

Oklahoma State University Institute of Technology
Face-to-Face Common Syllabus
Summer 2018

ECNT 2616 ELECTRICAL CONSTRUCTION CAPSTONE EXPERIENCE

An in-depth examination of all studied wiring systems, layouts and characteristics. The use of blueprints to make estimates of materials and labor costs will be stressed. Special emphasis will be placed on integration of all the fundamental and general education classes (i.e. math, English, technical writing). The course will be arranged so the student has a solid understanding of the electrical contracting business. The National Electrical Code, safety and the electrical methods taught in previous classes will be used, and the student will complete the exit assessment instrument and other graduation requirements.

Course Purpose:

To reinforce learning that occurred in pervious semesters and for the students to be able to prepare an Electrical cost estimate.

Type of course: Theory/Lab

Credit Hours: 6; Total hours of theory per semester: 90;

Total hours of lab for the semester: 60;

Class length: 2nd half

Class days and times: MTWRF: 7:30-11:30 or 12:00- 3:55

Prerequisites: ECNT 1253, ECNT 2473, ECNT 2533, and completion of one (1) internship, or approval by the School Dean.

Instructor Name: Val Peterson

Instructor Phone: (918) 293-4873

Office: Bldg 600 Rm. 115

Instructor email: val.peterson@okstate.edu

Contact: My preferred method of contact is Email. Please allow 24-48 hours to return your correspondence during the normal work week.

Instructor's Office Hours: Are Posted

Schools Name: Construction Technologies

Division's Main Phone: 918-293-4742

REQUIRED TEXT, REFERENCES, AND MATERIALS

Texts: Estimating Electrical Construction, Revised, Mark C. Tyler, Craftsman, ISBN#978-157218253-0

2018 National Electrical Estimator, Mark C. Tyler, Craftsman, ISBN# 978-157218335-3

References: 2017 National Electric Code; ISBN# 978-145591277-3, Mike Holt
Changes to the National Electrical Code; ISBN# 978-0-9863534-2-0

Materials: Notebook, pen, calculator, multicolored highlighters/pencils, thumb drive.

Uniform/Tools: Tools and PPE required in previous classes

Estimated Cost for Materials: \$190.00
Estimated Cost for Uniform/Tools: N/A

Optional Resources: Highly recommended: laptop or tablet

Upon completion of the course, students should:

Course Objectives	Assessment of Objectives
*2616-1. (Elect Capstone) Fully understand the key elements of an electrical bid.	Exams, Assignments, Labs
*2616-2. (Elect Capstone) Read and interpret electrical blueprints.	Exams, Assignments, Labs
*2616-3. (Elect Capstone) Prepare takeoffs, calculate material cost, labor cost, equipment cost, subcontract cost, and overhead cost for electrical bids.	Exams, Assignments, Labs
*2616-4. (Elect Capstone) Prepare Project Proposal Package.	Exams, Assignments, Labs
2616-6. (Elect Capstone) Use computerized estimating to preform takeoff, calculate material cost, labor cost, equipment cost, subcontract cost, and overhead cost for electrical bid.	Exams, Assignments, Labs
2616-5. (Elect Capstone) Review Changes to the 2017 National Electrical Code Book.	Exams, Assignments

Aspects of the course objective assessments may be used in the university’s assessment of student learning. If applicable, an asterisk (*) above indicates this course is used in the university assessment program.

COURSE ACTIVITIES

In this course students will:

- Participate in class discussions and activities.
- Participate in Lab Exercises
- Take examinations.
- Complete reading assignments.
- Required to do quizzes.

EVALUATION - GRADES WILL BE BASED ON THE QUALITY AND COMPLETION OF THESE TASKS:

Participation	10%
Quizzes	25%
Unit Exams	25%
Lab Exercises	30%
Final Exam	10%
Total	<u>100%</u>

OSUIT Grading Scale
A = 90%-100%
B = 80%-89%
C = 70%-79%
D = 60%-69%
F = 59% & below

*The student's grade for this assignment will be used in the university's assessment of student learning. A 70% competency or higher receives a Pass rating. This Pass/Fail rating is independent of the student's course grade.

Daily and/or weekly quizzes, small weekly assignments and similar type projects: Normal return time to student by next class meeting or no later than one (1) week.

Extensive assignments, large lab projects, extensive quizzes, exams and similar type projects: Normal return time to students in one (1) to two (2) weeks.

Any extra credit will be applied to the portion of the grade the instructor sees fit when and if he decides to give extra credit.

RECOMMENDED STUDENT COMPETENCIES/SKILLS

Math Calculations and use of spread sheet program like Excel.

AUTHORIZED TOOLS

Students will use tools that are purchased for previous ECNT courses, no additional tools will be required

LATE WORK

As a general rule late work will **not** be accepted. Exceptions may be granted by the instructor only if **prior** arrangements have been made.

