar		6-Mar	Exam 2	No Recitation	Day 20
5-Mar	Week 8	9-Mar		Column Design and Analysis	Day 21
7-Mar		11-Mar		Column Design and Analysis	Day 22
9-Mar		13-Mar	HW 7 Due	Column Design and Analysis	Day 23
12-Mar		16-Mar		Spring Break - No Class	
14-Mar		18-Mar		Spring Break - No Class	
16-Mar		20-Mar		Spring Break - No Class	
19-Mar	Week 9	23-Mar		Isolated Footing Design and Analysis	Day 24
21-Mar		25-Mar		Isolated Footing Design and Analysis	Day 25
23-Mar		27-Mar	HW 8 Due	Vapor Retarder, Repair, Anchors	Day 26
26-Mar	Week 10	30-Mar		Vapor Retarder, Repair, Anchors	Day 27
28-Mar		1-Apr	HW 9 Due	Introduction to Prestressed Concrete Beams	Day 28
30-Mar		3-Apr		Introduction to Prestressed Concrete Beams	Day 29
2-Apr	Week 11	6-Apr		Introduction to Prestressed Concrete Beams	Day 30
4-Apr		8-Apr		Introduction to Prestressed Concrete Beams	Day 31
6-Apr		10-Apr		Open House	
9-Apr	Week 12	13-Apr	HW 10 Due	Introduction to Prestressed Concrete Beams	Day 32
11-Apr		15-Apr	Exam 3	No Recitation	Day 33
13-Apr		17-Apr		Masonry Design and Analysis	Day 34
16-Apr	Week 13	20-Apr		Masonry Design and Analysis	Day 35
18-Apr		22-Apr	HW 11 Due	Masonry Design and Analysis	Day 36
20-Apr		24-Apr		Masonry Design and Analysis	Day 37
23-Apr	Week 14	27-Apr		Masonry Design and Analysis	Day 38
25-Apr		29-Apr	HW 12 Due	Masonry Design and Analysis	Day 39
27-Apr		1-May	Exam 4	No Recitation	Day 40
30-Apr	Week 15	4-May		Project Presentations	Day 41
2-May		6-May		Project Presentations	Day 42
4-May		8-May		Project Presentations	Day 43
9-May	Week 16			**No Final Examination**	

Architectural Engineering & Construction Science
Kansas State University

CNS528 Concrete Construction Grading Rubric

For each homework submitted, one randomly selected problem is graded and the results of that problem reflect the number of possible points (0 – 10) on that assignment. The solution for the entire assignment is provided online subsequent to the due date so the students may check their work on other problems.

For exams, all problems are given a point value that is noted on the exam. All problems are graded and sections of problems are broken up into roughly equal parts for grading. Example: If a 20 point problem is divided up into 4 parts, then each part is worth 5 points.

Quizzes are worth a total of ten points maximum. The students name is worth 3 points, and 3 problems are given that are each worth 3 points. Assuming a student includes their name, if they miss one problem they get 9 points, is they miss two problems they get 6 points, and if they miss all three problems they get 3 points. This encourages the students to attend class.

Group presentations are graded based on what the instructor and the non-presenting students think of the presentation on a 1 – 5 scale. This scale is then modified to provide individual scores based on a group peer evaluation. This portion of the rating system corrects for amount of work (or lack thereof) of the individual group members.

Group papers are graded based on the grading criteria provided in the “Presentations and Projects” handout (attached).

Notebooks are graded based on the grading criteria provided in the “Notebooks” handout (attached).

Concrete Project – CNS 528 Concrete and Masonry Construction, Spring 2015

Topic: Your choice of topic as approved by the instructor related to either concrete or masonry construction

"Example topics" as applied to concrete or masonry: Green technology, sustainable structures, reinforcement types (i.e. epoxy coated, carbon, stainless steel, etc.), specific admixtures, finishing methods, precast, joints in masonry, special construction methods, etc.

Two Parts: Presentation – Approximately ten minutes with each group member given a speaking role. A one to two minute question & answer period will follow.

Paper – One group ten page (minimum length) paper with graphics (use 1-1/2 line spacing). The paper is to demonstrate a good understanding of the topic covered. The paper should be in a professional format with references cited at the end.

Participants: Groups of 3 or 4 with the maximum number of groups limited to 10

Dates: January 23, 2015 – Groups size and members selected by instructor

January 30, 2015 – Topics submitted in class or by email to instructor

Note: Only one group may present a given topic (first come, first serve as noted by email). All other groups must select a different topic.

May 4, 2015 – Groups 1, 2, 3 and 4 present

May 6, 2015 – Groups 5, 6, 7 and 8 present

May 8, 2015 – Groups 9 and 10 present

Grading: All members of a group will receive the same grade for the paper, but individual grades will be assigned for the presentation by the instructor, presenting group members & non-presenting students. Hardcopies of papers are due **May 4, 2015** at the beginning of class.

Grading Criteria:

Presentation	50 points maximum based on instructor and student reviews
Paper	50 points maximum based on instructor review

All presentations are to be in PowerPoint format. All papers are to be in either Word or PDF format. Presentations will be sent to instructor and will be uploaded by the instructor to K-State online for the students in the class to view and/or download.

Rules for Notebooks – Spring 2015:

General – notebooks are to be presented in a professional manner as if it were to be given to your employer.

Notebooks will have the title on the edge and the front cover

Information to include: CNS 523 Timber or CNS 528 Concrete
Student's Name
Spring 2015

Optional: Artwork

Cover page (in front of TOC, inside notebook)

Table of Contents (TOC):

The following is a suggested format:

Notes divided up into specific subjects

Notes and handouts relating to a particular subject are presented under separate tabs relating to the subject in chronological order (example: tab 1: beams, tab 2: columns, etc.)

Following Notes:

Tab for examples/homework/solutions to homework
Tab for miscellaneous handouts
Tab for quizzes
Tab for exams

Note information covered in the exam in the TOC (i.e. statics, beams, tributary area, etc.).

Points:		
	Notebook cover (both edge and front)	5 points
	Cover Page (similar to notebook cover)	5 points
	Table of Contents	5 points
	Appropriate tabs	5 points
	Completeness (contains notes, handouts, etc.)	15 points
	Overall appearance of notebook (legible, neat)	15 points
	Total	50 points

CNS523 Timber Construction – Spring 2015

Professor:	**Don Phillippi**
Office:	**250 Seaton Hall**
Office Hours:	**MWF 12:30-1:30, TU 2:30-4:00**
E-mail:	**dphillip@k-state.edu**
Office Phone:	**785-532-3574**

CNS523 Timber Construction

Course material includes: The determination of loads, critical load combinations, load path, and stability of structures; and the principles of design, fabrication, and erection of timber structures including both solid and laminated materials. Prerequisite: CNS 522 Theory of Structures

Class Meeting: Tuesday & Thursday: 10:30 AM -11:20 AM **Room: S221**

Student Learning Outcomes

Upon completion of this course, students should be able to:

1. Understand and use physical properties of different timber elements.
2. Understand the construction process, loads and load duration, critical load combinations, load paths of a structure, shear/moment diagrams, and deflections.
3. Evaluate timber framing systems and terminology using written, graphic and oral skills.
4. Understand structural systems and components such as roofs, walls, floors, decks, beams and columns.
5. Understand NDS code provisions for timber through the execution of homework assignments.

Evaluation

Grade Scale:

A ≥ 93
86 ≤ **B** < 93
78 ≤ **C** < 86
70 ≤ **D** < 78
F < 70 in combination with failure to: complete exams; or assignments; or attend class.

Tentative Evaluation Weight

Homework	20%
Quizzes	15%
Project	15%
Test 1	15%
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Project

The group project consists of both a presentation and a paper as instructed in a separate handout.

Examinations (Quizzes, Tests)

Unannounced quizzes based on previously assigned reading or the previous lecture will be administered throughout the semester. All quizzes will be closed book and closed notes.

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Notebooks

All students are expected to develop a 3-ring, loose-leaf course notebook with class notes, handouts, homework problems and exams. The instructor will review notebooks the 14th week for an initial review at the request of the student prior to Exam 3 (see requirements on K-State Online). Grading shall occur during Exam 3.

Textbooks and Reference Materials

Textbooks:

1. *National Design Specification for Wood Construction ASD/LRFD and Supplement*, 2012 Edition, American Forest and Paper Association and the American Wood Council
2. Course Handouts and Postings on the CNS523 website on K-State On-Line

Other Recommended Reference Material:

1. *Structural Wood Design* by Aghayere & Vigil
2. *International Building Code*, 2012 Edition, International Code Council
3. *ASCE7-10*

CNS523 Classroom Policies

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Academic Freedom Statement
Kansas State University is a community of students, faculty, and staff who work together to discover new knowledge, create new ideas, and share the results of their scholarly inquiry with the wider public. Although new ideas or research results may be controversial or challenge established views, the health and growth of any society requires frank intellectual exchange. Academic freedom protects this type of free exchange and is thus essential to any university's mission. Moreover, academic freedom supports collaborative work in the pursuit of truth and the dissemination of knowledge in an environment of inquiry, respectful debate, and professionalism. Academic freedom is not limited to the classroom or to scientific and scholarly research, but extends to the life of the university as well as to larger social and political questions. It is the right and responsibility of the university community to engage with such issues.

Harassment Policy

"I believe that engineers must not only be the people who know how to do things right, but also those who know the right things to do." (Quote by Dr. Joseph Bordogna, National Science Foundation) One purpose of your education is to help you develop skills, approaches, and abilities that are necessary for effective teamwork, and for your success in your profession and as a citizen. It is important that you understand your rights and responsibilities regarding the University's Sexual and Racial Harassment policies. (Full text of the policies can be found on KSU's web site at ***www.ksu.edu/uauc/fhbook/fhxj.html.*** If you experience any situations, in or out of class, that seem inappropriate or that make you uncomfortable, a list of resources and courses of action to assist you can be found on the College of Engineering web site at ***www.engg.ksu.edu/students/statement-harrassment.html.***

Tobacco Use Policy

The College of Engineering is designated a tobacco-free workplace and the use of tobacco products, including cigarettes, cigars, and smokeless tobacco, is prohibited in any college building, facility, or vehicle. It is the responsibility of each college member (faculty, staff, or student) to adhere to and enforce the policy, and to inform visitors of this policy. If a student, faculty member or college employee continues to disregard the policy, he/she may lose access privileges.

CNS 523 Timber Construction, Spring 2015				
Week 1	20-Jan		Introduction & Course Overview, Statics/Strength of Materials	Day 1
	22-Jan		Description of Timber Materials and Adjustment Factors	Day 2
Week 2	27-Jan	HW 1 Due	Tributary Widths and Areas, and Beam Loading	Day 3
	29-Jan		Tributary Widths and Areas, and Beam Loading	Day 4
Week 3	3-Feb	HW 2 Due	Beam Design and Analysis	Day 5
	5-Feb		Beam Design and Analysis	Day 6
Week 4	10-Feb	HW 3 Due	Beam Design and Analysis	Day 7
	12-Feb		Beam Design and Analysis	Day 8
Week 5	17-Feb	HW 4 Due	Exam 1 Review	Day 9
	19-Feb	Exam 1	No Recitation	Day 10
Week 6	24-Feb		Special Topics, Notching and Slenderness Factors	Day 11
	26-Feb	HW 5 Due	Tension Forces in Members	Day 12
Week 7	3-Mar		Combined Bending and Tension Forces in Members	Day 13
	5-Mar	HW 6 Due	Combined Bending and Tension Forces in Members	Day 14
Week 8	10-Mar		Members in Compression	Day 15
	12-Mar	HW 7 Due	Combined Bending and Compression Forces in Members	Day 16
	17-Mar		Spring Break - No Class	
	19-Mar		Spring Break - No Class	
Week 9	24-Mar		Combined Bending and Compression Forces in Members	Day 17
	26-Mar	HW 8 Due	Exam 2 Review	Day 18
Week 10	31-Mar	Exam 2	No Recitation	Day 19
	2-Apr		Horizontal Diaphragms, Chords and Struts	Day 20
Week 11	7-Apr		Horizontal Diaphragms, Chords and Struts	Day 21
	9-Apr	HW 9 Due	Horizontal Diaphragms, Chords and Struts	Day 22
Week 12	14-Apr		Shear Walls, Connections	Day 23
	16-Apr		Shear Walls, Connections	Day 24
Week 13	21-Apr	HW 10 Due	Connections	Day 25
	23-Apr		Connections	Day 26
Week 14	28-Apr	HW 11 Due	Exam 3 Review	Day 27
	30-Apr	Exam 3	No Recitation	Day 28
Week 15	5-May		Project Presentations	Day 29
	7-May		Project Presentations	Day 30
Week 16			**No Final Examination**	

CNS523 Timber Construction Grading Rubric

For each homework submitted, one randomly selected problem is graded and the results of that problem reflect the number of possible points (0 – 10) on that assignment. The solution for the entire assignment is provided online subsequent to the due date so the students may check their work on other problems.

For exams, all problems are given a point value that is noted on the exam. All problems are graded and sections of problems are broken up into roughly equal parts for grading. Example: If a 20 point problem is divided up into 4 parts, then each part is worth 5 points.

Quizzes are worth a total of ten points maximum. The students name is worth 3 points, and 3 problems are given that are each worth 3 points. Assuming a student includes their name, if they miss one problem they get 9 points, is they miss two problems they get 6 points, and if they miss all three problems they get 3 points. This encourages the students to attend class.

Group presentations are graded based on what the instructor and the non-presenting students think of the presentation on a 1 – 5 scale. This scale is then modified to provide individual scores based on a group peer evaluation. This portion of the rating system corrects for amount of work (or lack thereof) of the individual group members.

Group papers are graded based on the grading criteria provided in the “Projects” handout (attached).

Notebooks are graded based on the grading criteria provided in the “Notebooks” handout (attached).

Timber Project – CNS 523 Timber Construction, Spring 2015

Topic: Your choice of topic as approved by the instructor related to timber construction

"Example topics" as applied to timber: Green technology, sustainable structures, engineered products, resistance to pests and/or fire, connection types, finishing methods, hybrid steel/wood systems, formwork (timber only), special construction methods, etc.

Two Parts: Presentation – Approximately ten minutes with each group member given a speaking role. A one to two minute question & answer period will follow.

Paper – One group ten page (minimum length) paper with graphics (use 1-1/2 line spacing). The paper is to demonstrate a good understanding of the topic covered. The paper should be in a professional format with references cited at the end.

Participants: Groups of 4 or 5 with the maximum number of groups limited to 8

Dates: January 22, 2015 – Groups size and members selected by instructor

January 29, 2015 – Topics submitted in class or by email to instructor

Note: Only one group may present a given topic (first come, first serve as noted by email). All other groups must select a different topic.

May 5, 2015 – Groups 1 through 4 present

May 7, 2015 – Groups 5 through 8 present

Grading: All members of a group will receive the same grade for the paper, but individual grades will be assigned for the presentation by the instructor, presenting group members & non-presenting students. All papers are due May 5, 2015 at the beginning of class.

Grading Criteria:

Presentation	50 points maximum based on instructor and student reviews
Paper	50 points maximum based on instructor review

All presentations are to be in PowerPoint format. All papers are to be in either Word or PDF format. Presentations will be sent to instructor and will be uploaded by the instructor to K-State online for the students in the class to view and/or download.

Rules for Notebooks – Spring 2015:

General – notebooks are to be presented in a professional manner as if it were to be given to your employer.

