Principles of Electrical Engineering I

Course number and name

EE051IU/IT068IU – Principles of Electrical Engineering I

Credits and contact hours

Credit hours: 3

Instructor's or course coordinator's name

Mr. Tran Van Su

Textbooks and Other Required Materials:

J. W. Nilsson and S. A. Riedel, Electric Circuits, 9th Ed, PEARSON, 2011.

Class notes.

Specific course information

a. brief description of the content of the course (catalog description)

This course covers the following topics: Circuit elements; Independent sources; Dependent sources; Circuit analysis in DC and AC steady state; Operational amplifiers; Power Computations; Two-port Circuits; Balanced three-phase circuits. Special seminar(s)

b. **Pre-requisite:**
MA001IU – Calculus 1

Co-requisite:
EE052IU – Principle of Electrical Engineering I Laboratory.

c. ***indicate whether a required, elective, or selected elective course in the program***

This is a required course.

Specific goals for the course

Upon the successful completion of this course students will be able to:

- Apply Knowledge of Mathematics, Science, and Engineering for solving electrical engineering circuit.
- Apply critical and analytic thinking to the principles of electrical engineering process;
- Demonstrate creative thinking in the design of electrical engineering solutions;
- Have ability to engage life-long learning.
- Have an opportunity to participate in seminars to understand the impact of electrical engineering solutions in a global, economic, environmental and social context.

Course grading policies:

Homework Problem, Quizzes, Class conduct, and Project (30%)

Mid-term exam (30%)

Final Exam (40%)

The suspension of final examination will be applied for those who will be absent more than 3 times (including on-line class)

Lecture Topics:

- Introduction to EE051IU: Circuit variables
- Simple resistive circuits
- Techniques of circuit analysis
- The operational amplifier
- Inductance, capacitance and mutual inductance
- Sinusoidal steady-state analysis
- Sinusoidal steady-state power calculations
- Two-port Circuits
- Balanced three-phase circuits: three-phase voltage sources, analysis of the wye-wye and wye-delta circuit, power calculation and measurements
- Seminars given by specialists/scientists from industries/universities; IU – library
- Project Presentation
- Review / Questions & Answers

Lecture hours: depends on semester calendar.
Office hours: Monday afternoon or by appointment at 02-108.

Contact information: tvsu@hcmiu.edu.vn

Homework problems are assigned bi-weekly collected and graded.

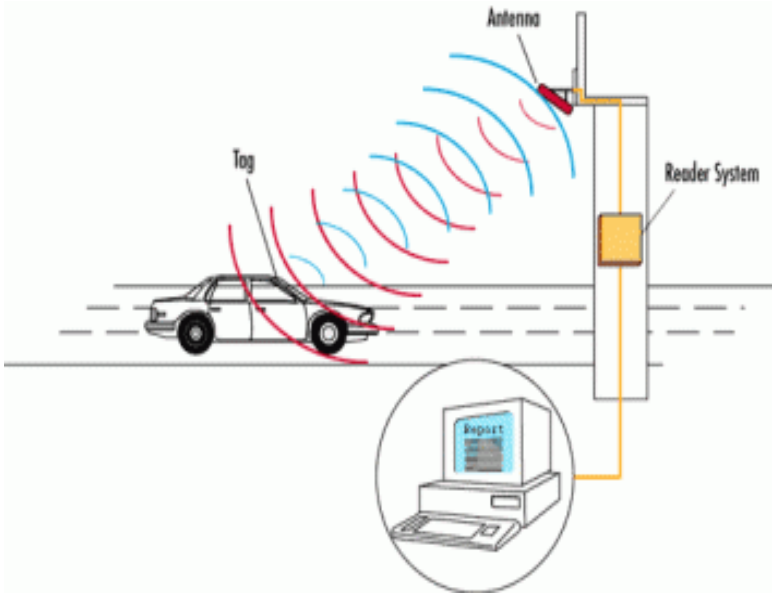
All assignments need to be submitted on the due date. Otherwise, a penalty of 20% per day can be considered for each assignment.

