COLLEGE OF ENGINEERING

UNT

Department of Engineering Technology

CNET 2180 – Construction Methods and Surveying
4 (3 hrs lecture; 3 hrs lab) Credit hours
Section 001 – Spring 2018 Syllabus
Version Dated January 16, 2018

INSTRUCTOR	**Aloysius (Al) Attah, P.E.**
OFFICE	NTDP: Room F115G
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Lecture Meeting
Days/Times: Mon./Wed. 11:30 a.m. – 12:50 p.m.
Room: B155

Laboratory Meeting:
Mon: Section 101: 01:00 p.m. – 03:50 p.m.
Tue: Section 102: 10:00 a.m. – 12:50 p.m.
Tue: Section 103 02:30 p.m. – 05:20 p.m.
Thu: Section 104 10:00 a.m. – 12:50 p.m.
Room: D155

Office Hours
Mon/Wed: 10:00 a.m. – 11:30 a.m.
Tue/Thu: 01:00 p.m. – 02:30 p.m.

OR

By Appointment

EVALUATION

Lecture

Attendance /In-class Exercises	5%
Assignments	20%
Midterm Exam	20%
Final Exam	20%

Laboratory

Attendance (Must stay for/contribute to the entire lab)	5%
Project Construction/Weekly Presentations- (Grade is factor of lab attendance)	25%
Final Lab Report/Presentation/Peer Review (Student must participate to get grade)	5%
TOTAL	**100%**

Letter Grade
A = 90 – 100
B = 80 – 89
C = 70 – 79
D = 60 – 69
F = 0 – 59

COURSE DESCRIPTION:

The course covers principles, materials, and methods used to design and construct most types of large and small buildings. It also introduces the principles underlying most all forms of survey measurements and their use.
An evaluation is made available to you at the end of the semester for all organized classes at UNT, providing you a chance to comment on how this class is taught. UNT Provost office encourages your participation in this survey.

PREREQUISITES:

CNET 1160

REQUIRED TEXTBOOKS:

A) Printreading for Residential and Light Commercial Construction " 6th Ed by Thomas Proctor, Leonard Toenjes. American Technical Publishers, Inc. ISBN 9780826904843

B) "Surveying with Construction Applications"; Barry F. Kavanagh and Dianne K. Slattery; Pearson. 2015; ISBN 10: 0-13-276698-1

RECOMMENDED TEXTBOOK:

C) "Construction Materials, Methods, and Techniques: Building for a Sustainable Future" by William P. Spence / Eva Kultermann; Delmar/Cengage Learning; Fourth edition; 2016:ISBN 9781305086272

SUPPLEMENTAL TEXTS AND MATERIALS:
Architectural scale;
OSHA Personal Safety Glasses required for Lab work
Additional supplemental materials will be given as handouts or web links in class/lab

COURSE OBJECTIVES: (TAC OF ABET Criteria and Program Educational Objectives Supported).

This course will provide the students with an understanding of terminology and basic process and methods used in the construction industry, along with an introduction to sustainability and "green building." The student will also gain an introductory understanding of survey tools and documents.

STUDENT LEARNING OUTCOMES: (Course Objectives Supported)
At the conclusion of this course, the student should be able to demonstrate ability for:

- Selecting appropriate construction materials and practices
- Using techniques for surveying, drawings, and mapping associated with building construction
- Utilizing modern surveying methods for construction layout

INSTRUCTIONAL OBJECTIVES:

Students who successfully complete CNET 2180 will be capable of the comprehension, and application of construction materials, processes, and surveying with respect to residential and commercial construction projects.

"Real world" applications will be discussed in class.

Examinations will require detailed technical information as well as general knowledge of new processes, methods, and materials along with new trends in sustainability.

Presentations by the students will demonstrate the "hands-on" experience gained in the laboratory environment.

LEARNING STRATEGIES:

Lectures, laboratory workshop, demonstrations, problem solving examples, student dialogue, student presentations, teamwork.