Notebooks will have the title on the edge and the front cover

Information to include: CNS 523 Timber or CNS 528 Concrete
Student's Name
Spring 2015

Optional: Artwork

Cover page (in front of TOC, inside notebook)

Table of Contents (TOC):

The following is a suggested format:

Notes divided up into specific subjects

Notes and handouts relating to a particular subject are presented under separate tabs relating to the subject in chronological order (example: tab 1: beams, tab 2: columns, etc.)

Following Notes:

Tab for examples/homework/solutions to homework
Tab for miscellaneous handouts
Tab for quizzes
Tab for exams

Note information covered in the exam in the TOC (i.e. statics, beams, tributary area, etc.).

Points:		
	Notebook cover (both edge and front)	5 points
	Cover Page (similar to notebook cover)	5 points
	Table of Contents	5 points
	Appropriate tabs	5 points
	Completeness (contains notes, handouts, etc.)	15 points
	Overall appearance of notebook (legible, neat)	15 points
	Total	50 points

KANSAS STATE UNIVERSITY | Architectural Engineering and Construction Science

CNS 534 - Heating and Air Conditioning
Spring 2014

Professor: **Tom Logan**
Office: Seaton 232
Office Hours: Posted by door
Email: tdlogan@ksu.edu
Office Phone: (785) 532-3580

COURSE DESCRIPTION:

Principles of designing, applying, and installing heating and air conditioning systems for buildings. 3 credit hours.
Prerequisites: PHYS 113 - General Physics , CNS 321 - Construction Techniques & Detailing.

CLASS MEETING TIME: MWF 9:30 am

ROOM: Seaton 221

STUDENT LEARNING OUTCOMES:

Upon completion of this course one should be able to:

1. Understand basic principles of heat transfer related to human thermal comfort
2. Perform manual and spreadsheet calculations of heating and cooling loads for buildings
3. Perform layout and sizing of basic HVAC air and water systems for small commercial buildings
4. Identify equipment and accessories for HVAC air and water systems for small commercial buildings
5. Understand basic concepts and terminologies for building HVAC air and water systems

EVALUATION:

Grade Scale:

A	100-92%
B	91-84%
C	83-76%
D	76-68%
F	67% and below

Grades will be based on percentage of points possible:

$$\% \text{ grade} = \frac{\text{Points earned}}{\text{Total Points Possible}} \times 100$$

Approximate Evaluation Values:

Homework/Quizzes	300 points
Tests	300 points
Final Project	100 points
Total	700 points

Homework:

Homework will be assigned on a regular basis and collected at the beginning of the class period when due, unless otherwise noted. Late work will not be accepted for credit. The instructor may consider emergencies or other issues on a case-by-case basis. **Points may be deducted from assignments that are not neat and organized.** Assignments are to be completed by individual effort, unless otherwise noted. However, working with others to compare answers or increase understanding is encouraged.

Quizzes / Tests / Final Exam:
Quizzes may be given during any class period.

Tests
There will be 3 subject matter tests during the course of the semester.

Exams
No final exam will be given. However, a final project will be assigned.

Notebook:
Students are required to develop a 3-ring, loose-leaf notebook during the semester for use in class and for future reference. Notebooks shall be tabbed, labeled, and contain all class notes, handouts, and assignments. Notebooks shall be kept updated and current at all times. Notebooks may be reviewed periodically during the semester and shall be turned in with the final project.

Attendance:
Prompt attendance is required in this course, as it will be in a professional office. Attendance points will be added or deducted as follows: Perfect Attendance = +10 pts; Unexcused Late = -5 pts; Unexcused Absent = -10 pts

To be excused for being absent or late, students must receive permission from the instructor on or before the day of the class period in question (students will not be excused after being absent or late 3 times). The instructor may consider emergencies or other issues on a case-by-case basis.

Text / Reference Materials:
No text required. Course materials will be provided as handouts or via download from K-State Online.

Classroom Policy:
The classroom will be managed similar to a professional office setting. Questions, discussion, and team activities are encouraged.

Department Classroom Policy:
1. The classroom is to be regarded as the "class office" and therefore professional behavior is expected at all times. Start now for the expectations of future employers. All cell phone and electronic devices are to be turned off during class. If any of these devices interrupt class, you will be asked to leave for the remainder of the class period and an absence recorded for the class period. A second disruptive occurrence will result in being dropped from the class.
2. No food or drink is permitted in the classroom. Remove hats/caps/hoods. Disruptive items such as newspapers, electronic devices, and cell phones are not allowed.

University Classroom Policy:
All student activities in the University, including this course, are governed by the Student Judicial Conduct Code as outlined in the Student Governing Association By Laws, Article VI, Section 3, number 2. Students who engage in behavior that disrupts the learning environment may be asked to leave the class.

Academic Accommodations for Disabled Students:
Academic Accommodations: Any student with a disability who needs a classroom accommodation, access to technology or other assistance in this course should contact Disability Support Services (202 Holton, 532-6441) and/or the instructor as soon as possible.

Harassment Policy:
It is important that you understand your rights and responsibilities regarding the University's Sexual and Racial Harassment policies. Full text of the policies can be found on KSU's web site at www.ksu.edu/uauc/fhbook/fhxj.html. If you experience any situations, in or out of class, that seem inappropriate or that make you uncomfortable, a list of resources and courses of action to assist you can

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The honor system website can be reached via the following URL: www.ksu.edu/honor. A component vital to the Honor System is the inclusion of the Honor Pledge which applies to all assignments, examinations, or other course work undertaken by students. The Honor Pledge is implied, whether or not it is stated: "On my honor, as a student, I have neither given nor received unauthorized aid on this academic work." A grade of XF can result from a breach of academic honesty. The F indicates failure in the course; the X indicates the reason is an Honor Pledge violation.

Tobacco Use Policy:
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Disclaimer: The instructor reserves the right to modify and/or add to this syllabus as necessary.

Class	Date	Description
1	21-Jan-15	Introduction
2	23-Jan-15	Environmental Comfort
3	26-Jan-15	Heat Transfer
4	28-Jan-15	Refrigeration cycle and HVAC design concerns
5	30-Jan-15	Refrigeration cycle
6	2-Feb-15	IAQ and HVAC design concerns
7	4-Feb-15	Load calc intro
8	6-Feb-15	Heat gain calcs
9	9-Feb-15	Start retail shop-in classroom-Lennox calc
10	11-Feb-15	Exam I review
11	13-Feb-15	Exam I
12	16-Feb-15	Computer room load-computer lab
13	18-Feb-15	Small business-computer lab
14	20-Feb-15	Small business-computer lab
15	23-Feb-15	Classroom/Locker bldg-computer lab
16	25-Feb-15	Classroom/Locker bldg-computer lab
17	27-Feb-15	Classroom/Locker bldg-computer lab
18	2-Mar-15	Sporting goods-computer lab
19	4-Mar-15	Sporting goods-computer lab
20	6-Mar-15	HVAC systems
21	9-Mar-15	HVAC system types and ductwork
22	11-Mar-15	Duct sizing
23	13-Mar-15	Exam II
		Spring break
		Spring break
		Spring break
24	23-Mar-15	Psychrometrics
25	25-Mar-15	Psychrometrics
26	27-Mar-15	Psychrometrics
27	30-Mar-15	HVAC systems
28	1-Apr-15	HVAC system types and ductwork
29	3-Apr-15	Duct sizing
30	6-Apr-15	Duct project-due 4 Nov
31	8-Apr-15	Fans
32	10-Apr-15	Duct demo
33	13-Apr-15	Air accessories and Hydronic systems
34	15-Apr-15	Hydronic components
35	17-Apr-15	Chillers/Boilers/Equipment
36	20-Apr-15	Piping-Hot water example
37	22-Apr-15	Piping-Cold water example
39	24-Apr-15	Hydronics
40	27-Apr-15	Exam III
41	29-Apr-15	Final project
42	1-May-15	Final project
43	4-May-15	Final project
44	6-May-15	Final project
45	7-May-15	Final project

KANSAS STATE UNIVERSITY | Architectural Engineering and Construction Science

CNS 534 – Heating and Air Conditioning

Locker/classroom add'n evaluation_____

Student Name

Points Available & Ratings

Item	Poor	Rating Categories Average	Good	Excellent	Actual Score
Summary sheet:	7.5	8.5	9	10	
Transmission factors:	7.5	8.5	9	10	
Solar:	3.5	4	4.5	5	
Electrical:	3.5	4	4.5	5	
People:	3.5	4	4.5	5	
Equipment:	3.5	4	4.5	5	
Infiltration:	3.5	4	4.5	5	
Ventilation:	3.5	4	4.5	5	
Total:	36	41	45	50	

Notes:

KANSAS STATE UNIVERSITY | Architectural Engineering and Construction Science

CNS 534 – Heating and Air Conditioning

Lakeside bait & tackle evaluation

Student Name

Points Available & Ratings

Item	Rating Categories: Poor	Average	Good	Excellent	Actual Score
Summary sheet:	3.5	4	4.5	5	
Transmission factors:	3.5	4	4.5	5	
Solar:	1.75	2	2.25	2.5	
Electrical:	1.75	2	2.25	2.5	
People:	1.75	2	2.25	2.5	
Equipment:	1.75	2	2.25	2.5	
Infiltration:	1.75	2	2.25	2.5	
Ventilation:	1.75	2	2.25	2.5	
Total:	17.5	20	22.5	25	

Notes:

KANSAS STATE UNIVERSITY | Architectural Engineering and Construction Science

CNS 534 – Heating and Air Conditioning

Small office building evaluation

Student Name

Points Available & Ratings

Item	Poor	Average	Good	Excellent	Actual Score
		Rating Categories			
Summary sheet:	3.5	4	4.5	5	
Transmission factors:	7.5	8.5	9	10	
Solar:	3.5	4	4.5	5	
Electrical:	2.5	3.0	3.5	4	
People:	2.5	3.0	3.5	4	
Equipment:	2.5	3.0	3.5	4	
Infiltration:	2.5	3.0	3.5	4	
Ventilation:	2.5	3.0	3.5	4	
Total:	27	31.5	35.5	40	

Notes:

KANSAS STATE UNIVERSITY | Architectural Engineering and Construction Science

CNS 534 – Heating and Air Conditioning

Final Project Evaluation

Student Name

Required Submittals

_____ Letter of Transmittal
_____ HVAC Plan (Ductwork & Diffusers)
_____ Equipment schedules
_____ Equipment submittals
_____ Duct sizer
_____ ACCA Manual

Points Available & Ratings

	Rating Categories				
Item	Poor	Average	Good	Excellent	Actual Score
Layout/Sizing:	34	38	42	50	
Equip select:	10	11	13	15	
Equip data:	10	11	13	15	
Presentation:	14	15	17	20	
Total:	68	75	85	100	

Notes:

CNS 535, Electrical and Lighting

Spring 2015

Professor: **Russ Murdock, P.E.**
Office: **Seaton 229**
Office Hours: **Posted by office door**
E-mail: **rmurdock@ksu.edu**
Office Phone No.: **785-532-3571**

Course Description

Per Catalog: Study of basic design of building electrical systems including circuit design, lighting design, power distribution and service equipment. Prerequisites: PHYS 114 and CNS 321.

Schedule MWF 11:30 am **Room** Seaton 223A

Student Learning Outcomes

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

- Understand and explain the fundamentals of electricity and electrical terminology.
- Understand the fundamentals of electrical systems design in the context of building design and construction.
- Apply the appropriate electrical system components as necessary for a complete and compliant solution to an electrical design problem.
- Analyze a set of given load criteria with the intent to design and select the appropriate circuit components and electrical distribution equipment.
- Evaluate an electrical design solution to determine the adequacy of the selected components and component ratings and characteristics.
- Interpret a set of electrical construction drawings, understanding the design intent documented and the systems components provided/selected to achieve the desired goal.
- Understand the relationships and responsibilities of the electrical trade contractors with the general construction team, including ethical and performance obligations.

Evaluation

Grading Scale:

A	100-90%
B	89-80%
C	79-70%
D	69-60%
F	59% and below

Approximate Evaluation Values:

Homework, Projects	400 points
Quizzes	100 points
Exams (2)	200 points
Final Exam	200 points
Notebook	50 points
Total	950 points

Grades will be based on percentage of points possible:

$$\% \text{ grade} = \frac{\text{Points earned}}{\text{Total Points Possible}} \times 100$$

Attendance

Prompt attendance is required in this course, as it will be in a professional office. Absences *will not* be tallied in this course, it is your responsibility to be here. As in an office environment, I know who is there every class and who is not. No formal attendance component will be included in your grade, but I reserve the right to take attendance into consideration when determining final grades. If you miss a class, understand it is your responsibility to obtain the notes you missed and/or any assignments from a classmate.

> *To be excused for being absent or late, students must receive permission from the instructor before the class period in question. The instructor may consider emergencies or other issues on a case-by-case basis.*

Social Media

You are encouraged to follow @RussMurdockKSU on twitter to receive reminders about assignments and other course information, as well as any other relevant supplementary information that may augment the content from the lecture. Any tweets identified for this course will be tagged with #KSU_CNS535_S15 to allow you to easily search and find them. You are encouraged to explore the use of programs like TweetDeck to monitor multiple accounts and/or topic searches concurrently. Feedback and suggestions for how to improve the use of social media and/or other collaborative applications are encouraged.

Quizzes / Tests / Final Exam
Quizzes may, and will, be given during any class period. Two exams during the semester and a comprehensive final exam will be given.

Homework
Homework will be assigned on a regular basis and collected at the beginning of the class period when due, unless otherwise noted. Late work will not be accepted for credit. The instructor may consider emergencies or other issues on a case-by-case basis. Points may be deducted from assignments that are not neat and organized. ***Treat each assignment as a professional submission.*** Assignments are to be completed by individual effort, unless otherwise noted. However, working with others to compare answers or increase understanding is encouraged.

Notebook
Students are required to develop a 3-ring, loose-leaf notebook during the semester for use in class and for future reference. Notebooks shall be tabbed, labeled, and contain all class notes, handouts, and assignments. Notebooks will be required for completion of assignments and exams. Refer to attachment for additional requirements.

Text / Reference Materials
Course materials will be provided as handouts or via download from K-State Online.
Required Text – **Ugly's Electrical References – 2014 Edition**

Use of CADD Software
You are encouraged to use AutoCAD or Revit for project submissions as applicable and as your competency with those software packages allows. The use of those software packages is entirely optional and will have no bearing on the grade assigned to each homework assignment/project/lab. As always, you are expected to treat each assignment as a "professional submission", and your final grade for each assignment will be based on that criteria, regardless of technology (or lack thereof) used to produce a particular submission.

Classroom Policy
The classroom will be managed similar to a professional office setting. Questions, discussion, and team activities will be encouraged. Food, drinks, caps/hats, electronic devices (other than calculators), newspapers, or other distracting items will not be permitted. Daily housekeeping will be required.

