

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

DEPARTMENT: Electrical and Telecommunications
Engineering Technology

SUBJECT CODE EET2271/ET451
AND TITLE: Circuit Analysis Laboratory

COURSE DESCRIPTION: Covers analytical and measurement techniques to evaluate a digital project. Each student is assigned an individual project, consisting of designing a circuit, bread-boarding the design and performing various tests and analyses with formal report and presentation.

PREREQUISITE: EET2171/ET351;
PRE- or COREQUISITE: EET 2162/ET 382

TEXTBOOK: Electronic Projects Design and Fabrication
Ronald A. Reis

**COURSE OBJECTIVES/
COURSE OUTCOMES:** Upon completion of this course students will possess the ability to:

1. Construct low voltage, adjustable DC power supply in a timely professional manner (ABET Criteria 2a, 2c, 2d, 2f, 2k, 2l, 2m).
2. Write a project report for the DC Power Supply. (ABET Criteria 2g, 2k).
3. Construct a digital device of student's selection. (ABET Criteria 2a, 2c, 2d, 2f, 2k, 2l, 2m).
4. Prepare a project report for the digital project. (ABET Criteria 2g, 2k).

TOPICS: Topics include mechanical layout of components for a low voltage regulated DC power supply, selection of components, their acquisition, design of a PCB and physical assembly of the project. Principles of analog and digital system troubleshooting are discussed and applied for particular projects.

CLASS HOURS: 3
CREDITS: 1
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GRADING POLICY:

EET 2271/ET 451

Working adjustable, low voltage DC power supply	25%
Report for DC power supply	25%
Working digital Project :	25%
Report for digital Project	25%

<u>Letter Grade</u>	<u>Numerical Grade Ranges</u>	<u>Quality</u>
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 ET 451 course requirements Requirement to Project Report Presentation of Schematic diagram of adjustable, low voltage DC power supply Preliminary discussion of Power supply layout Sources of components	Chapter 1	Prepare Schematic diagram drawing
2-3	Mechanical considerations in components layout. Thermal consideration. Utilitarian consideration in design of electronic devices.	Chapter 2 Chapter 8	Prepare Schematic diagram drawing Select components Acquire components
4	Laying out PCB for power supply	Chapter 6.2	Prepare PCB drawing Acquire components
5	Assembly of Power supply	Chapter 7	Assembly power supply
6	Troubleshooting flow chart for power supply Practical testing of working models Troubleshooting power supply	Chapter 5 Chapter 9	Prepare Project Report for Power Supply. Assembly power supply
7	Practical testing of working models Troubleshooting power supply Editing of Project Report for Power Supply	Chapter 10	Prepare Project Report for Power Supply. Assembly power supply
8 - 9	Practical testing of working models. Troubleshooting power supply. Selection of a digital project. Wire wrapping technology for electronic prototype construction. Editing of Project Report for Power Supply		Prepare Project Report for Power Supply.
10	Individual work with students on selected Digital Projects		Prepare Schematic diagram drawing Prepare wiring table Acquire components Prepare troubleshooting flow charts
11-15	Troubleshooting Digital Project. Final editing of Project Report.		