



NEW YORK CITY COLLEGE OF TECHNOLOGY

THE CITY UNIVERSITY OF NEW YORK

Department of Computer Engineering Technology

300 Jay street, Brooklyn, NY 11201

Course Syllabus: EMT 1240P – Introduction to Computer Engineering Technology

Instructor: Dr. Y.Wang

Meeting dates and room in Fall 2016 (Aug 25-Dec 20)

Lecture: Monday 8:30-11:220AM (V615)

Lab: Monday 11:30AM-2:00PM (V 613)

Office hours: Monday 2:00PM-3:00PM & Wed 11:00-12:30PM

Credits: 4 Contact Hrs: 6 Class Hrs: 3 Lab Hrs: 3 Recitation Hrs: 0

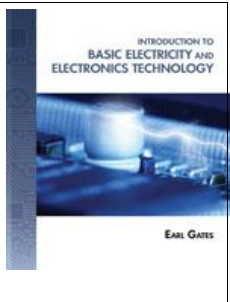
This course is: Required Elective Selective Elective

Catalog Course Description:

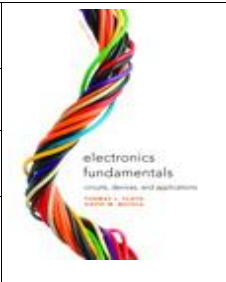
Introduction to basic electrical theory, semiconductor devices, digital electronics, and applications. Topics cover key fundamentals of electrical quantities, digital logic, and digital computer basics. Hands-on laboratory experience reinforces the students learning and provides opportunity to transfer theory learned in lecture to practical applications.

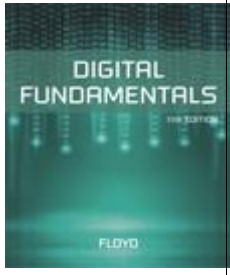
Prerequisites: CST 1100

Text book, title, author and year:

Text / Ref. book	Introduction to Basic Electricity and Electronics	
Author	Gates, Earl D	
Publisher	Cengage Learning @2014	
ISBN	ISBN-10: 1133948510 ISBN-13: 9781133948513	

Reference books

Ref. book 1	Electronics Fundamentals: Circuits, Devices & Applications, 8/E	
Author	Thomas L. Floyd, David M. Buchla	
Publisher	Prentice Hall @2010	
ISBN	ISBN-10: 0135072956 ISBN-13: 9780135072950	

Ref. book 2	Digital Fundamentals, 11/E	
Author	Thomas L. Floyd	
Publisher	Prentice Hall @2015	
ISBN	ISBN-10: 0132737965 ISBN-13: 9780132737968	

Program Education Objectives:

Please refer to <http://www.citytech.cuny.edu/academics/deptsites/cetech/btech.aspx>

Program Student Outcomes:

Please refer to <http://www.citytech.cuny.edu/academics/deptsites/cetech/btech.aspx>

General Education Learning Outcomes:

- Develop discipline-specific knowledge and skills.
- Acquire and use tools needed for communication, inquiry, and analysis.
- Integrate knowledge and application within and across disciplines.

Course Learning Outcomes:

1. Demonstrate basic knowledge how electrical circuits, semiconductor devices, and digital electronic systems fit into the context of professional careers, ethics, societal needs, and environmental concerns.
2. Demonstrate basic knowledge relating to direct current circuits (DC), semiconductor devices and digital electronics.
3. Demonstrate knowledge of the Ohm's Laws, Kirchhoff's Laws, and techniques to apply in series circuit and parallel circuit.
4. Demonstrate basic knowledge of diode biasing.
5. Understand combinational logic circuits and sequential logic circuits.
6. Apply knowledge of logic gates, Boolean Algebra, K-Map, and DeMorgan's Theorems in digital circuits.
7. Utilize the knowledge of mathematics and science to gain an understanding of the operation of electrical and electronics systems.
8. Reinforce theory and techniques taught in the classroom through experiments in the laboratory.

Week	Lecture Topic (EMT 1240P) Instructors reserve the right to modify the outline anytime based on the feedback.
1	Course outline, classroom conduct, academic integrity, attendance, and grading policy. A brief history of electricity, digital, and analog devices. Safety. Electrical quantities and units and measurements. Chapter 7, 10 & 11 (Text book)
2	Voltage, current, and resistance. Resistor color codes and standard resistor values. The electrical circuit and switches. Ohm's law for calculating current, voltage, and resistance in DC circuit. Power in an electric circuit. Chapters 12,13-1~13.5, 14-1 ~14-4, 16-1(Text book)
3	Connecting resistors in series. Current in a series circuit. Voltage sources in series. Kirchhoff's voltage law. Application of Ohm's law in series DC circuit. Chapters 13-6, 14-5, 17-1 (Text book)
4	Connecting resistors in parallel. Voltage in a Parallel Circuit. Kirchhoff's Current Law. Application of Ohm's Law in parallel DC circuit. Chapters 13-7, 17-2 (Text book)
5	Exam 1
6	Introduction to semiconductors. Chapters 29 (Text book)
7	Digital concept. Binary Digits, Logic Level, and Digital Waveform. Overview of Basic Logic Functions and Integrated Circuits. Number systems and codes. Conversion between number systems Chapter 41 (Text book)
8	Midterm
9	Logic gates and circuit: AND, OR, NAND, NOR. XOR, XNOR Chapter 42 (Text book)
10	Boolean algebra, DeMorgan's theorem, and reduction techniques (Karnaugh Maps). Chapter 43 (Text book)
11	Functions of Combinational Logic, Adder and Decoder. Chapter 45 (Text book)
12	Exam 2
13	Latches, Flip-Flops, Registers and applications Chapter 44
14	Counters and application Chapter 45
15	Final Exam

- Computer Usage:** Limited
- Calculus Usage:** Limited
- Library Usage:** Students are encouraged to use the library as a supplement to the lectures and textbook.
- Classroom Policy:** Any activity that threatens the CityTech's academic integrity will result in a disciplinary action. Such activities include, but are not limited to, inside or outside classroom cheating, copying others work in preparation of your own, giving or receiving information during quizzes, tests and final examination.