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Academic Accommodations for Disabled Students
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CNS 535, Electrical & Lighting

Spring 2015 – Course Outline

Part I

- **Terminology and Resources**
  - **Basic Electrical Terms and Metrics**
  - **Alternating Current**
  - **Power Triangles and Concepts**
  - **National Electrical Code/Ugly's Reference**

- **Building Electrical Systems Materials**
  - **Systems Voltages and Phase Arrangements**
  - **System Components and Ratings**
  - **Feeders/Wiring**
    - Conductors
      - Identification (on plan)
      - Materials
      - Ampacities
    - Raceways
      - Materials
      - Applications
      - Sizing
    - Outlet Boxes
    - Pull Boxes
- **EXAM I**

Part II

- **Building Electrical Systems Materials (Continued)**
  - **Power Handling Equipment**
    - Overcurrent Protection
      - Fuses
      - Circuit Breakers
      - Other OCPD's
    - Switchboards/Switchgear
    - Panels/Distribution Panels
    - Transformers
    - Motor Control Centers
    - Accessories
      - Disconnect/Safety Switches
      - Motor Starters/Controllers
  - **Control and Utilization Equipment**
    - Lighting
    - Receptacles
    - Motors
    - Other Equipment

- **Services**
  - **Residential Services**
    - **Voltages**
    - **Arrangements**
  - **Commercial Services**
    - **Voltages**
    - **Arrangements**
  - **Utility Coordination**
  - **Temporary/Job-Site Power/Electrical Start-Up**
  - **Emergency/Stand-by Power Systems**

- **Electrical Safety**
  - **Procedures**
  - **Arc Flash/Blast**
  - **Personal Protective Equipment**

- **EXAM II**

Part III

- **Lighting Basics**
  - **Light and Color**
  - **Source Color Concepts**
  - **Lighting Metrics**

- **Lamp Types and Uses**
  - **Terminology**
  - **Incandescent Sources**
  - **Low Pressure Gaseous Discharge**
  - **High Pressure Gaseous Discharge**
  - **Solid State Lighting**
  - **Other Sources**

- **Luminaire Types and Applications**
  - **Luminaires**
  - **Distribution Classifications**
  - **Photometric Terminology**
  - **Photometric Data/Specification Sheet Examples**

- **Luminaire Procurement**

- **Luminaire Layout and Calculations**
  - **Understanding Average Illuminance**
  - **The Lumen Method**
    - **Terminology**
    - **Factors**
    - **Fixture Quantity**
    - **Fixture Lay-out**

- **Energy Management**
  - **Energy Codes**
  - **Lighting Controls**

- **Lighting Systems/Circuits**
  - **Switching/Controls**
  - **Emergency/Egress Lighting**
  - **Circuiting/Sizing**

- **EXAM III**

Part IV

- **Receptacle Circuits/Lay-out**
  - **Ratings/NEMA Configurations**
  - **Specialty Devices (GFCI/Isolated Ground)**
  - **Required Locations/Circuiting**

- **Motors/Motor Circuits**
  - **Ratings/Classifications**
  - **Circuit Components/Sizing**
    - Overcurrent Protection
    - Motor Starter/Controller
    - Conductors
    - Disconnecting Means
  - **Multiple Motor Circuits**
  - **Specialty Starters/Controllers**

- **Other Mechanical Equipment Circuits**

- **Grounding**
  - **Service Grounding**
    - Grounding Electrode System
    - Grounding Electrode Conductor
  - **Equipment Grounding**
  - **Grounding of Separately Derived Systems**

- **Sizing Feeders and Distribution Equipment**
  - **Feeder/Branch Circuit Calculations**
    - Branch Circuit Sizing Rules
    - Feeder Sizing Rules/Demand Factors
  - **Distribution Equipment Sizing**
    - Panel Schedules
    - Panelboards
    - Distribution Panels/Switchboards/Service Entrance
    - Transformers

- **Checking Adequacy/Rating of Distribution System**
  - **Electrical Space Requirements and Clearances**
  - **Voltage Drop Considerations/Calculations**
  - **Short Circuit Considerations**

- **EXAM IV**

Architectural Engineering & Construction Science
Kansas State University

CNS 536 – Water Supply and Plumbing

Semester SPRING 2015

Chuck Burton, P.E.

Office:	**220 Seaton Hall**
Office Hours:	**See hours posted by office door**
E-mail:	**clb@ksu.edu**
Office Phone No.:	**532-3579**

Course Description

CNS 536 – Principles and practices of plumbing and fire protection systems in buildings including code requirements and estimating. 3 credit hours. Prereqs: CNS 321 – Construction Techniques and Detailing.

Class Meeting **Time/Room** Varies according to Line Schedule

STUDENT LEARNING OUTCOMES

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

1. Understand plumbing systems for various building occupancies.
2. Develop, analyze and lay out sprinkler and standpipe systems for a building.
3. Develop, analyze and lay out individual waste treatment systems for a building.
4. Develop, analyze and lay out roof drainage systems for a building.
5. Develop, analyze and lay out gas systems for a building.
6. Develop, analyze and lay out domestic water systems for a building.

Evaluation

Grade Scale:

A	100-93%
B	92-85%
C	84-77%
D	76-69%
F	68% and below

Grades will be based upon a percentage of total points possible:

$$\% \text{ grade} = \frac{\text{Points earned}}{\text{Total Points Possible}} \times 100$$

Grades will be based approximately on the following:

Homework	+/-200 pts
Quizzes	+/-30 pts
Tests: 3@100 pts	+/-300 pts
Final Exam	+/-120 pts
Notebook	+/-70 pts
Total	+/- 720 pts

Homework

Homework will be assigned on a regular basis and collected at the beginning of the class period when due, unless otherwise noted. Late work will not be accepted for credit. The instructor may consider emergencies or other issues on a case-by-case basis. Points may be deducted from assignments that are not neat and organized. Assignments are to be completed by individual effort, unless otherwise noted. However, working with others to compare answers or increase understanding is encouraged.

Classroom Policy:
The classroom will be managed similar to a professional office setting. Questions, discussion, and team activities will be encouraged. Food, drinks, caps/hats, electronic devices, newspapers, or other distracting items will not be permitted. Daily housekeeping will be required.

All student activities in the University, including this course, are governed by the Student Judicial Conduct Code as outlined in the Student Governing Association By Laws, Article VI, Section 3, number 2. Students who engage in behavior that disrupts the learning environment may be asked to leave the class.

Academic Accommodations for Disabled Students: Academic Accommodations: Any student with a disability who needs a classroom accommodation, access to technology or other assistance in this course should contact Disability Support Services (202 Holton, 532-6441) and/or the instructor as soon as possible.

Harassment Policy:
It is important that you understand your rights and responsibilities regarding the University's Sexual and Racial Harassment policies. Full text of the policies can be found on KSU's web site at www.ksu.edu/uauc/fhbook/fhxj.html. If you experience any situations, in or out of class, that seem inappropriate or that make you uncomfortable, a list of resources and courses of action to assist you can be found on the College of Engineering web site at www. engg.ksu.edu/students/statement-harrasment.htm.

Statement Regarding Academic Honesty
Kansas State University has an Honor System based on personal integrity, which is presumed to be sufficient assurance that, in academic matters, one's work is performed honestly and without unauthorized assistance. Undergraduate and graduate students, by registration, acknowledge the jurisdiction of the Honor System. The policies and procedures of the Honor System apply to all full and part-time students enrolled in undergraduate and graduate courses on-campus, off-campus, and via distance learning.

The honor system website can be reached via the following URL: www.ksu.edu/honor. A component vital to the Honor System is the inclusion of the Honor Pledge which applies to all assignments, examinations, or other course work undertaken by students. The Honor Pledge is implied, whether or not it is stated: "On my honor, as a student, I have neither given nor received unauthorized aid on this academic work." A grade of XF can result from a breach of academic honesty. The F indicates failure in the course; the X indicates the reason is an Honor Pledge violation.

Tobacco Use Policy:
The College of Engineering is designated a tobacco-free workplace and the use of tobacco products, including cigarettes, cigars, and smokeless tobacco, is prohibited in any college building, facility, or vehicle. It is the responsibility of each college member (faculty, staff, or student) to adhere to and enforce the policy, and to inform visitors of this policy. If a student, faculty member or college employee continues to disregard the policy, he/she will be reported to the dean and may lose access privileges.

Copyright Issues:
This syllabus and all course materials carry a copyright. During this course students are prohibited from selling notes to or being paid for taking notes by any person or commercial firm without the express written permission of the professor teaching this course.

Campus Safety:
Kansas State University is committed to providing a safe teaching and learning environment for student and faculty members. In order to enhance your safety in the unlikely case of a campus emergency make sure that you know where and how to quickly exit your classroom and how to follow any emergency directives. To view additional campus emergency information go to the University's main page, www.k-state.edu, and click on the Emergency Information button.

Disclaimer: The instructor reserves the right to modify and/or add to this syllabus as necessary.

Notebook

Students are encouraged to develop a 3-ring, loose-leaf notebook during the semester for use in class and for future reference. Notebooks shall be tabbed, labeled, and contain all class notes, handouts, and assignments.

Text / Reference Materials

Furnished by Instructor in addition to Reference Material in Department Library

COURSE OUTLINE

1. Course Introduction & Building Codes ..... NFPA 13 & 14
2. Use of Fire Codes
3. Fire Protection Methods & Types
4. Water Supply & Facilities
5. Standpipe and Hose Systems
6. Standpipe Layout
7. Sprinkler Systems and Review
8. Sprinkler Systems
9. Sprinkler Systems
10. **QUIZ**

11. Definition & Layout of Site Sewer System
12. State and Local Code Discussion & Start Septic Tank
13. Septic Tanks
14. Septic Tanks - Problem
15. Sand Filters & Treatment Plants

16. Roof Drainage
17. Roof Drainage Design
18. Roof Drainage Design
19. Roof Drainage
20. Site Drainage
21. Site Drainage
22. **QUIZ**

23. Plumbing Fixture Types, Application & Material

24. Plumbing Fixture Types, Application & Material

25. Sanitary Systems Materials and Plumbing Code
26. Principles of Sanitary Drainage
27. Soil Waste and Vent Piping Discussion
28. Soil and Vent Piping Layout & Drawing
29. Soil and Vent Piping Layout & Drawing
30. Soil and Vent Piping Layout & Drawing
31. Soil and Vent Piping Sizing
32. Soil and Vent Piping Sizing
33. Soil and Vent Piping Sizing
34. **QUIZ**

35. Natural Gas Piping and Design
36. Natural Gas Piping and Design

37. Water Piping Material and Systems
38. Water Piping Material and Systems
39. Water Piping Pressure Analysis
40. Water Piping Pressure Analysis
41. Water Pipe Sizing
42. Water Pipe Sizing
43. Hot Water Heaters and Equipment
44. Hot Water Piping and Circulation Piping
45. Individual Water Systems
46. **QUIZ**

KANSAS STATE UNIVERSITY | Architectural Engineering and Construction Science

ARE 537 Acoustic Systems

Spring 2015 ■ 9:30-10:20 AM

Professor: **Allan Goodman**
Office: **Seaton 254-B**
E-mail: **agoodma@ksu.edu**
Office Phone: **(785) 532-3581**
Office Hours: **Posted by office door**

Course Description

Per Catalog: *Hearing and the ear, sound generation, acoustical correction, noise reduction, and sound transmission, all as integral parts of architectural design.*

Student Learning Outcomes

Upon course completion, one should be able to:

1. To understand how sound behaves and how humans perceive sound.
2. To determine the acoustical requirements of buildings.
3. To be able to design and construct building assemblies and system components that control both wanted and unwanted sound.

Evaluation

Course grades will be the total points earned on all exams, quizzes and assignments, divided by the total points possible. The total number of points possible will depend upon the number of assignments and quizzes administered.

Individual exams and final course grades will be based on the following scale:

Grading Scale:		**Evaluation Values:**	
A	93—100.0%	Exams:	400 points
B	86— 92.9	Homework:	30 points ±
C	79— 85.9		430 points ±
D	72— 78.9		
F	0— 71.9		

In addition to the exams listed above, in-class assignments and periodic "pop" quizzes may be given over material covered.

Emergencies: No *"INCOMPLETE"* grades will be given in this course, except in cases involving unforeseen—verifiable—personal, family, or health-related emergencies. Should these emergencies occur and you expect to be away from classes for a period of time, you should contact **Assistant Dean Larry Satzler in the College of Engineering** (785) **532-5592** / e-mail: ***larryv@ksu.edu)***, who will, in turn, notify all course instructors of your specific circumstances.

Attendance

Attendance is mandatory, just as it is in any professional office. If you must miss a class, you are to make arrangements ***in advance*** to make up exams, quizzes, or assignments at another time—or to turn in homework assignments early. Failure to make advance arrangements may make you ineligible to make-up tests or other assignments.

Text / Reference Materials

- 🕮 Packet #1: Text reprint: ***"Environmental Acoustics"*** by Leslie Doelle
- 🕮 Packet #2: Reprints, graphs, & charts from a wide range of sources.

PLEASE NOTE: ***Both of these packets are required for this course.*** They are to be purchased in **Umberger Hall, Room 24, (Distribution)**.and are **not** available at other bookstores or printing centers on- or off-campus.

Classroom Conduct

The classroom is to be regarded as a professional business environment, and as such, common courtesy and civility is necessary to ensure that ALL students have the opportunity to learn without disruptions or distractions. This means, during class sessions the following shall NOT occur: 1) random conversations unrelated to course presentations and activities, 2) cell phone usage, 3) texting (either sending & receiving), 4) reading newspapers and similar publications, 5) surfing the internet, or, 6) openly accessing laptop computers or similar electronic devices for the purpose of checking Facebook, Twitter, or other social network accounts. To sustain this professional environment, all cellphones and other electronic devices are to be silenced during class presentations, and are to placed in backpacks, purses, briefcases, etc., for the duration of the class period. ***Out-of-sight; no exceptions!***

Food, beverage, and tobacco products are not permitted in the classroom. Classrooms are to be kept in order, with all trash, debris, newspapers, etc. disposed of at the end of each class period. Video, audio, digital, or similar recording of lectures is not permitted without prior written permission from the instructor. All student activities in the University, including this course, are governed by the Student Judicial Conduct Code as outlined in the Student Governing Association By Laws, Article VI, Section 3, Number 2. **Students who engage in behavior that disrupts or distracts the learning environment may be asked to leave the classroom,** in accordance with University policy.

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A component vital to the Honor System is the inclusion of the **Honor Pledge** which applies to all assignments, examinations, or other course work undertaken by students. The Honor Pledge is implied, whether or not it is stated: *"On my honor, as a student, I have neither given nor received unauthorized aid on this academic work."* A grade of XF can result from a breach of academic honesty. The F indicates failure in the course; the X indicates the reason is an Honor Pledge violation.

Notice of Copyright for Course Syllabi

Copyright 2015, Allan Goodman, as to this syllabus and all lectures. During this course students are prohibited from selling notes to or being paid for taking notes by any person or commercial firm without the express written permission of the professor teaching this course. Exams used in this course are the property of the Department of Architectural Engineering and Construction Science. Testing, and subsequent review of graded exams, will be confined to the classroom only. ***At no time shall exams, portions of exams, or copies of exams or exam contents, be removed from the classroom, including electronic and/or digital technologies.*** Any infractions will be treated in accordance with University policies on academic integrity.

Academic Accommodations for Students with Disabilities

Students with disabilities who need classroom accommodations, access to technology, or information about emergency building/campus evacuation processes should contact the Student Access Center and/or their instructor.

Services are available to students with a wide range of disabilities including, but not limited to, physical disabilities, medical conditions, learning disabilities, attention deficit disorder, depression, and anxiety. If you are a student enrolled in campus/online courses through the Manhattan or Olathe campuses, contact the Student Access Center at accesscenter@k-state.edu, 785-532-6441; for Salina campus, contact the Academic and Career Advising Center at acac@k-stgate.edu, 785-826-2649.