LABORATORY OUTLINE:

- Students are required to provide and wear OSHA approved safety glasses and protective work-boots (over the ankle).
- Hard hats (provided by UNT) must be worn in the construction lab at all times.
- Adherence to safety rules and regulations is critical.
- Laboratory projects will follow a typical construction sequence as much as possible.
  Note: The playhouse plan is not perfect. It simulates what is typically obtained in the real world where changes to the plans and specifications are usually expected. Therefore, you are expected to submit "Request for Information" (RFI) to obtain clarifications as necessary.
- Survey lab projects will require outdoor field work.

Laboratory "Group Norms"
1. Assist and support team members in each other's learning and safety
2. Start and end on time
3. Leave the laboratory clean and all tools back in their storage places

Lab Project /Presentations/Report/Peer Review:
- The lab project consists of playhouse construction which utilizes knowledge from CNET 1160.
- Each lab group will make weekly presentations during lab sessions on activities to be covered in the lab for that week.
- Each lab group will also make final project presentations.
- Students must participate in all the presentations to receive full grade for all the presentations.
- The final lab report shall be written per Technical Writing guideline posted on Blackboard.
- Each student's final project lab grade is a function of the student's lab attendance and active participation in constructing the playhouse.
- The members of each group will peer-review each other for each person's level of participation/contribution towards completing the projects.

COMPUTER USAGE:

This depends on assignments which will include internet searches for materials and specifications, process examples, and other work as needed.

ORAL COMMUNICATION USAGE:

Classes/labs will include presentation of solutions to classroom problems and/or assignments.

WRITTEN COMMUNICATION USAGE:

All reports assigned as homework must be prepared professionally.

LIBRARY USAGE:

Minimal usage is expected. Students are encouraged to utilize on-line resources, suggested supplemental texts and materials, and to provide examples of current relevant issues.

COURSE POLICY/GRADING:

Attendance/In-class Exercises

- Attendance will be taken at the discretion of the instructor. There will also be random in-class exercises designed to encourage students' presence and participation in class. These exercises may be given any time during a class session. A student who misses any of the exercises for any reason will receive a **grade of zero** for that exercise. Since in-class exercises are designed to promote student interaction/team work during class/lab sessions, there is no opportunity for a make-up even if a student has an excused absence from the instructor.

Assignments:

- Assignments will be assigned throughout the semester. The instructor will provide specific details for each assignment.
- The assignments will be selected at random for grading.
- All assignments shall be typed and legible. They shall contain all work required to reach the solution. These factors will be considered in your grade for the selected assignment.
- Only one late assignment will be accepted during the semester. It may be submitted any time within one week after it is due but it will be graded at 50% penalty. For example, if the raw grade for an assignment is 80%, then with the 50% penalty applied, the final grade will be 40%. Other late assignments will be assigned a grade of zero.

Exams:

- There will be a midterm exam as shown in the course outline.
- A final exam will be given during the final exam period as shown in the course outline.
- Exams will be cumulative, covering all topics including:
    - All presentations and any topics discussed in class
    - Any chapters of the text noted in the course outline
    - Any work carried out to complete exercises, assignments, and the lab.
- Only printed material will be permitted (Laptops, cell phones, etc. will not be allowed).

Extra Credit:

- There is none.

Other Policies:

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

COURSE OUTLINE:

This course outline is subject to change.

Week	Date	Topic	Textbook / Handout	Chapter
1	15-Jan	No Class – University closed		
	17-Jan	• Course introduction / Review of syllabus • How To Build A Play House	Handout: "How To Build A Play House" posted on Blackboard.	
	Lab	• Obtain architect's rule and safety glasses • Read the entire plan on **"How To Build A Play House"** • Construct a popsicle/balsa stick house. **Due 1/22/18 @ 11:30 a.m.**	Handout	
2	22-Jan	Print reading	A) Proctor & Toenjes	Chp. 1
	24-Jan	Print reading	A) Proctor & Toenjes	Chp. 1
	Lab	• Tool Safety Certification • Construct play house floor: Option 1	Handout C) Kultermann & Spence A) Proctor & Toenjes	 Review Chp. 20 Chp. 2 Pages 57-64
3	29-Jan	Multifamily Dwelling – Plans: • A1.1 and A 1.3	A) Proctor & Toenjes	Chp. 6 Pages 217-224
	31-Jan	Multifamily Dwelling – Plans • A1.11 and A1.12	A) Proctor & Toenjes	Chp. 6 Pages 224-232
	Lab	• Construct play house floor: Option 1 • Construct wall frames	Handout A) Proctor & Toenjes C) Kultermann & Spence	 Chp. 3 Pages 111-119 Review Chp. 20
4	5-Feb	Multifamily Dwelling – Plans • A2.1 and A3.2	A) Proctor & Toenjes	Chp. 6 Pages 232-236
	7-Feb	Multifamily Dwelling – Plans • A4.1 and A4.2	A) Proctor & Toenjes	Chp. 6 Pages 236-242
	Lab	• Construct wall frames	A) Proctor & Toenjes C) Kultermann & Spence Handout	Chp. 3 Pages 111-119 Review Chp. 20
5	12-Feb	Multifamily Dwelling – Plans • A5.1 and A5.4	A) Proctor & Toenjes	Chp. 6 Pages 242-245