Classroom Conduct: The classroom expects you to observe basic common courtesies such as manners of address, not interrupting, not talking in class, etc. No one has any right to engage in disruptive behavior in the classroom. If you must leave class early, please let an Instructor know at the beginning of the period. Sitting near an exit will minimize the disturbance when you leave. Obviously, you may leave at any time or impending sickness or emergency. Otherwise please do not leave the classroom until the class is dismissal. **Also, if you have a cellular phone, please turn to vibrating or silence mode.** Thanks for your cooperation.

Academic Integrity: Students and all others who work with information, ideas, texts, images, music, inventions, and other intellectual property owe their audience and sources accuracy and honesty in using, crediting, and citing sources. As a community of intellectual and professional workers, the College recognizes its responsibility for providing instruction in information literacy and academic integrity, offering models of good practice, and responding vigilantly and appropriately to infractions of academic integrity. Academic dishonesty is prohibited in The City University of New York and is punishable by penalties, including failing grades, suspension, and expulsion.

Attendance: Under CUNY mandate, attendance in EACH class is REQUIRED and attendance will be taken at each class meeting. You are allowed a maximum of 2 absences. If you exceed that number, you may receive a WU grade. Excessive lateness (more than 15 minutes) will be considered to be an absence from that class meeting. Attendance will be counted as portion of your course grade. Show the doctor's note or family emergency note, otherwise **each absent will be counted as 2% as portion of the course grade.**

The assignments build progressively; it is to your advantage to attend each and every class meeting. New material is presented in every class. You are responsible for all matters treated in class, whether you are there or not. This includes the lecture, class discussion, handouts, lab (if required), announcements about changes in the course outline, and announcements about changes in test and final exam dates.

Homework: Problems will be assigned regularly at the lectures. Assignment will be announced at the classroom and CUNY Blackboard. **Any late**

homework or project submission will cause 50% deduction of the original grade. Your homework must be submitted to CUNY Blackboard on time. No homework will be accepted after the semester ends.

Labs: Labs will be given regularly. Lab reports will be graded based on the project (lab) report formative. Grading of lab reports will take into account the quality of the written presentation (logical statement of objectives and conclusions, proper terminology, grammar, spelling, etc.) **Your lab report must be submitted to CUNY Blackboard on time. Any late submission will cause 50% deduction of the original grade.** Each Lab grade will be based on the lab report and the activities you involved. No lab report will be accepted after the semester ends.

Quiz: Quizzes will be given regularly. **There is NO make-up quiz.**

Examination: There will be one in-class mid-term examinations. The examination date will be announced at later time. **There is NO make-up examination.**

Final: Final examination will be given on **last week of meeting.** A final date will be announced at later time. **There is NO make-up final examination.**

Grading: Your grade in this course will be based on attendance/participation, homework, quizzes, examinations, and a cumulative final:

Attendance/Participation	5%
Homework and monthly exams	20%
Labs	30%
Midterm Exam	20%
Final Exam	25%

Special Announcement: The course will be failed if any of the following conditions apply:

- Failing to take the midterm or final
- Failing to pass in the lab

Grading Scale:	A=100%-93%	A-=90%-92.9%	B+=89.9%-87%
	B=86.9%-83%	B-=82.9%-80%	C+=79.9%-77%
	C=76.9%-70%	D=69.9%-60%	F=59.9% and below

Student Success Strategies:

- ❖ Do not get behind; stay current with reading, homework and lab assignments.
- ❖ Do all assignments completely and on time.
- ❖ Actively participate in class discussions.
- ❖ Each week review the previous lecture's notes, write down any questions you have, and bring them to class.
- ❖ Retain your graded assignments in case there are any discrepancies in the instructor's records.
- ❖ Ask for help as soon as you need it; do not wait until it is too late. Student tutoring support is available in the Tech Learning Center.

Withdrawal Date: Check for College Academic Calendar

Students who are failing should consider officially withdrawing on or before the Withdrawal Date to avoid an F or WU grade

Lab reports will be assessed according to the following rubrics:

4 – Exceeds requirements:

3 – Meets requirements:

2 – Progressing toward requirements

1 – Below expectations

Achievement of Objectives:

4 – Goes beyond specified objectives

3 – Achieves all specified objectives completely

2 – Achieves some objectives, or partially achieves all objectives

1 – Does not achieve any of the specified objectives

N/A – Could not achieve objectives – equipment not functioning

Use of Equipment and Materials:

4 – Uses equipment and materials in creative ways to go beyond required performance

3 – Uses equipment and materials as required, with little or no help

2 – Uses most equipment and materials as required; needs substantial help

1 – Does not use equipment and materials as required, even with help

Factual Information Presented:

4 – Goes beyond requested information

3 – All requested information provided correctly

2 – Most of the requested information provided correctly; some information missing or incorrect

1 – Little or no information provided, or information is seriously flawed

Communication of Results:

4 – Clearly relates results to underlying principles; provides extra breadth or depth of discussion

3 – Clearly relates results to underlying principles

2 – Explanation of results is limited; some errors in writing

1 – Little or no explanation of results, or serious flaws in writing

Notes: The Instructor reserves the right to modify this outline anytime based on feedback from classroom
All email communications must be from a CityTech email address, the subject line must include
“EMT 1240P” and your section number.