Campus Safety

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Tobacco Use

The College of Engineering is designated a tobacco-free workplace and the use of tobacco products, including cigarettes, cigars, and smokeless tobacco, is prohibited in any college building, facility, or vehicle. It is the responsibility of each college member (faculty, staff, or student) to adhere to and enforce the policy, and to inform visitors of this policy. If a student, faculty member, or college employee continues to disregard the policy, he/she will be reported to the Dean and may lose access privileges.

Sexual Harrassment

One purpose of your education is to help you develop skills, approaches, and abilities that are necessary for effective teamwork, and for your success in your profession and as a citizen. It is important that you understand your rights and responsibilities regarding the University's Sexual and Racial Harassment policies. If you experience any situation, in or out of class, that seem inappropriate, or makes you uncomfortable, a list of resources and courses of action to assist you can be found on the KSU web site: ***www.ksuedu/uauc/fhbook/fhxj.html***, or the College of Engineering web site: ***www.engg.ksu.edu/students/statement-harassment.htm.***

Disclaimer

The instructor reserves the right to modify or add items to this syllabus at his discretion.

Readings

DAY	DATE		LECTURE TOPIC	RELATED TEXT ASSIGNMENT	RELATED HANDOUTS
1.	Tuesday	20 Jan	**Course Introduction**		
2.	Thursday	22 Jan	**The Nature of Sound**	3 thru 6; 12 thru 20	**A11, A23**
3.	Tuesday	27 Jan	**The Decibel**	137 thru 143	**A14** thru **A18**
4.	Thursday	29 Jan	**Sound Intensity & the Inverse-Square Law** *(Construction Noise / Site Planning*)	147 (*13.6.2*) thru 152 (*13.6.3*); 185 (*15*.1)	**A1** thru **A8; A12, A13**, **A19, A20, A29, A30**
5.	Tuesday	3 Feb	**Natural Amplification & Sound Rays** – Part 1	7 thru 11; 23; 25 & 26 (*4.3 & 4.4*); 29 (*4.6*); 48 thru 55; 58 thru 61	**A9, A10, A21, A22, A28, A29**

DAY	DATE		LECTURE TOPIC	RELATED TEXT ASSIGNMENT	RELATED HANDOUTS

6	Thursday	5 Feb	**Natural Amplification & Sound Rays** – Part 2		
7.	**Tuesday**	**10 Feb**	**.....**	**EXAM #1**	**.....**
8.	Thursday	12 Feb	***Review Exam #1;*** **Sound Absorption**– Part 1	23 thru 25 (*4.2*); 227	**B1** thru **B3**
9.	Tuesday	17 Feb	**Sound Absorption** – Part 2		
10.	Thursday	19 Feb	**Absorption & Noise Reduction Coefficients**	30 thru 47	**B4** thru **B8; B18** thru **B20**
11.	Tuesday	24 Feb	**Noise Reduction & Reverberation Time**	26 thru 28; 55 thru 57 (*6.4*); 62 thru 82; 83 thru 102; 115 thru 121; 129 thru 133; 221 thru 224	**B7, B9, B10, B13, B17**
12.	Thursday	26 Feb	**Noise Reduction**	156 thru 160 (*13.6.8* thru *13.6.10*)	**B11, B12 B14**
13.	Tuesday	3 Mar	**Sound-Amplification Systems** – Part 1	103 thru 114; 122 thru 128	**B15, B16, B21**
14.	Thursday	5 Mar	**Sound-Amplification Systems** – Part 2		
15.	**Tuesday**	**10 Mar**	**.....**	**EXAM #2**	**.....**
16.	Thursday	12 Mar	***Review Exam #2;*** **Sound Insulation** – Part 1	144 (*13.4*) thru 147 (*13.6.1*); 161 & 162 (*14.1.1 & 14.1.2*)	**C1** thru **C5; C19, C26, C37**
✸ ✸ ✸ ✸ ✸ ✸ ✸ ✸			***SPRING BREAK*** *(March 16—20)*		✸ ✸ ✸ ✸ ✸ ✸ ✸
17.	Tuesday	24 Mar	**Sound Insulation** – Part 2		
18.	Thursday	26 Mar	**Sound Transmission Class (STC) & Impact Insulation Class (IIC)** Part 1	165 (*14.1.6*) thru 166; 167 (*14.2*) thru 170 (*14.3*); 219 & 220; 228 thru 243	**C6** thru **C8**; **C20, C36, C38**
19.	Tuesday	31 Apr	**Sound Transmission Class & Impact Insulation Class** – Part 2		
20.	Thursday	2 Apr	**Sound Isolation:** **Complex & Double Walls**	162 (*14.1.3*) thru 164 (*14.1.5*)	**C9, C10, C21** thru **C24; C27** thru **C35**

DAY	DATE	LECTURE TOPIC	RELATED TEXT ASSIGNMENT	RELATED HANDOUTS

21.	Tuesday	7 Apr	**<u>Sound Isolation:</u> Sound Leaks & Construction Methods**	155 (*13.6.6*), 156 (*13.6.7*); 170 (*14.4*) thru 184	**C11** thru **C18; C25**
22.	**Thursday**	**9 Apr**	**…… <u>EXAM #3</u> ……**		
23.	Tuesday	14 Apr	***Review Exam #3;*** **Background Noise Criteria** – Part 1	152 (*13.6.4*) thru 155 (*13.6.5*); 166 & 167 (14.1.7); 185 (15.2) thru 188	**D1** thru **D6; D27, D28, D39**
24.	Thursday	16 Apr	**Background Noise Criteria** – Part 2		
25.	Tuesday	21 Apr	**Open Office Planning** – Part 1	197 thru 215	**D7** thru **D10; D24, D25, D40, D47**
26.	Thursday	23 Apr	**Open Office Planning** – Part 2		
27.	Tuesday	28 Apr	**Equipment Noise Control**	189 thru 196 Part 1	**D11** thru **D23; D26, D29** thru **D38; D41** thru **D46; D48** thru **D57**
28.	Thursday	30 May	**Equipment Noise Control** – Part 2		
29.	Tuesday	5 May	**Equipment Noise Control** – Part 3		
30.	Thursday	7 May	**Acoustical Analysis & Design ■ Course Recap**		

■ **Monday** **11 May** **2:00 — 3:50 P.M. ……. <u>FINAL EXAM</u> ……**

Spring Semester 2015

	S	M	T	W	T	F	S	
		MLK Day	Classes Begin					
January	18	***19***	***20***	21	22	23	24	
	25	26	27	28	29	30	31	
February	1	2	3	4	5	6	7	
	8	9	**10**	11	12	13	14	
	15	16	17	18	19	20	21	
	22	23	24	25	26	27	28	
March	1	2	3	4	5	6	7	
	8	9	**10**	11	12	13	14	
			Spring Break					
	15	***16***	***17***	***18***	***19***	***20***	21	
	22	23	24	25	26	27	28	
April	29	30	31	1	2	3	4	
	5	6	7	8	**9**	10	***11***	KSU Open House
	12	13	14	15	16	17	18	
	19	20	21	22	23	24	25	
May	26	27	28	29	30	1	2	
	3	4	5	6	7	8	9	
	10	***11***	***12***	***13***	***14***	***15***	16	
			Finals					

TOPICAL OUTLINE

1. Course Introduction
2. The Nature of Sound

3. The Decibel
4. Sound Intensity & the Inverse-Square Law
5. Natural Amplification & Sound Rays
6. Sound Absorption
7. Absorption & Noise Reduction Coefficients
8. Noise Reduction & Reverberation Time
9. Sound-Amplification Systems
10. Sound Insulation
11. Sound Transmission class (STC) & Impact Insulation class (IIC)
12. Sound Isolation: Complex & Double Walls
13. Sound Isolation: Sound leaks & Construction Methods
14. Background Noise Criteria
15. Open Office Planning
16. Equipment Noise Control
17. Acoustical Analysis & Design

KANSAS STATE UNIVERSITY | Architectural Engineering and Construction Science

CNS 540 – Construction Methods & Equipment
Spring 2015

Instructor: Ray Buyle
Office: 247 Seaton
Office Hours: Posted outside office door
E-mail: rbuyle@ksu.edu
Office Phone No.: 532-3577

Course Description

Per Course Catalog: Operations, costs, productivity of construction equipment. Investments/life cycle costing of the equipment. Equipment selection criteria and analysis. Construction methods.
Prerequisites: CNS 321 – Construction Techniques & Detailing, and CNS 330 - Site Construction. Prerequisite or Concurrent: CNS 522 - Theory of Structures.

Class Schedule:

M-W-F 10:30-11:20 am Seaton 221

Student Learning Outcomes

Upon completion of this course, students should demonstrate the following proficiencies:

1. understand the principles of the construction process to include materials, tools, equipment, work methods.
2. understand production considerations related to the major features of the construction site, building assemblies and systems, and construction equipment.
3. analyze and apply the extensive technical terminology used in construction, the development of the site and building system, the properties of major materials, the possibilities and limitations of building methods, and the basis for choosing among systems, equipment, methods, and material.
4. evaluate practical construction methods and equipment related to various phases of the construction process likely to be encountered in a construction career.

Evaluation

Grade Scale:

A	100-93%
B	92-85%
C	84-78%
D	77-70%
F	69% and below

Grades will be based on percentage of points possible:

$$\% \text{ grade} = \frac{\text{Points earned}}{\text{Total Points Possible}} \times 100$$

Approximate Evaluation Values:

Problems/Assignments	158 points
Exams/Quizzes	684 points
Notebook	50 points
Total	892 points

Homework:

Homework will be assigned on a regular basis and collected at the beginning of the class period when due, unless otherwise noted. Late work will not be accepted for credit. The instructor may consider emergencies or other issues on a case-by-case basis. Points may be deducted from assignments that are not neat and organized. Assignments are to be completed by individual effort, unless otherwise noted. However, working with others to compare answers or increase understanding is encouraged.

Exams/Quizzes/Final Exam:

There will be a minimum of four (4) exams administered during the semester to test your comprehension, knowledge, and understanding of the subject matter presented. Short quizzes may be administered periodically to monitor your preparation for class.

Projects

N/A

Notebook:

All students are required to maintain a course notebook consisting of class notes, handouts, assignments, etc. The primary purpose of the notebook is to reinforce the planning, organization, and the professional presentation of material that will be required of you as you enter the construction/engineering industry and to facilitate the use of the course material as a future reference. In addition, the various materials provided will be referred to throughout the semester. The notebook is to be a 3-ring binder, neat and organized and include the following:

- A front cover label that includes your name, the course number ("CNS540") and title ("Construction Methods & Equipment", the semester and year (Spring 2015), and the instructor's name ("Asst. Professor Ray Buyle - Instructor")
- A spine label that lists the course number and name, semester and year.
- A detailed Table of Contents that is thorough and well organized
- Printed labeled tabs that correspond to your table of contents

The notebook will be reviewed and graded by the instructor at the end of the semester for organization, completeness and neatness. Appropriate credit will be given based on your professional efforts. (50 pts)

Attendance:

1. Attendance is mandatory and expected:
   a. Each student is responsible for all information introduced in class.
   b. Excused absences are to be requested and approved prior to the beginning of the class period that will be missed. Approved absences are at the discretion of the instructor and will be considered on a case-by-case basis.
   c. If an absence is due to illness, a doctor's note is required in order for the absence to be excused.
   d. Missing/leaving class for internship/job interviews is not acceptable and will not be counted as an excused absence. Schedule your interviews outside of class time (Dept. policy).
   e. Each unexcused absence will result in a **2.5%** reduction from the total points earned for the semester (this includes absences caused by cell phone disruptions and tardiness). You will be allowed **one** discretionary unexcused absence for the semester before points are deducted.
   f. Leaving class early without prior consent of the instructor is considered an unexcused absence.
2. Tardiness will not be tolerated and is treated the same as an unexcused absence in terms of the deduction from your final grade.

Textbook / Required Materials

Construction Planning, Equipment, and Methods, By Robert L. Peurifoy, 8th Edition. *(Required)*
Additional selected readings from other sources may be provided and/or assigned.

Classroom Policy:

Refer to **Department Classroom Policy** below.

Department Classroom Policy:

1. The classroom is to be regarded as the "class office" and therefore professional behavior is expected at all times. Start preparing now for the expectations of future employers. **All cell phones and electronic devices are to be turned off during class**. If any of these devices interrupt class, then you will be asked to leave for the remainder of the class period. This will be indicated as an absence for the class period. A second disruptive occurrence results in dropping the class. (Department Policy)

2. No food or drink is permitted in the classroom. Also no hats/caps, newspapers, electronic devices or other distracting items will be allowed.

University and College of Engineering Policies:

1. **Statement Regarding Academic Honesty**

Kansas State University has an Honor System based on personal integrity, which is presumed to be sufficient assurance that, in academic matters, one's work is performed honestly and without unauthorized assistance. Undergraduate and graduate students, by registration, acknowledge the jurisdiction of the Honor System. The policies and procedures of the Honor System apply to all full and part-time students enrolled in undergraduate and graduate courses on-campus, off-campus, and via distance learning. The honor system website can be reached via the following URL: www.k-state.edu/honor. A component vital to the Honor System is the inclusion of the Honor Pledge which applies to all assignments, examinations, or other course work undertaken by students. The Honor Pledge is implied, whether or not it is stated: "On my honor, as a student, I have neither given nor received unauthorized aid on this academic work." A grade of XF can result from a breach of academic honesty. The F indicates failure in the course; the X indicates the reason is an Honor Pledge violation.

2. **Statement Regarding Students with Disabilities**

Students with disabilities who need classroom accommodations, access to technology, or information about emergency building/campus evacuation processes should contact the Student Access Center and/or their instructor. Services are available to students with a wide range of disabilities including, but not limited to, physical disabilities, medical conditions, learning disabilities, attention deficit disorder, depression, and anxiety. If you are a student enrolled in campus/online courses through the Manhattan or Olathe campuses, contact the Student Access Center at accesscenter@k-state.edu, 785-532-6441; for Salina campus, contact the Academic and Career Advising Center at acac@k-state.edu, 785-826-2649.

Additional Information for Faculty:

Faculty members who need assistance with accommodating a student with a documented disability should contact the access services office on the appropriate campus. Assistance may include administration of course exams with extended time and/or distraction reduced environment or providing an alternate format of text materials.