	14-Feb	• Roofing Systems	A) Proctor & Toenjes C) Kultermann & Spence	Chp. 3 Pages 111-119 Review Chp. 27
	Lab	• Roofing Systems • Construct roof frame • Construct roof cover/shingles • Construct wall cover (siding) • Plumbing	A) Proctor & Toenjes C) Kultermann & Spence Handout C) Kultermann & Spence	Chp. 3 Pages 111-119 Review Chp. 27 Review Chp. 39
6	19-Feb	TEXO Competition		
	21-Feb	• Construct roof cover/shingles • Construct wall cover (siding) • Electrical	C) Kultermann & Spence Handout	Review Chp. 27 Review Chp. 41
	Lab	• Electrical • Construct the door	C) Kultermann & Spence C) Kultermann & Spence Handout	Review Chp. 41 Review Chp. 29
7	26-Feb	Doors, Windows, Entrances, and Storefronts	C) Kultermann & Spence	Review Chp. 29
	28-Feb	Review for midterm		
	Lab	• Construct the window • Construct the gable and suffit	C) Kultermann & Spence Handout	Review Chp. 29
8	5-Mar	***Midterm Exam***		
	7-Mar	Thermal Insulation and Vapor Barriers	C) Kultermann & Spence	Review Chp. 24
	Lab	• Insulation • Sheetrock	C) Kultermann & Spence	Review Chp. 24 Review Chp. 33
9	12-Mar	*Spring Break*	*Spring Break*	*Spring Break*
	14-Mar	*Spring Break*	*Spring Break*	*Spring Break*
10	19-Mar	Interior Finishes, Paints, and Coatings	C) Kultermann & Spence	Review Chp. 31
	21-Mar	Interior Finishes, Paints, and Coatings	C) Kultermann & Spence	Review Chp. 31
	Lab	Tape/bed/Texture & Paint	C) Kultermann & Spence	Review Chp. 31

11	26-Mar	Play House Report / Presentations		
	28-Mar	Play House Report / Presentations		
	Lab	5-S Principles & the Playhouse Project	*Search the Internet for 5-S Principles*	
12	2-Apr	Surveying Fundamentals	B) Kavanagh & Slattery	Chp. 1
	4-Apr	Surveying Mathematics	B) Kavanagh & Slattery	Chp. 2
	Lab	Introduction to Survey Tools / Leveling		
13	9-Apr	Tape Measurements	B) Kavanagh & Slattery	Chp. 3
	11-Apr	Leveling	B) Kavanagh & Slattery	Chp. 4
	Lab	Leveling		
14	16-Apr	Introduction to Total Stations and Theodolites	B) Kavanagh & Slattery	Chp. 6
	18-Apr	Introduction to Total Stations and Theodolites	B) Kavanagh & Slattery	Chp. 6
	Lab	• Survey Layout • Surveying Field Book		
15	23-Apr	Total Stations	B) Kavanagh & Slattery	Chp. 7
	25-Apr	Total Stations	B) Kavanagh & Slattery	Chp. 7
	Lab	• Survey Layout • Surveying Field Book		
16	30-Apr	Building Construction Surveys	B) Kavanagh & Slattery	Chp. 18
	2-May	Review for Final Exam		
	Lab	Team Photo		
17	7-May	*Comprehensive Final Exam* Monday: 10:30 a.m. – 12:30 p.m.		