TESTING

Students may use any/all course materials, including books and notes, while participating in classroom activities. **All test, quizzes, Lab exercises and written assignments are to be completed independently; no collaboration with classmates is permitted and any instance of such will be considered academic dishonesty.**

OTHER LAB AND CLASSROOM POLICIES

N/A

SYLLABUS ATTACHMENT

View the Syllabus Attachment, which contains other important information, by visiting http://osuit.edu/center/student_syllabus_information

Course Schedule			
Course Outline Schedule	Topic	Assignment	Due Date
Day2/Week 9	Introductions, Review Syllabus & Course expectations NEC Competency Exam	Review Exam Read Changes to 2017 NEC, Branch Circuits, Pages 51-104	Next Class
Day3/Week 9	Changes to 2017 NEC, Branch Circuits, Quiz Changes to 2017 NEC, Grounding	Read Changes to 2017 NEC, Grounding, Pages 123-186	Next Class
Day4/Week 9	Changes to 2017 NEC, Grounding, Quiz Changes to 2017 NEC, Methods	Read Changes to 2017 NEC, Methods, Pages 187-224	Next Class
Day5/Week 9	Changes to 2017 NEC, Methods, Quiz Changes to 2017 NEC, Cable & Conduit	Read Changes to 2017 NEC, Cable & Conduit, Pages 249-290	Next Class
Day1/Week 10	Changes to 2017 NEC, Cable & Conduit, Quiz Review for Exam Exam	Lecture, Take Notes Review Exam	Next Class
Day2/Week 10	Design Team, Const. Team, Key Bid Elements, Bid documents & Types of Bids, Quiz Contract Documents & Project Requirements; Bid Forms and Submission, Quiz	Lecture, Take Notes Supplemental Handout	Next Class
Day3/Week 10	Take-Off items, Take-Off tools, & Worksheets: Review for Exam Exam	Lecture, Take Notes Review Exam	Next Class
Day4/Week 10	Job Walk & Pre-Bid Conference, Site Plans, Job Phase, Site Conditions	Lecture, Take Notes	Next Class
Day5/Week 10	Preparing a Resume Lab – Electrical Design	Prepare Draft Resume	Day1/Wk13
Day1/Week 11	Shortcut estimating, Detailed Take-Off, Take-Off procedures Adding cost to Take-Off, Labor Calc. & Cost:	Lecture, Take Notes	Next Class
Day2/Week 11	Lab Electrical Estimating Cost of Equip., Sub-contracts, overhead, profit & taxes	Lecture, Take Notes Review Notes, Prepare for Exam	Next Class

Day3/Week 11	Exam Lab Project No. 1, design & estimate	Review Exam Project 1	Next Class
Day4/Week 11	Complete Project 1 and turn-in Cost recording keeping cost records, classifying labor cost	Lecture, Take Notes	Next Class
Day5/Week 11	Using cost data, Risk assessment, Asset utilization planning Change Orders, Claims & Back-Charges, Project Delays, Construction Meetings	Lecture, Take Notes Review Notes, Prepare for Exam	Next Class Next Class
Day1/Week 12	Review for Exam Exam	Review for Exam Review Exam	N/A
Day2/Week 12	Lab – Electrical Estimating Small Commercial	Lab – Electrical Estimating Small Commercial	Next Class
Day3/Week 12	Lab – Electrical Estimating Small Commercial Writing Proposals	Lab – Electrical Estimating Small Commercial Writing Proposals	End of Class Next Class
Day4/Week 12	Writing Proposals Due, Quiz Lab – Proposal & Estimate	Lab – Proposal & Estimate	Day5/Wk12
Day5/Week 12	Lab – Proposal & Estimate: Due	Prepare Presentation for Lab	Day2/Wk13
Day1/Week 13	Draft Resume Due Prepare Presentation for Lab	Prepare Final Resume Prepare Presentation for Lab: Due	Day1/Wk15 Day2/Wk13
Day2/Week 13	Presentation & Bid for Lab: Due		N/A
Day3/Week 13	Computerized Estimating, McCormick Systems	Handout	Next Class
Day4/Week 13	Quiz Computerized Estimating, McCormick Systems	Handout	Next Class
Day5/Week 13	Quiz Computerized Estimating, McCormick Systems	Handout	Next Class
Day1/Week 14	Quiz Lab – Computerized Electrical Estimating	Lab – Computerized Electrical Estimating	Day5/Wk14
Day2/Week 14	Lab – Computerized Electrical Estimating	Lab – Computerized Electrical Estimating	Day5/Wk14
Day3/Week 14	Lab – Computerized Electrical Estimating	Lab – Computerized Electrical Estimating	Day5/Wk14
Day4/Week 14	Lab – Computerized Electrical Estimating	Lab – Computerized Electrical Estimating: Due	Day5/Wk14
Day5/Week 14	Lab – Computerized Electrical Estimating: Due Prepare Final Resume	Final Resume Due	Day5/Wk14 Day1/Wk15

Day1/Week 15	Lab – Computerized Electrical Estimating: Prepare Proposal Presentation Final Resume Due	Lab – Computerized Electrical Estimating: Prepare Proposal Presentation	Day3/Wk15
Day2/Week 15	Lab – Computerized Electrical Estimating: Prepare Proposal Presentation	Lab – Computerized Electrical Estimating: Prepare Proposal Presentation	Day3/Wk15
Day3/Week 15	Lab – Computerized Electrical Estimating, Proposal Presentation Due	Review for Final Exam	Next Class
Day4/Week 15	Final Exam		N/A

Note. This schedule may vary depending on: unforeseeable circumstances that may arise; individual class rate of comprehension and evaluation; and at the discretion of the instructor.