3. **Statement Defining Expectations for Classroom Conduct**

All student activities in the University, including this course, are governed by the Student Judicial Conduct Code as outlined in the Student Governing Association By Laws, Article V, Section 3, number 2. Students who engage in behavior that disrupts the learning environment may be asked to leave the class.

http://www.k-state.edu/provost/resources/teaching/course.html

Attachments:

Outline of Course Topics
CNS/ARE Course Outcomes Map

Construction Methods & Equipment
CNS 540 Spring 2015

Professor: **Ray Buyle** Office: Seaton 247
Office Phone: (785) 532-3577 Office Hours: Posted on office door
Email: rbuyle@ksu.edu

Semester Schedule
(subject to change at instructor's discretion)

UNIT 1	8th Edition CPE&M
Topic	
1. Introduction The Construction Process Types/Categories of Construction Estimate, risk, contracts, planning, scheduling, jobsite, resources, production, cost, profit, etc.	Chap 1-Machines Make it Possible
2. Equipment Cost Ownership Costs/Operating Costs/Depreciation Acct Soil Borings & Tests Compaction & Soil Stabilization	Chap 2- Equipment Economics Chap 3-Planning for Earthwork Construction Chap 4- Soil and Rock Chap 5- Compaction and Stabilization
Compaction & Soil Stabilization	

EXAM #1

UNIT 2	
Topic	
4. Equipment Selection & Performance Characteristics Machine Power Fundamentals Dozers & Attachments Scrapers Excavators, Draglines & Clamshells Graders Trucks & hauling units	Chap 6- Mobile Equipment Power Requirements Chap 7-Dozers Chap 8-Scrapers Chap 9-Excavators Chap 10-Trucks & Hauling Equipment Chap 11 Finishing Equipment

EXAM #2

UNIT 3	
Topic	
5. Equipment Selection & Performance Characteristics Cranes	Chap 17 Cranes
6. Pneumatic Tools and Dewatering Pumps Air compressor equipment Pumping Equipment Pump Classification Wellpoint Systems	Chap 19 Air Compressors and Pumps

EXAM #3

CNS 540 CONSTRUCTION METHODS & EQUIPMENT

Semester Schedule (continued)

UNIT 4

Topic

7. Concrete
    - Production of Crushed Stone
    - Compressed Air Equipment
    - Drilling & Blasting Rock & Earth

Introduction to Cast-in-Place Structural Concrete
- Proportioning Concrete Mixtures
- Handling and Batching
- Moving and Placing
- Consolidating, Finishing and Curing
- Quality Testing - Slump/Compression/W:C Ratio/Air
- Precast/Prestressed/Post Tensioning

8. Formwork
    - Materials
    - Form work design, sizing, and bracing

Forming Footings/Walls
Elevated forming systems for Columns/Beams
& Girders/Floors &Metal Decking
- Formwork shop drawings

9. Reinforcement
    - Materials (Grades) (ACI code)
        - Reinforcing Bars/WWF
        - Accessories
        - Design/ Placement/Inspection
    - Shop Drawings (bends, laps, spacing, chairs, etc.)

EXAM #4

(Final)

Chap 12 Drilling Rock & Earth
Chap 13 Blasting Rock
Chap 14 Aggregate Production

Chap 16-Concrete and Concrete Equipment

Chap 21- Forming Systems

Handouts

CPE&M = Construction Planning, Equipment & Methods by Peurifoy (Text required for CNS 540 Construction Methods)

Project # CNS 540 Construction Methods & Equipment Not

			Cover/Spline Label	Table of Contents	Labeled Tabs	Organization	Completeness	Neatness	Total
			4	4	3	9	15	15	50
1	**Alvarado**	**Angel**							0
2	**An**	**Jia**							0
3	**Azeltine**	**Levi**							0
4	**Buchanan**	**Brenden**							0
5	**Depew**	**Corbin**							0
6	**Elliott**	**Hunter**							0
7	**Falk**	**Henry**							0
8	**Flowers**	**Ben**							0
9	**Frazier**	**Jake**							0
10	**Griffin**	**Mark**							0
11	**Harrell**	**Chris**							0
12	**Heinen**	**Jordan**							0
13	**Henry**	**Ross**							0
14	**Krampe**	**Emily**							0
15	**Lohmann**	**Joseph**							0
16	**Martin**	**Scott**							0
17	**Mayer**	**Kyle**							0
18	**Oseguera**	**Salvador**							0
19	**Peters**	**Cane**							0
20	**Reed**	**Jonathan**							0

KANSAS STATE UNIVERSITY | Architectural Engineering and Construction Science

Professional Standards for Design and Construction
CNS 542 Spring 2015

Instructor: **Tom Logan** Office: Seaton 232
Office Phone: (785) 532-3580 Office Hours: Posted by door
Email: tdlogan@ksu.edu

COURSE DESCRIPTION:

An application of the concepts of ethics as applied to the professional standards of the design and construction industry.

A student's position on or approach to an ethical question will not be graded or judged. The student's participation in discussions, thorough examination of issues, recognition of implications of issues, and documentation of his or her efforts will form the basis of the final grade.

CLASS MEETING TIME:
TU 1:30 – 2:20

ROOM:
237 Seaton Hall

STUDENT LEARNING OUTCOMES:

Upon completion of this course, the student should demonstrate the following proficiencies:

1. Exhibit understanding of consequences of ethical misconduct relative to project safety.
2. Apply basic moral philosophy concepts to current construction industry issues.
3. Examine various effects of ethical behavior on one's career and conduct of business.
4. Defend in written and oral format relevant points of an ethics case study, examining various possible outcomes and supporting the final position.

EVALUATION:

Grade Scale:

93 to 100 = A
85 to 92 = B
78 to 84 = C
70 to 77 = D
0 to 69 = F

Grades will be based upon a percentage of total points possible:

$$\%grade = \frac{\text{Points Earned}}{\text{Total Points Possible}} \times 100$$

Evaluation Values:

Participation and attendance	15%
Case studies	85%

Course requirements:

Students are required to attend class, participate in class discussions, and keep a notebook with case study entries and handouts. Case study assignments will be due at the beginning of each class.

Notebook:
Notebooks are required for this course and will be collected for review periodically and at the end of the semester. Professional quality presentation will be expected. See page 9 in the student materials for a description of the required content.

All notebooks must include a cover page on the outside of the notebook, a binder label, and a "Table of Contents" with matching labeled tab dividers for case study entries. The notebook will be graded on completeness, ease of reference and neatness.

Late Work:
All work is due at the time, date and location specified. Late work will be reviewed, but will receive a grade of **ZERO (0)**. **"Late"** is defined as work turned in after the start of class on the due date. Real emergencies, as determined at the sole discretion of the instructor, that delay submission of an assignment may be considered on an individual basis.

TEXT/REFERENCE MATERIALS:

CNS 542 Professional Standards for Design and Construction Student Manual
The Right Thing to Do, 5th edition, Rachels, ISBN 978-0-07-340740-1
The Elements of Moral Philosophy, 6th edition, Rachels, ISBN 978-0-07-338671-3
Engineering Ethics, 4th edition, Martin and Schinzinger, ISBN 0-07-283115-4

The reference manual can be purchased from the Duplicating Center in Room 16 Umberger Hall. It should be in hand by the second class period.

The books are on reserve at Fiedler Library, or may be purchased.

CLASSROOM POLICIES:

The classroom is to be regarded as a "class office". Therefore, professional behavior is expected at all times.

Attendance:
Attendance is expected for all class periods. You will be allowed to miss a ***maximum*** of one (1) class period for illness, interview trips, etc. without counting against your grade. Any additional absences will reduce your grade by one grade for each additional occurrence.

If you must miss a class session, please notify the instructor. It is your responsibility to obtain the course handouts, notes, and problem assignments. If you do not make arrangements ahead of time, don't request them from the instructor.

Tardiness will not be tolerated. **After two (2) occurrences you will be dropped from the course**.

Department Classroom Policy:
The classroom is to be regarded as a professional business environment. Therefore professional behavior is expected at all times. Start preparing now for the expectations of future employers. **All cell phones, PDA's, iPods, etc. are to be silenced or turned off during class.** If any of these devices interrupt class, then you may be asked to leave for the remainder of the class period. This will be indicated as an absence for the class period. A second disruptive occurrence may result in being dropped from the class.

Food, beverage and tobacco products are not permitted in the classroom. Keep the classroom clean by properly disposing of all trash, newspapers, etc. at the end of class.

Kansas State University and College of Engineering Policies

Statement Regarding Academic Honesty:
Kansas State University has an Honor System based on personal integrity, which is presumed to be sufficient assurance in academic matters one's work is performed honestly and without unauthorized assistance. Undergraduate and graduate students, by registration, acknowledge the jurisdiction of the Honor System. The policies and procedures of the Honor System apply to all full and part-time students enrolled in undergraduate and graduate courses on-campus, off-campus, and via distance learning. The honor system website can be reach via the following URL: *www.ksu.edu/honor* .

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Statements for Academic Accommodations for Students with Disabilities:
Any student with a disability who needs an accommodation or other assistance in this course must notify the instructor of the documented disability by the end of the third class period. The Disability Support Services (DSS) office on our campus is available for assistance and is located in Holton Hall 202. The Director, Andrea Blair, can be contacted at 532-6441.

Statement for Copyright Notification:
This syllabus and all lectures, notes and supplemental materials are considered copyright protected. During this course students are prohibited from selling notes to or being paid for taking notes by any person or commercial firm without the express written permission of the professor teaching this course.

Harassment Policy:
I believe that engineers must not only be the people who know how to do things right, but also those who know the right things to do. (Quote by Dr. Joseph Bordogna, National Science Foundation) One purpose of your education is to help you develop skills, approaches, and abilities that are necessary for effective teamwork, and for your success in your profession and as a citizen. It is important that you understand your rights and responsibilities regarding the University's Sexual and Racial Harassment policies. (Full text of the policies can be found on KSU's web site at ***www.ksu.edu/uauc/fhbook/fhxj.html.*** If you experience any situations, in or out of class, that seem inappropriate or that make you uncomfortable, a list of resources and courses of action to assist you can be found on the College of Engineering web site at ***www.engg.ksu.edu/students/statement-harrassment.htm***.

Tobacco Use Policy:
The College of Engineering is designated a tobacco-free workplace and the use of tobacco products, including cigarettes, cigars, and smokeless tobacco, is prohibited in any college building, facility, or vehicle. It is the responsibility of each college member (faculty, staff, or student) to adhere to and enforce the policy, and to inform visitors of this policy. If a student, faculty member or college employee continues to disregard the policy, he/she may lose access privileges.

Statement Defining Expectations for Classroom Conduct:
All student activities in the University, including this course, are governed by the Student Judicial Conduct Code as outlined in the Student Government Association By Laws, Article VI, Section 3, number 2. Students that engage in behavior that disrupts the learning environment may be asked to leave the class.

Syllabus Campus Safety Statement 08-14-08:
Kansas State University is committed to providing a safe teaching and learning environment for student and faculty members. In order to enhance your safety in the unlikely case of a campus emergency make sure that you know where and how to quickly exit your classroom and how to follow any emergency directives. To view additional campus emergency information go to the University's main page, *www.k-state.edu*, and click on the **Emergency Information** button.

Class #	Date	Case	Outside case	*Elements of Moral Philosophy*	*Ethics in engineering*	Other
1	20-Jan		Being ethical in an unethical industry- **read**			Introduction, course expectations, define ethics, AGC video, **read** first 14 pages of reference manual, **take pre-test**
2	22-Jan	1,2	New York crane collapse-**read and answer questions**	**Read** Preface, Chapts 1, 2,3, 4	#1-Chapt 1.1-1.2, Ques 1, pg 20; Chapt 2.1, case 1, pg 38	*Right thing to do* - **read** Chapt 1, 2
3	27-Jan	3,4 omit s. q. 3-3	Louis Berger whistle blower-**read and answer questions**	**Read** Chapt 5	#2-Chapt 6.4, ques 2, pg 179; Chapt 3.1, ques 3, pg 59	*Right thing to do* - **read** Chapt 6& 8; ***Draw for presentations***
4	29-Jan	5,6 omit s. q. 5-2		**Read** Chapt 6; review Chapt 1-5	Chapt 1.3; Chapt 2.3	**Code of ethics** discussion; Clough - Hobbs act; [Dewey - Theory of moral life; Ladd - Morality in Organizations]-read and answer questions
5	3-Feb	7,8 omit s. q. 7-4, 8-1		**Read** Chapt 9,10	#3-Chapt 6.1, 6.2; ques 5, pg 163	*Right thing to do* - **read** chapt 7; [Ladd - Morality in Organizations]-read and answer questions; Ethics video; **Start student presentations**
6	5-Feb	10	Construction ethics - **read and answer questions** Bursting pipes-**read and answer questions**	**Read** Review chapt 6-10		*Right thing to do* - review Chapt 3,7; Clough - Drug free workplace act
7	10-Feb	11, 12	Tishman embezzler-**read**			
8	12-Feb	13, 14	Signature mystery-**read**			FMI Industry ethics survey- **read and answer questions**
9	17-Feb	15, 16 omit s. q. 15-2	Guanxi & corporate security-**read and answer questions**, KBR - **read and answer questions**	Review Chapt 6		Clough - bid shopping; Hinz - bid shopping
10	19-Feb	17, 18 Omit s. q. 17-1	New York testing-**read and answer questions**	**Read** Chapt 13.1; Review Chapt 6		
11	24-Feb	19, 20 omit s. q. 19-2	Tulsa halts 49 projects-**read and answer questions**	**Read** Chapt 13.5	#4-Chapt 7.1, ques 1, 6, pg 194-195	Review Clough/Hinz - bid shopping
12	26-Feb	21, 22	Seattle steel-**read and answer questions**	**Read** Chapt 13.2	Review Chapt 6.2.5, 6.2.6	
13	3-Mar	23,24	Ethics matters-**read and answer questions**, Passing grades-**read and answer questions**	**Re-read** 13.1, 13.5		*Right thing to do* - **re-read chapt 7**, case 2, pg 63
14	5-Mar	25	SF Bay Bridge-**read and answer questions,** Organizational honesty-**read and answer questions, Blagojevich - read and answer questions**			**Code of ethics due**, submit notebooks, Course evaluation

KANSAS STATE UNIVERSITY | Architectural Engineering and Construction Science

CNS 641- CONSTRUCTION ESTIMATING

SPRING 2015

Instructor(s): Shannon Casebeer
Office: 254A Seaton Hall
Office Hours: Please see hours posted by office door.
E-mail: scasebeer@k-state.edu
Phone: 532-3573

Course Description per Course Catalog:

Understanding estimating procedures, quantity surveying, specification reviews, pricing of an estimate, market analysis, subcontractor and supplier solicitation, and risk management, following the CSI formats.

Course Prerequisites:

- Construction Documents
- Construction Methods and Equipment
- Admittance to CNS Professional Program

Class Schedule:

Morning Section meets M W F, time 8:30am - 11:20am	Seaton 254I
Afternoon Section meets M W F, time 2:30pm - 5:20pm	Seaton 254I

Student Learning Outcomes (SLO):

Upon Completion of this Course, the student shall demonstrate the following proficiencies:

1. **Detailed Review of Bid Documents** - analyze Bid Documents (general/supplemental conditions, specifications and construction drawings) to comprehend the entirety of a given project, the construction materials to be utilized, the construction methods/logistics needed, the system assemblies to be constructed and to interpret the associated scopes of work that will be required to construct the project as defined by the CSI format.
2. **Quantity Survey Data (quantity take-off)** - create and tabulate organized, detailed quantity survey data for the various materials, processes, system assemblies and scopes of work for a given project through technical analysis of Bid Documents.
3. **Pricing of Self-Performed Work** - transfer takeoff quantities into Estimate Sheets to establish material and labor pricing for both self-performed scopes of work as well as placeholder-pricing for subcontractor-performed scopes of work. This includes utilizing multiple resources for obtaining pricing information such as R.S. Means Construction Cost Data reference manuals, industry/market resources, the internet, and internal company historical cost data when available.
4. **Scoping Subcontractor & Supplier Bids** - assess industry/market Subcontractor and Supplier bids to evaluate these proposals to interpret the quoted scope of work versus the required scope, to recognize any risk factors associated with a given proposal and to appraise proposal pricing against competitor proposals while ethically protecting/utilizing the bids received.
5. **Tabulate Base Bids & Alternate Bids** - tabulate all direct cost pricing of all the individual scopes of work in an Estimate Summary Sheet and the indirect costs, add-ons and mark-ups as required to reach a total estimated base bid and totals for any alternate bids that have been specified.
6. **Using a Computer and Software to Estimate** – utilize Microsoft Excel to organize, calculate and tabulate estimate quantities and pricing.

