NEW YORK CITY COLLEGE OF TECHNOLOGY
The City University of New York

DEPARTMENT: Electrical and Telecommunications Engineering Technology

SUBJECT CODE AND TITLE: EET1202/ET205 Electrical Drafting

COURSE DESCRIPTION: This course provides the student with the fundamental knowledge and skills involved in modern electrical drafting. Practical applications in the electrical and electronic disciplines are discussed and implemented using CAD procedures and software.

PRE-COREQUISITE: EET1102/ET100

TEXTBOOK: Hands-on Auto Cad LT
By Timothy Looney, Publisher, McGraw Hill 2005

COURSE OBJECTIVES/ COURSE OUTCOMES: Upon completion of this course using CAD software, students will posses the ability to:
1. Construct electrical, electronic, and logic block and schematic diagrams in a timely professional manner (ABET Criteria 2a, 2b, 2f, 2k).
2. Use linear, semi-log, and log-log graph paper to plot technical or experimental data. ABET Criteria 2a, 2b, 2c, 2k).
3. Draw different types of interconnecting or wiring diagrams. (ABET Criteria 2a, 2b, 2f, 2k).
4. Plan, design, and implement drawings of either single sided, or double sided PCB's (ABET Criteria 2a, 2b, 2d, 2f, 2k).

TOPICS: Topics include CAD representations of objects, projections, dimensioning, block and schematic diagrams, and wiring diagrams of basic electrical electronic and digital systems. PCB principles, layout, design, and fabrication techniques are discussed and constructed using CAD software.

CLASS HOURS: 3

CREDITS: 1

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GRADING POLICY: ET1202/ET205

Homework and class participation	50%
Midterm Exam:	20%
Final Project	30%

Letter Grade	Numerical Grade Ranges	Quality
A	93-100	4.0
A-	90-92.9	3.7
B+	87-89.9	3.3
B	83-86.9	3.0
B-	80.82.9	2.7
C+	77-79.9	2.3
C	70-76.9	2.0
D	60-69.9	1.0
F	59.9 and below	0.0

Week	Topic	Reading Assignment	Homework
1	Introduction to drafting ; Job responsibilities; Job levels in drafting; Types of companies; Tools/software, and hardware used for drawing skills required	Chapter 1 Pages 1-23	
2-3	Initial setup of the Auto Cad environment for construction of electrical drawings. Definition of a sketch versus a drawing; Basic Auto Cad commands Editing CAD objects involving length, scaling, and orientation. CAD sketch of a simple dc circuit.	Chapter 1 Pages 24-36 Pages 37-61 Chapter 2 Pages 72-86	Plate #1
4	Manipulating CAD objects; Cone vs. pyramid and prism patterns. Drawing commands using Auto Cad software; Continuation of editing commands. Quiz #1	Chapter 3 pages 105-117	Plate #2
5	Pictorial CAD representation Creating various drafting projections including isometric, and dimetric projections using Auto CAD commands	Chapter 4 Pages 133-148	Plate #3
6	Mechanical CAD ; Multiview drawings using orthographic projections Visualization techniques; Inclined surfaces; Types of lines; Scaling	Chapter 5 Pages 171-183 Pages 197-210	Plates #4
7	Mechanical Dimensioning ; Types of dimensions ; Steps to dimension a drawing.; Dimensioning rules and styles; Dimension commands using Auto CAD commands.	Chapter 6 Pages 235-255	Plates #5
8	Review for Midterm exam **Midterm Examination**		
9-10	Electrical drafting ; Block diagrams Electrical symbols; Single line diagrams, vs. schematic diagrams of a single circuit; Logic symbols and logic diagrams; Parts list		Chapter 7 Pages 291-235 Plate #'s 6-7
11	Graphing techniques using linear, semi-log and log-log graph paper. Electrical applications; The equation of a line for these graphs.	Instructor's notes	Plate #8
12	Residential and Industrial wiring diagrams.; Electrical symbols (continued) Location of switches and outlets.; One line diagrams; Ladder diagrams Riser diagrams; Auto CAD commands	Instructor's notes	Plate # 9
13	AWG Tables; Wiring diagrams; Interrupted line wiring diagrams Point-to-point and highway wiring diagrams; Harness assembly diagrams	Instructor's notes	Plate #10
14-15	Printed circuit board development using Ultiboard and Cad software Design principles; Space allocation layouts Etching process; Film and tape masters Soldering masks ; Drill drawings; Double sided PC boards.	Chapter 7 Instructor's notes	Final project to be assigned by instructor