Evaluation (Grading Scale):

A	100-94%
B	93-85%
C	84-77%
D	77-70%
F	69% and below

Grades will be based upon a percentage of total points possible:

$$\%\ \text{grade} = \frac{\text{Points earned}}{\text{Total Points Possible}} \times 100$$

Approximate Evaluation Values**:

Attendance & Daily Performance/Participation	32%	800
Assignments	20%	500
Resume	2%	50
Exams	8%	200
Bid Day	20%	500
Final Exam	10%	250
Notebook	8%	200
Total Possible	100%	2500

*** Note – course content and points values may be changed or adjusted at Instructor's discretion during the semester.*

Homework:

Homework Assignments will consist of quantity surveying (takeoff), review of the bid documents (plans and specifications) and determination of pricing for a specific building project…essentially creating our estimate and getting ready for our final project, a mock Bid Day. Unless specific permission or instruction is given by the Instructor that students may work together, all assignments are to be completed by individual effort. Partway through the semester you will be assigned to a bid team and then you will work with your teammates from that point up to and through our mock Bid Day.

Quizzes:

Quizzes will be given periodically at Instructor's option. Quizzes are to be completed individually.

Projects (Mock Bid Day):

- Date will be during the last week of classes and announced in class. Bid Day runs from 1:00 pm to 5:00 pm.
- Bid Day is earned by the class and is not a right! (we will do this only if Teams are ready)
- Morning Class Students will need to clear their afternoon schedule on that day for our Bid Day.
- **All bid day forms / bids / materials are the property of the department – at no time will they leave the classroom.**

Exams:

- Exam #1- Self-perform concrete takeoff, date to be announced
- Exam #2- (if time permits), subject matter and date to be announced
  Final Exam- Demonstration of your understanding of the bid process, this will be scheduled during the university designated final exam period. See ISIS for final exam date and time. Instructor will also announce and remind students as the end of the semester approaches.
- All exams are to be completed individually.
- **All exams are the property of the department – at no time will they leave the classroom.**

Notebook:

Students are required to develop a 3-ring, loose-leaf notebook during the semester for use in class and for future reference. Notebooks shall be organized, tabbed, labeled (front cover and spine), and contain a Table of Contents for all class notes, handouts, and assignments. Notebooks will be collected for review and are a component of your class grade. Notebooks are to be completed individually.

Attendance & Participation:

Attending this class, participating in discussions and working on assignments during class time is required and is a significant component of your grade. Punctual attendance will also be required in this course, as it will be in a professional office after you graduate. Don't be tardy for this class. Attendance/Participation points will be earned or lost as follows:

- In class on time, with good performance and participation = full points that day
- Excused Absence = 0 points for that day because you're not in class participating/working.
- Tardy = half points for that day provided you show up and work the rest of the class period.

- Unexcused Absence = negative points for that day. Whatever participation points you would have normally earned will actually be DEDUCTED from your grade. Don't let this happen.

If you have a **legitimate** reason to miss class, I fully expect you to show me the respect and courtesy you would show to your future employer by letting me know well in advance of your planned absence. If you miss a class, it is your responsibility to see me for any missed lecture notes, assignments etc. and to submit any required work by the established deadlines, regardless of your absence.

Illness is an unexcused absence unless you notify me prior to the start of class that you are ill. You will not receive any participation points for the days you miss class for illness.

Job interviews on campus should be scheduled outside class hours. For out-of-town interviews, I will, allow you to miss one (1) class period as an excused absence provided you give me sufficient advance notice of your absence. You will not receive any participation points for the days you miss class for interviews.

Student competitions are an excused absence provided you give me sufficient advance notice and a note/email from the sponsoring faculty person for the competition. You will receive full participation points for the days you miss class for your involvement in a student competition.

Text / Required Materials:

- Project Specification Manuals - these will be downloaded in pdf format from K-State Online (KSOL).
- Project Plan Sets - these will be purchased from the department. Cost of these sets will announced in class. All other course materials will be handed out in class or made available for download from KSOL.
- Padlock for personal locker (locker signup will occur on Day 1)
- Architectural scale, engineering scale, highlighters, engineering paper
- Notebook binders for Class Notebook(3" or 4")
- Laptop Computer with Microsoft Excel - as the class progresses, we will be performing quantity take-off and eventually transitioning from take-off into the pricing of the work. We will begin these processes by hand. Later we will shift into working in Microsoft Excel for both the takeoff and pricing exercises for the various scopes of work. Each student will need a portable laptop computer equipped with Microsoft Excel to bring to class when we move into these phases. This software is also available in the Departmental computer labs for student use. If these requirements present a hardship for you, please see the instructor.
- RS Means – Building Construction Cost Data. These reference manuals will be loaned out during class as needed.

Departmental Classroom Policy:

The classroom environment will be managed similar to a professional office setting. Food, drinks, caps/hats, electronic devices (except as directed by your instructor), newspapers, tobacco products or other distracting / messy items WILL NOT be permitted in class. Daily housekeeping will be required as we share our room with other classes.

University and College of Engineering Policies:

Statement Regarding Academic Honesty

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A component vital to the Honor & Integrity System is the inclusion of the Honor Pledge which applies to all assignments, examinations, or other course work undertaken by students. The Honor Pledge is implied, *whether or not* it is stated: **"On my honor, as a student, I have neither given nor received unauthorized aid on this academic work."**

The default in this class is that ALL work will be accomplished individually, UNLESS my permission is given in advance of an assignment/quiz/exam/take-home exam/final. If you are in doubt, please ask

A grade of XF can result from a breach of academic honesty. The F indicates failure in the course; the X indicates the reason is an Honor Pledge violation.

For more information, visit the Honor & Integrity System home web page at: http://www.k-state.edu/honor/

Statement Regarding Students with Disabilities

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Statement Defining Expectations for Classroom Conduct

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Statement of Copyright Notification

Copyright 2015 (Shannon Casebeer) as to this syllabus, course materials and all lectures. During this course students are prohibited from selling notes to or being paid for taking notes by any person or commercial firm without the express written permission of the professor teaching this course.

Statement for Campus Safety

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Attachments:

- Outline of Course Topics
- CNS / ARE Course Outcomes Map
- Rubrics for Key Assignments/Projects related to Outcomes Map (these will be given out in class with assignments when req'd.)

Disclaimer:

The Instructor reserves the right to modify course content and/or this syllabus as at the Instructor's discretion during the semester.

KANSAS STATE UNIVERSITY | Architectural Engineering and Construction Science

CNS 641 Construction Estimating
Outline of Course Topics

Course Mindset: You are now an employee of KSU Construction Estimating Company.

Lecture Topics:

- All construction projects begin with the estimate
- General estimating definitions and information
- Estimating Process Outline
- Estimating flow charts
- Starting an estimate
- Site visitations, prebid meetings and market research
- Plan reviews
- Specification reviews
- Quantity surveying (performing take-off)
- General Requirements – job-specific overhead costs
- Building the Estimate
- Calculating direct costs - applying pricing to the determined quantities for matl's, labor & equipment
- Finding cost data – reference manuals, historical records, market bids
- Subcontractor and supplier solicitation
- Ethics in estimating – bid shopping vs. bid peddling
- Calculating indirect costs – bonds, insurance, permits / fees
- Taking and scoping an industry/market bid
- Identifying and assessing risk

Assignment Topics and the CSI Format for Estimating Construction Projects:

Note: The original Constructions Specification Institute (CSI) format for classifying the various types of work involved in construction projects was Divisions 1 through 16. In November of 2004, this format was expanded to Divisions 1 through 50. Many of the original 16 Divisions did not change, however several were renumbered. A handout of the new format will be given out in class.

Building Area (proper way to takeoff and evaluate – based on architectural AIA D101 standards)

- Div. 2 Existing Conditions
- Div. 2 Earthwork (now also referred to as Div. 31 EARTHWORK)
- Div. 2 Soil Treatment, Asphalt Paving, Site Concrete, Pavement Markings, Unit Pavers, Landscaping & Irrigation (now also referred to as Div. 32 EXTERIOR IMPROVEMENTS)
- Div. 2 Site Utilities (now also referred to as Div 33 UTILITIES)
- Div. 3 Concrete - Materials, Forming, Placement, and Finishing (self-performed scopes of work)
- Div. 3 Concrete Reinforcing Steel (self-performed scope of work)
- Div. 3 Structural Excavation (self-performed scope of work)
- Div. 4 Masonry
- Div. 5 Metals
- Div. 6 Rough Carpentry (self-performed scope of work)
- Div. 6 Finish Carpentry (self-performed scope of work)
- Div. 7 Insulation

CNS 641 - OUTLINE OF COURSE TOPICS (continued):

- Div. 7 Waterproofing
- Div. 7 Roofing and Sheet metal
- Div. 7 Exterior Insulation & Finish System (E.I.F.S.)
- Div. 7 Joint Sealants
- Div. 8 Openings - Doors and Windows
- Div. 8 Glass and Glazing
- Div. 8 Door Hardware (self-performed scope of work)
- Div. 9 Drywall and Metal Studs
- Div. 9 Floor Finishes / Base
- Div. 9 Painting & Wall Covering
- Div. 9 Acoustical Ceilings
- Div.10 Specialties (self-performed scope of work)
- Div.11 Equipment
- Div.12 Furnishings
- Div.13 Special Construction
- Div.14 Conveying Systems
- Div.15 Mechanical-Fire Suppression* (now also referred to as Div. 21 FIRE SUPPRESSION)
- Div.15 Mechanical-Plumbing* (now also referred to as Div. 22 PLUMBING)
- Div.15 Mechanical-HVAC* (now also referred to as Div. 22 HEATING, VENTILATING & AIR CONDITIONING)
- Div.16 Electrical* (now also referred to as Div. 25 INTEGRATED AUTOMATION, Div. 26 ELECTRICAL, Div. 27 COMMUNICATIONS and Div. 28 ELECTRONIC SAFETY AND SECURITY

*Note…Mechanical and Electrical estimating will be discussed only in general terms. The department offers a specific class for this specialized type of estimating called: CNS 738 Mechanical and Electrical Estimating (Professional Elective). You are strongly encouraged to take this course to further your estimating knowledge no matter what job you accept after graduation. Even if you work for a general contractor, truly understanding MEP systems is highly useful in managing construction projects and subcontractors as either a Superintendent or Project Manager.

KANSAS STATE UNIVERSITY | Architectural Engineering and Construction Science

CNS 642-Construction Management

Professor: David R. Fritchen
Office: 234 Seaton Hall
Office Hours: See hours posted by office door
E-mail: dfritch@ksu.edu
Office Phone No.: 532-3566

CNS 642 - Construction Management. (3) I, II. An introduction to the business of construction; study of legal and administrative considerations, contract documents, project delivery methods, bonds, and insurance. Evaluation of the characteristics of the construction firm, organizational structure, and performance considerations. Three hours recitation a week.
Prerequisites: CNS 540 - Construction Methods & Equipment.

Class Schedule: MWF @ 11:30-12:20 **Room** 221 Seaton Hall

Student Learning Outcomes

Upon completion of this course, the student shall demonstrate the following proficiencies:

1. Analyze the legal and administrative principles of construction contracting within a basic "framework of fairness".
2. Evaluate the contractual requirements applicable to contract administration and managing construction
3. Distinguish the differences between public and private contracting
4. Compare the primary contract types and project delivery methods
5. Select a contract type and project delivery method that meets the project program criteria.
6. Analyze the General Conditions of the contract to rights, duties and responsibilities of the contracting parties
7. Review the claims process and methods to avoid construction claims

Evaluation

Final grades for this course wi ll be earned on the basis of your performance on Examinations, Quizzes, Homework, Attendance and Class Participation.

Grades will be based upon a percentage of total points possible: % grade = $\frac{\text{Points earned}}{\text{Total Points Possible}} \times 100$

Letter grade equivalent:
A = 93 to 100
B = 85 to 92
C = 78 to 84
D = 70 to 77
F = 69 and below

Approximate Evaluation Values:

Homework	100 points
Quizzes	50 points
Projects	No Projects
Exams	650 points
Final Exam	Tuesday, May 12, 11:50 AM – 1:40 PM
Notebook	Maintain Notebook
Attendance	-1% off final grade after 2
Total Possible	Approximately 800 points

Exams:
There will be five (5) exams administered during the semester to test your comprehension, knowledge, and understanding of the subject matter presented. Short quizzes may be administered periodically to monitor your preparation for class.

Notebook:
All students will be expected to maintain a course notebook consisting of class notes, handouts, case studies, etc. The primary purpose of the required notebook is to promote the willingness of the student to maintain the course material for use as a reference source in their careers. In addition, the various materials provided will be referred to throughout the semester.

Homework:
Homework will be assigned for individual work and submission. Late work is not accepted, except in real emergencies beyond the control and due to no fault or negligence of the student (severe illness, family emergencies, etc.) Late is defined as later than the date and time specified by the instructor for any particular assignment.

Attendance:
Attendance is expected at every class. However, recognizing that certain personal circumstance may prohibit your attendance, you will be allowed two (2) absences without penalty. Each absence after that will result in 1% point being deducted from your final grade. When you are absent, you will miss handouts and notes. **It is your responsibility to obtain them from fellow students.** Do not request information and handouts from the instructor if you do not attend class.

Textbook / Required Materials
Construction Contracts, By Jimmie Hinze (3rd Edition) [ISBN: 0073397857] – Required (See www.abebooks.com)
Additional selected readings/handouts from other sources will be provided and/or assigned.

Classroom Policy:

Department Classroom Policy:

1. The classroom is to be regarded as the "class office" and therefore professional behavior is expected at all times. Start preparing now for the expectations of future employers. **All cell phones and electronic devices are to be turned off during class**. If any of these devices interrupt class, then you may be asked to leave for the remainder of the class period. This will be indicated as an absence for the class period. A second disruptive occurrence results suspension from 3 class periods.
2. No food or drink is permitted in the classroom. Also no hats/caps, newspapers, electronic devices or other distracting items will be allowed.

Kansas State University and College of Engineering Policies

Academic Honesty: Kansas State University has an Honor System based on personal integrity, which is presumed to be sufficient assurance that, in academic matters, one's work is performed honestly and without unauthorized assistance. Undergraduate and graduate students, by registration, acknowledge the jurisdiction of the Honor System. The policies and procedures of the Honor System apply to all full and part-time students enrolled in undergraduate and graduate courses on-campus, off-campus, and via distance learning. The honor system website can be reached via the following URL: www.k-state.edu/honor. A component vital to the Honor System is the inclusion of the Honor Pledge which applies to all assignments, examinations, or other course work undertaken by students. The Honor Pledge is implied, whether or not it is stated: "On my honor, as a student, I have neither given nor received unauthorized aid on this academic work." A grade of XF can result from a breach of academic honesty. The F indicates failure in the course; the X indicates the reason is an Honor Pledge violation.

Academic Accommodations for Disabled Students: Students with disabilities who need classroom accommodations, access to technology, or information about emergency building/campus evacuation processes should contact the Student Access Center and/or their instructor. Services are available to students with a wide range of disabilities including, but not limited to, physical disabilities, medical conditions, learning disabilities, attention deficit disorder, depression, and anxiety. If you are a student enrolled in campus/online courses through the Manhattan or Olathe campuses, contact the Student Access Center at accesscenter@k-state.edu, 785-532-6441; for Salina campus, contact the Academic and Career Advising Center at acac@k-state.edu, 785-826-2649.

Expectations for Classroom Conduct: All student activities in the University, including this course, are governed by the Student Judicial Conduct Code as outlined in the Student Governing Association By Laws, Article V, Section 3, number 2. Students who engage in behavior that disrupts the learning environment may be asked to leave the class.

Tobacco Use Policy: All of the College of Engineering facilities are designated a tobacco-free workplace and the use of tobacco products, including cigarettes, cigars, and smokeless tobacco, is prohibited in any college building, facility, or vehicle. It is the responsibility of each college member (faculty, staff, or student) to adhere to and enforce the policy, and to inform visitors of this policy. Violators of this policy may lose access privileges to university facilities.

Campus Safety Statement: Kansas State University is committed to providing a safe teaching and learning environment for student and faculty members. In order to enhance your safety in the unlikely case of a campus emergency make sure that you know where and how to quickly exit your classroom and how to follow any emergency directives. To view additional campus emergency information go to the University's main page, *www.k-state.edu*, and click on the **Emergency Information** button.

Copyright Issues: Class and lecture notes for this course are proprietary. During this course, students are prohibited from selling notes to or being paid for taking notes by any person or commercial firm without the express written permission of the professor teaching this course.

CNS 642-Construction Management

Semester Presentation Plan/Topical Outline

UNIT I

* Construction Trends and the Economy
* Chap. 1 Description of the Construction Industry
* Chap. 2 Construction Contracting Methods
* Chap. 3 The Nature of Contracts
* Chap. 4 Issues Concerning Real Property

EXAM #1

UNIT II

* Chap. 5 Agents
* Chap. 6 Forms of Organization
* Chap. 7 Contract Disputes & Torts
* Chap. 8 Surety Bonds

EXAM #2

UNIT III

* Chap. 9 The Bidding Phase
* Chap. 10 Construction Contract Documents
* Chap. 11 Unit Price, Cost-Plus, and Lump Sum Contracts

EXAM #3

UNIT IV

* Chap. 12 Changes
* Chap. 13 Changed Conditions
* Chap. 14 Matters of Time
* Chap. 15 Payments
* Chap. 16 Warranty

EXAM #4

UNIT V

* Chap. 17 Construction Insurance
* Chap. 18 Subcontractors and Subcontracts
* Claims Avoidance, Procedures & Documentation *(Handouts provided)*
* Chap. 20 Methods of Disputes Resolution

EXAM #5 (Final) **Final Exam:** Tuesday, May 12, 11:50 AM – 1:40 PM

Note: The instructor reserves the right to add, modify or change this syllabus at his discretion during the semester to accommodate class schedule, material presentation or student interests.

Informative Construction Websites

Stay informed of trends, legal and regulatory issues that affect the construction industry

For details on AGC's regulatory efforts, visit www.agc.org/advocacy

Ken Simonson's Data Digest is a weekly e-newsletter that updates readers on the latest construction industry economic information. You can receive it for free, subscribe at www.agc.org/datadigest

To learn more about AGC's legislative activity, read Construction Legislative Week in Review. Sign up at http://newsletters.agc.org/clwir.

Other useful web sites:

1. For a comparison of AIA A201 -1997 with the 2007 version
   http://www.aia.org/groups/aia/documents/pdf/aias076821.pdf

2. The ***AAA Guide to Drafting Alternative Dispute Resolution Clauses for Construction Contracts*** is designed to lead parties and counsel toward clear options for different and effective ways to structure and to conduct an alternative dispute resolution procedure.
   http://www.adr.org/si.asp?id=4366

3. Surety Information Office. The information source on Surety Bonds in Construction
   http://www.sio.org/

4. Dept. of the Treasury's listing of Approved Sureties.
   http://www.fms.treas.gov/c570/c570.html#certified

5. Comprehensive guide to construction, engineering, architecture and infrastructure resources with links to more than 7,500 technical, business and government agencies.
   http://www.constructionweblinks.com/

6. The **American Institute of Architects (AIA)** and The **Associated General Contractors of America (AGC)** formed a task force to develop a publication to offer basic definitions and facilitate a uniform understanding within the AEC community regarding Project Delivery Methods. You can access the *Primer on Project Delivery* on AGC of America website *www.agc.org:*
   http://www.agc.org/galleries/projectd/AIA-AGC_Primer_on_Project_Delivery_2nd_Edition.pdf

KANSAS STATE UNIVERSITY | Architectural Engineering and Construction Science

CNS 645 Construction Scheduling & Cost Control
Spring 2015

Instructor:	**Katie Loughmiller**
Office:	**Seaton 230**
Office Hours:	**Posted on Door**
E-mail:	**loughmil@k-state.edu**
Office Phone No.:	**(785) 532-3576**

Course Description

Construction cost reporting and control. Construction planning, both long-term and short-interval, construction scheduling, monitoring, and controlling. Computer application.

Prerequisites: CNS540, concurrent with CNS 641

Class Schedule:	MW	12:30-1:20	Seaton 236
	F	12:30-2:20	Seaton 226

Student Learning Outcomes

Upon completion of this course, students should demonstrate the following proficiencies:

1. Understand building components and how to establish relationships, sequencing and project control during construction.
2. Apply current methods and standards used in construction scheduling.
3. Analyze various construction schedules to confirm accuracy of activity relationships and overall critical path.
4. Evaluate production and cost control in relation to construction schedules.
5. Determine activity durations based on productivity rates and industry resources.
6. Create overall project schedules and shot-interval schedules for various types of construction projects.
7. Construct project schedules and present as a project-team using scheduling knowledge gained throughout the course.

Evaluation

Grade Scale:

93-100	= A
85-92	= B
78-86	= C
70-77	= D

Approximate Evaluation Values:

Labs/Projects	400 points
Homework/Quizzes	400 points
Exams	300 points
Final Project	350 points
Notebook	50 points
Total Possible	1500 points

Lab Assignments: Lab assignments are due before the end of class. Lab assignments will be worth 20 points each. There will be two lab projects during the semester worth 100 points each.

Quizzes: Periodically quizzes will be given at the beginning of class. All quizzes will be worth 5 points.

Homework: Homework will be assigned throughout the semester. All homework assignments will be due in class on Mondays. Homework assignments will be worth between 10-30 points.

Exams: Each will be valued at 100 points. There will also be periodic unannounced pop quizzes given during the semester.

Exam Dates: Week 5

Week 10^{h}

Final Exam – December 16th @ 4:10pm

Final Project: Final project will be due at the end of the semester (final date to be announced). It will have a point value of approximately 250 points to be added into the exam scores. There will also be a team "oral presentation" valued at an additional 50 points. Team member "peer evaluations" will also be required with a point value of 50 points.

Notebook: All students are expected to maintain an active notebook with handouts and notes, problem assignments, etc. This material should be brought to each class session. The notebook will be submitted for final review at the designated time for the final exam and have a point value of 50 points.

Notebooks should be submitted in the following format:

Title Page with Course Name, Course Number, Instructor and Student Name
Table of Contents
Notes/Homework by Week (i.e. 1,2,3)
Lab Assignments
Project 1
Project 2
Final Project

Course philosophy:

1. ***Preparation is not optional-it is a minimum expectation.*** It's your education and career. The true value of your career is in direct proportion to your commitment to excellence, no matter what your field of endeavor. Remember the road to success is always under construction; so be prepared to endure the process.
2. ***Your attendance and attention is required.*** It is a portion of your grade in the course. Tardiness is not acceptable. You are to be ready to participate at the beginning of class, and stay until class is over.
3. ***Communicate.*** This is the key in our business. Your ability to communicate and work effectively as an individual as well as a team member is vital. Communication is not only being able to express thoughts verbally or in writing, but includes listening and understanding as well. **All questions are welcomed!**
4. ***Professionalism.*** Your work and actions should be professional in appearance and thought. Lack of attention to detail indicates carelessness or lack of professional demeanor.

Attendance Requirements:

Attendance is expected for all class periods. You will be required to attend class. You will have 3 free absences throughout the semester. These absences include any reason for missing class, including interviews. You will be responsible for getting any notes or homework assignments from classmates. Absence from a lab class results in a zero for that lab assignment, unless prior arrangements have been made.

Each absence beyond the 3 free absences will result in a 50 point deduction from the overall course grade.

Late Work:
All homework is due at the time, date and location specified. Late work will be reviewed, but will receive a grade of **ZERO (0)**. **"Late"** is defined as work turned in after the due date/time. Real emergencies, as determined at the sole discretion of the instructor, that delay submission of an assignment may be considered on an individual basis.

Text / Reference Materials

Textbook: Construction Scheduling: Principles and Practices by Jay S. Newitt

Department Classroom Policy:
The classroom is to be regarded as the "class office" and therefore professional behavior is expected at all times. Start preparing now for the expectations of future employers. **All cell phones and electronic devices are to be turned off during class**. If any of these devices interrupt class, then you will be asked to leave for the remainder of the class period. This will be indicated as an absence for the class period. A second disruptive occurrence results in dropping the class. (Department Policy)

No food or drink is permitted in the classroom. Also no hats/caps, newspapers, electronic devices or other distracting items will be allowed.

University and College of Engineering Policies:

Statement Regarding Academic Honesty: Kansas State University has an Honor System based on personal integrity, which is presumed to be sufficient assurance that, in academic matters, one's work is

performed honestly and without unauthorized assistance. Undergraduate and graduate students, by registration, acknowledge the jurisdiction of the Honor System. The policies and procedures of the Honor System apply to all full and part-time students enrolled in undergraduate and graduate courses on-campus, off-campus, and via distance learning. The honor system website can be reached via the following URL: www.k-state.edu/honor. A component vital to the Honor System is the inclusion of the Honor Pledge which applies to all assignments, examinations, or other course work undertaken by students. The Honor Pledge is implied, whether or not it is stated: "On my honor, as a student, I have neither given nor received unauthorized aid on this academic work." A grade of XF can result from a breach of academic honesty. The F indicates failure in the course; the X indicates the reason is an Honor Pledge violation.

Statement Regarding Students with Disabilities: Students with disabilities who need classroom accommodations, access to technology, or information about emergency building/campus evacuation processes should contact the Student Access Center and/or their instructor. Services are available to students with a wide range of disabilities including, but not limited to, physical disabilities, medical conditions, learning disabilities, attention deficit disorder, depression, and anxiety. If you are a student enrolled in campus/online courses through the Manhattan or Olathe campuses, contact the Student Access Center at accesscenter@k-state.edu, 785-532-6441; for Salina campus, contact the Academic and Career Advising Center at acac@k-state.edu, 785-826-2649.

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Academic Freedom Statement: Kansas State University is a community of students, faculty, and staff who work together to discover new knowledge, create new ideas, and share the results of their scholarly inquiry with the wider public. Although new ideas or research results may be controversial or challenge established views, the health and growth of any society requires frank intellectual exchange. Academic freedom protects this type of free exchange and is thus essential to any university's mission.

Moreover, academic freedom supports collaborative work in the pursuit of truth and the dissemination of knowledge in an environment of inquiry, respectful debate, and professionalism. Academic freedom is not limited to the classroom or to scientific and scholarly research, but extends to the life of the university as well as to larger social and political questions. It is the right and responsibility of the university community to engage with such issues.

CNS 645 Project Grading Sheet Spring 2015

Name: _____

Activities/Durations:		
Activity List	25 points	_____
Activity Durations	10 points	_____
Procurement Activities	5 points	_____
Schedule Logic:		
Accurate Predecessors/Successors	25 points	_____
Critical Path/Relationship Arrows	10 points	_____
Start/Completion Dates Correct	5 points	_____
Deliverables:		
Gantt Chart	5 points	_____
Network Diagram	5 points	_____
Transmittal	5 points	_____
Critical Activity List	5 points	_____
Total	100 points	_____

Comments:

CNS 645 Project Grading Sheet Spring 2015

Name: _____

Activities/Durations:		
Activity List	15 points	_____
Activity Durations	5 points	_____
Schedule Logic:		
Accurate Predecessors/Successors	5 points	_____
Critical Path/Relationship Arrows	5 points	_____
Start/Completion Dates Correct	5 points	_____
Deliverables:		
Gantt Chart	5 points	_____
Memo	10 points	_____
Total	50 points	_____

Comments:

CNS 645 - Scheduling & Cost Control

Final Project Grade Sheet — Spring 2015

Report		**18**		
Title Page	2			
3-Ring Binder w/Cover	2			
Dividers	2			
Table of Contents	2			
Quality/Professionalism	10			
Team Approach		**10**		
Manpower	2			
Equipment	2			
Management	2			
Safety	2			
Weather	2			
Project Description		**5**		
Organizational Chart		**5**		
Activity Spreadsheet		**60**		
Activities	30			
Crew Types	10			
Daily Output/Man Hours	10			
Equipment/Materials Required	10			
Schedule Information		**12**		
Activities	4			
Durations	2			
Start/Finish/Float	2			
Resources	2			
Predecessors / Successors	2			
Schedule Logic		**90**		
Activity Logic	60			
Gantt Chart w/Relationships Shown	10			
PDM Network Diagram	10			
Completed on Schedule	10			
Project Costs		**40**		
Cost Loaded Activities	20			
Plotted Cost S-Curve	10			
Anticipated Monthly Draw	10			
Work Progress		**10**		
Team Name/Roles	5			
Progress Meeting	5			
Presentation		**50**		
Participation	10			
Organization/Content	17			
Professionalism/Presentation	10			
Question Response	13			
TOTAL		300		

Group Name: _____

Group Members: _____ _____

_____ _____

Comments:

KANSAS STATE UNIVERSITY | Architectural Engineering and Construction Science

CNS 650 CONSTRUCTION SAFETY

Spring 2015

Professor:	James F. Goddard
Office:	242 Seaton Hall
Office Hours:	See hours posted by office door
E-mail:	goddard@ksu.edu
Office Phone No.:	**532-3569**

Course Description Introduction to safety and safety programs, workers= compensation, OSHA organization and structure, safety policies and record keeping, safety standards. Emphasis will be on communication and job-site safety management. On-site safety inspections will be required within class presentation and written reports to be submitted.

STUDENT LEARNING OUTCOMES: Upon completion of this course, the student shall be able to:

1. Analyze the impact of the sections of safety programs.
2. Understand the requirements of workers compensation and its costs.
3. Explain OSHA procedures and analyzing incident statistics.
4. Interpret safety standards as they apply to the construction projects.
5. Apply safety methods to construction operations.
6. Understand the importance of safety training.
7. Apply the safe work methods to safety training.
8. Evaluate safety situations as applied to ethics

TEXTBOOK: Occupational Safety and Health Standards for the Construction Industry. (Purchased on-line – see instructions) Other references will be announced.

COURSE EVALUATION METHODS

GRADING POLICY: Any reports, presentations or homework not turned in by the due date will be considered late and will not be accepted. All assignments will be due at the beginning of the class period on the due date.

ATTENDANCE: Attendance is important and will be taken. A **5% reduction of the final grade** will be taken for **each** 3 absences. Therefore, it is advisable to attend all sessions. You must attend 30 sessions to receive your 30 hour OSHA Safety Card. If there are extenuating circumstances, please contact the instructor prior to the class day.

REPEATED TARDINESS WILL NOT BE TOLERATED

FINAL INSPECTION: A group jobsite safety inspection will be required late in the semester. Teams will be selected to visit the projects will be chosen by the instructor. These projects may be as far as 30 miles away. Reports and presentations will be required at that time. All team members are expected to contribute equally to this team project.

NOTEBOOK: Notebooks will be due near the end of the course. The cover should identify the course and have your name included plus a title page should be included in the notebook. Notebooks should be organized **by topic** and presented professionally. Divisions should be tabbed and listed in the table of contents. The due date will be announced at a later date.

EXAMS: Three exams will be given during the semester. They will be valued at 100 points each. There will be multiple periodic unannounced quizzes given during the semester.

GRADING SCALES: Exams, quizzes, attendance, participation and the presentations will be totaled directly to determine the final grade. The following grading scale will apply:

94 to 100 = A
86 to 93 = B
76 to 85 = C
70 to 75 = D
0 to 69 = F

OTHER INFORMATION:

DEPARTMENT CLASSROOM POLICIES: The classroom is to be regarded the same as a professional office and professional behavior is expected at all times. The following departmental policies are enforced 24 hours a day, seven days a week in all department spaces.

1. No food or drinks in any containers allowed in the classrooms or labs.
2. No tobacco product usage within Seaton Hall. (Chewing or smoking)
3. **TURN OFF ALL CELL PHONES BEFORE CLASS!!** If a cell phone interupts the class session, you will be asked to leave the room and a an unexcused absence recorded for that day. A second event will result in the dropping you from the course for the semester. Text messaging will not be allowed during class time!!

CLASS FEES: $5.00 for your OSHA 30 hour Safety Card

DISHONESTY: INTEGRITY: Kansas State University has an Honor System based on personal integrity which is presumed to be sufficient assurance that, in academic matters, one's work is performed honestly and without unauthorized assistance. Undergraduate and graduate students, by registration, acknowledge the jurisdiction of the Honor System. The policies and procedures of the Honor System apply to all full and part-time students enrolled in undergraduate and graduate courses on-campus, off-campus, and via distance learning. The honor system website can be reached via the following URL: www.k-state.edu/honor. A component vital to the Honor System is the inclusion of the Honor Pledge which applies to all assignments, examinations, or other course work undertaken by students. The Honor Pledge is implied, whether or not it is stated: "On my honor, as a student, I have neither given nor received unauthorized aid on this academic work." A grade of XF can result from a breach of academic honesty. The F indicates failure in the course; the X indicates the reason is an Honor Pledge violation.

DISABILITIES & LIMITATIONS: Students with disabilities who need classroom accommodations, access to technology, or information about emergency building/campus evacuation processes should contact the Student Access Center and/or their instructor. Services are available to students with a wide range of disabilities including, but not limited to, physical disabilities, medical conditions, learning disabilities, attention deficit disorder, depression, and anxiety. If you are a student enrolled in campus/online courses through the Manhattan or Olathe campuses, contact the Student Access Center at accesscenter@k-state.edu, 785-532-6441.

UNIVERSITY HARRASSMENT and CONDUCT POLICY: It is important that you understand your rights and responsibilities regarding the university=s Sexual and Racial Harassment Policy. One purpose of your education is to help you develop skills, approaches, and abilities that are necessary for effective teamwork, and for your success in your profession and as a citizen. It is important that you understand your rights and responsibilities regarding the University=s Sexual and Racial Harassment policies. Full text of these policies can be found on the KSU website at: http://www.k-state.edu/policies/ppm/3000/3010.html#discr . All student activities in the University, including this course, are governed by the Student Judicial Conduct Code as outlined in the Student Governing Association By Laws, Article V, Section 3, number 2. Students who engage in behavior that disrupts the learning environment may be asked to leave the class.

CLASSROOM CONDUCT POLICIES All student activities in the University, including this course, are governed by the Student Judicial Conduct Code as outlined in the Student Governing Association By Laws, Article V, Section 3, number 2. Students who engage in behavior that disrupts the learning environment may be asked to leave the class.

CNS 650

CONSTRUCTION SAFETY

Course Topical Outline

Topic	Length of Coverage (# of class periods)
Introduction to Safety (Working with and managing the Safety & Health Culture)	2.5 Hours
Safety Programs (Creating, Revising, and Implementing)	2 Hours
Workers' Compensation (Work Injury Classifications, Requirements, and Claims)	2.5 Hours
Introduction to OSHA (OSHA terminologies, organization, policies, and enforcement) (OSHA Record Keeping)	2 Hours
Introduction to OSHA Standards (Organization of topics, General Duty Clause, etc.) Subparts A & B and Focus 4	3 1/2 Hours
Subpart C (Gen. Safety & Health Provisions) (confined space)	2 Hours
Subpart D (Occup. Health & Envir. Controls) (Hazard Communication)	3 Hours
Subpart E PPE	2 Hours
Subpart F Fire Protection	1 Hour
Subparts G, & O Signs, Signals, Barricades, Motor Vehicles, Etc.	1 Hour
Subpart H Hoisting and Material Handling (struck by/caught in)	2 Hours
Subparts I Tools (struck by/caught in)	1 Hour
Subpart J Welding & Cutting	1/2 Hour
Subparts K & V Electrical	2 Hours
Subpart M Fall Protection	2 Hours
Subpart L Scaffolding	3 Hours
Subpart X, Stairways & Ladders	1 Hour
Subpart N and CC Cranes & Hoisting Devices, elevators, conveyors, etc.	2 Hours
Subpart Q Concrete & Masonry	1 Hour
Subpart R Steel Erection	2 Hours
Subpart P Excavation & Trenching	2 Hours

KANSAS STATE UNIVERSITY | Architectural Engineering and Construction Science

CNS 660 – Construction Operations
Spring 2015

Instructor: Ray Buyle
Office: 247 Seaton
Office Hours: Posted outside office door
E-mail: rbuyle@ksu.edu
Office Phone No.: 532-3577

Course Description

Shop drawing and submittal processes, field and office practices, change orders, construction safety standards and practice, pre-construction planning, expediting, short-interval planning. **Prerequisites:** CNS 641, 642, 645. Pr. or conc.: CNS 650.

Class Schedule:

M-W-F 1:30-2:20 pm Seaton 221

Student Learning Outcomes

Upon completion of this course, students should demonstrate the following proficiencies:

1. understand effective contracting methods, operating strategies, tactics, procedures, records, and forms.
2. apply the principals of sound documentation necessary to effectively direct and control field operations in the construction industry.
3. analyze, evaluating and creating billing information to manage financial components of project management.
4. analyze and evaluating production components to manage field operations.
5. Understand and appreciate the need for team involvement and participation.

Evaluation

Grade Scale:

A	100-93%
B	92-85%
C	84-78%
D	77-70%
F	69% and below

Grades will be based on percentage of points possible:

$$\% \text{ grade} = \frac{\text{Points earned}}{\text{Total Points Possible}} \times 100$$

Approximate Evaluation Values:

Homework/Assignments	65 points
Projects	350 points
Exams/Quizzes	200 points
Critical Analysis Paper	100 points
Notebook	50 points
Total	765 points

Homework and Projects

Homework and projects will be assigned on a regular basis and collected at the beginning of the class period when due, unless otherwise noted. Late work will not be accepted for credit. The instructor may consider emergencies or other issues on a case-by-case basis. Points may be deducted from assignments that are not neat and organized. Assignments are to be completed by individual effort, unless otherwise noted. However, working with others to compare answers or increase understanding is encouraged. Failure to complete an assignment may result in a grade reduction beyond the point value of the assignment at the sole discretion of the instructor.

Exams/Quizzes/Final Exam:

There will be a minimum of two (2) exams administered during the semester to test your comprehension, knowledge, and understanding of the subject matter presented. Short quizzes may be administered periodically to monitor your preparation for class.

Notebook:

All students are required to maintain a course notebook consisting of class notes, handouts, assignments, etc. The primary purpose of the notebook is to reinforce the planning, organization, and the professional presentation of material that will be required of you as you enter the construction/engineering industry and to facilitate the use of the course material as a future reference. In addition, the various materials provided will be referred to throughout the semester. The notebook is to be a 3-ring binder, neat and organized and include the following:

- A front cover label that includes your name, the course number ("CNS660") and title ("Construction Operations"), the semester and year ("Spring 2015"), and the instructor's name ("Asst. Professor Ray Buyle – Instructor")
- A spine label that lists the course number and name, semester and year.
- A detailed Table of Contents that is comprehensive and well organized
- Printed labeled tabs that correspond to your table of contents

The notebook will be reviewed and graded by the instructor at the end of the semester for organization, completeness and neatness. Appropriate credit will be given based on your professional efforts. (50 pts)

Attendance:

1. Attendance is mandatory and expected:
   a. Each student is responsible for all information introduced in class.
   b. Excused absences are to be requested and approved prior to the beginning of the class period that will be missed. Approved absences are at the discretion of the instructor and will be considered on a case by case basis.
   c. If an absence is due to illness, a doctor's note is required in order for the absence to be excused.
   d. Missing/leaving class for internship/job interviews is not acceptable and will not be counted as an excused absence. Schedule your interviews outside of class time (Dept. policy).
   e. Each unexcused absence will result in a **2.5%** point reduction from the total points earned for the semester (this includes absences caused by cell phone disruptions and tardiness). You will be allowed **two** discretionary unexcused absences for the semester before points are deducted.
   f. Leaving class early without prior consent of the instructor is considered an unexcused absence.
2. Tardiness will not be tolerated. If you are not present in the classroom at **1:30** p**m** (by the instructor's watch), it will be counted as an unexcused absence.

Textbook / Required Materials

CIRC Manual, available at K-State Research and Extension Bookstore and Mail Center, Umberger Hall, Room 24.
Handouts as provided in class

Classroom Policy:

Refer to **Department Classroom Policy** below.

Department Classroom Policy:

1. The classroom is to be regarded as the "class office" and therefore professional behavior is expected at all times. Start preparing now for the expectations of future employers. **All cell phones and electronic devices are to be turned off during class**. If any of these devices interrupt class, then you will be asked to leave for the remainder of the class period. This will be indicated as an absence for the class period. A second disruptive occurrence results in dropping the class. (Department Policy)

2. No food or drink is permitted in the classroom. Also no hats/caps, newspapers, electronic devices or other distracting items will be allowed.

University and College of Engineering Policies:

1. **Statement Regarding Academic Honesty**

Kansas State University has an Honor System based on personal integrity, which is presumed to be sufficient assurance that, in academic matters, one's work is performed honestly and without unauthorized assistance. Undergraduate and graduate students,

by registration, acknowledge the jurisdiction of the Honor System. The policies and procedures of the Honor System apply to all full and part-time students enrolled in undergraduate and graduate courses on-campus, off-campus, and via distance learning. The honor system website can be reached via the following URL: www.k-state.edu/honor. A component vital to the Honor System is the inclusion of the Honor Pledge which applies to all assignments, examinations, or other course work undertaken by students. The Honor Pledge is implied, whether or not it is stated: "On my honor, as a student, I have neither given nor received unauthorized aid on this academic work." A grade of XF can result from a breach of academic honesty. The F indicates failure in the course; the X indicates the reason is an Honor Pledge violation.

2. **Statement Regarding Students with Disabilities**

Students with disabilities who need classroom accommodations, access to technology, or information about emergency building/campus evacuation processes should contact the Student Access Center and/or their instructor. Services are available to students with a wide range of disabilities including, but not limited to, physical disabilities, medical conditions, learning disabilities, attention deficit disorder, depression, and anxiety. If you are a student enrolled in campus/online courses through the Manhattan or Olathe campuses, contact the Student Access Center at accesscenter@k-state.edu, 785-532-6441; for Salina campus, contact the Academic and Career Advising Center at acac@k-state.edu, 785-826-2649.

Additional Information for Faculty:

Faculty members who need assistance with accommodating a student with a documented disability should contact the access services office on the appropriate campus. Assistance may include administration of course exams with extended time and/or distraction reduced environment or providing an alternate format of text materials.

3. **Statement Defining Expectations for Classroom Conduct**

All student activities in the University, including this course, are governed by the Student Judicial Conduct Code as outlined in the Student Governing Association By Laws, Article V, Section 3, number 2. Students who engage in behavior that disrupts the learning environment may be asked to leave the class.

http://www.k-state.edu/provost/resources/teaching/course.html

Attachments:

Outline of Course Topics
CNS/ARE Course Outcomes Map

KANSAS STATE UNIVERSITY | Architectural Engineering and Construction Science

Construction Operations
CNS 660

Instructor:	**Ray Buyle**	Office:	Seaton 247
Office Phone:	(785) 532-3577	Office Hours:	Posted on office door
Email:	rbuyle@ksu.edu		

Semester Schedule
(subject to change at instructor's discretion)

Topics

1. Introduction - syllabus review and class requirements/expectations
2. Team selection
3. Springhill Suites bid documents
4. Critical analysis paper assignment
5. Project management roles/functions
6. Project delivery methods with emphasis on alternative project delivery
7. Construction "Paper Trail"
8. Letter of transmittal
9. "Fun Fridays" collaborative projects with ARE Management class
10. Subcontract agreements and purchase orders
11. Insurance coverage
12. Budgeting
13. Schedule of values/Application for Payment
14. Submittals and shop drawings
15. Requests for Information
16. Change Orders
17. Architect's Supplemental Instructions
18. Construction Change Directives
19. Job site planning and layout
20. Company executive project update meeting
21. Job cost-to-date reports and cost coding
22. Dual gate entrance systems
23. Construction industry terminology

CNS 660 – Construction Operations

Department of Architectural Engineering and Construction Science

Project Evaluation: Site Layout Exercise

_____ Urban _____ Rural

TEAM NAME:

Points Available & Ratings

Item	Poor	Fair	Average	Good	Excellent
Organization/ Content					
Oral Presentation					
Assumptions/ Creative Solutions					
Sketchup					
Equal Participation/ Time:					

Total: 0

Comments:

COMPANY EXECUTIVE BRIEFING NOTEBOOK

POINTS POSSIBLE												
Organization/presentation	Agenda	Company Bio & Bond Request	Subcontracts/Purchase Orders	Estimate/Budget	Schedule of Values/Pay App	CPM Schedule	2-week Schedule	Submittals/Shop Drawing Log & Example	RFI/Proposal	Site Specific Safety Plan	Supplemental Material	**Total**
5	**5**	**3**	**20**	**15**	**10**	**20**	**5**	**4**	**3**	**5**	**5**	**100**

	Points Possible
Presentation:	
Articulate, polished, professional	5
Ability to provide clear, well reasoned explanations on prepared material	5
Ability to provide reasoned responses to questions	5
Organization & Punctuality:	
On time and prepared for presentation	3
Prepared written agenda (concise, complete scope, well organized)	4
Equal participation and input among team members	5
Knowledge of the Subject Matter:	
Status of start-up (contract w/ Owner, bonds, insurance, permits, Notice to Proceed, etc.)	5
Understanding of cost issues (budget, buyout, profit, Application for Payment)	20
CPM Schedule (logical sequencing, durations, weather band considerations)	20
Subcontracts & Purchase Orders (well written scopes, $ amounts agree with budget)	10
Site organization, layout and coordination	5
Safety plan	3
Submittal/shop drawing process (understanding of its purpose & proper procedures)	5
RFI's, ASI's, PR's, Proposals, and CO's (understanding of each, purpose & procedures)	5
TOTAL	100

GRADING SCALE:

93-100 = A
85-92 = B
78-84 = C
70-77 = D
< 69 = F