Some Applications
of
Discipline of Electrical Engineering

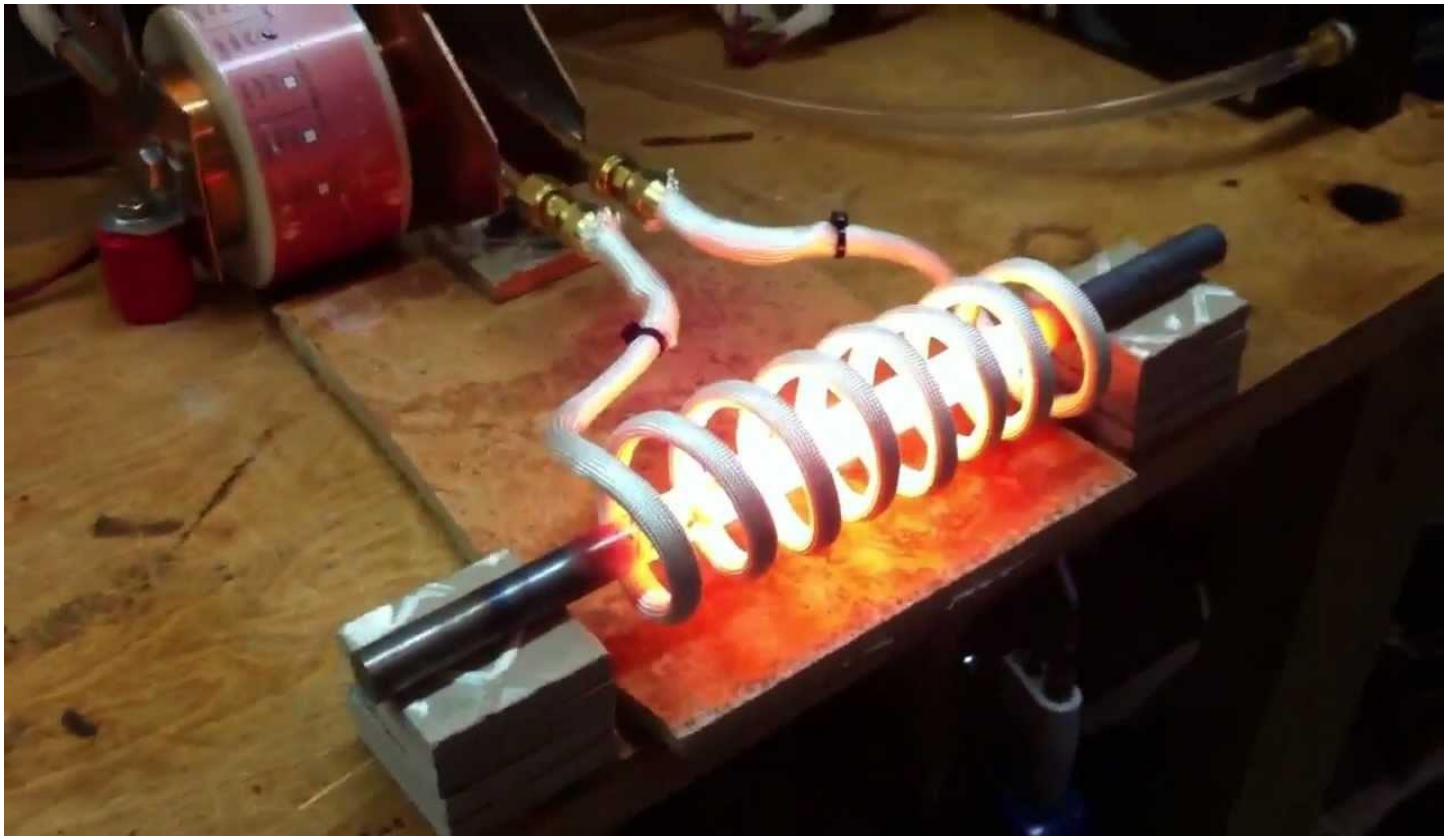
RFID Technology

Library

Transportation

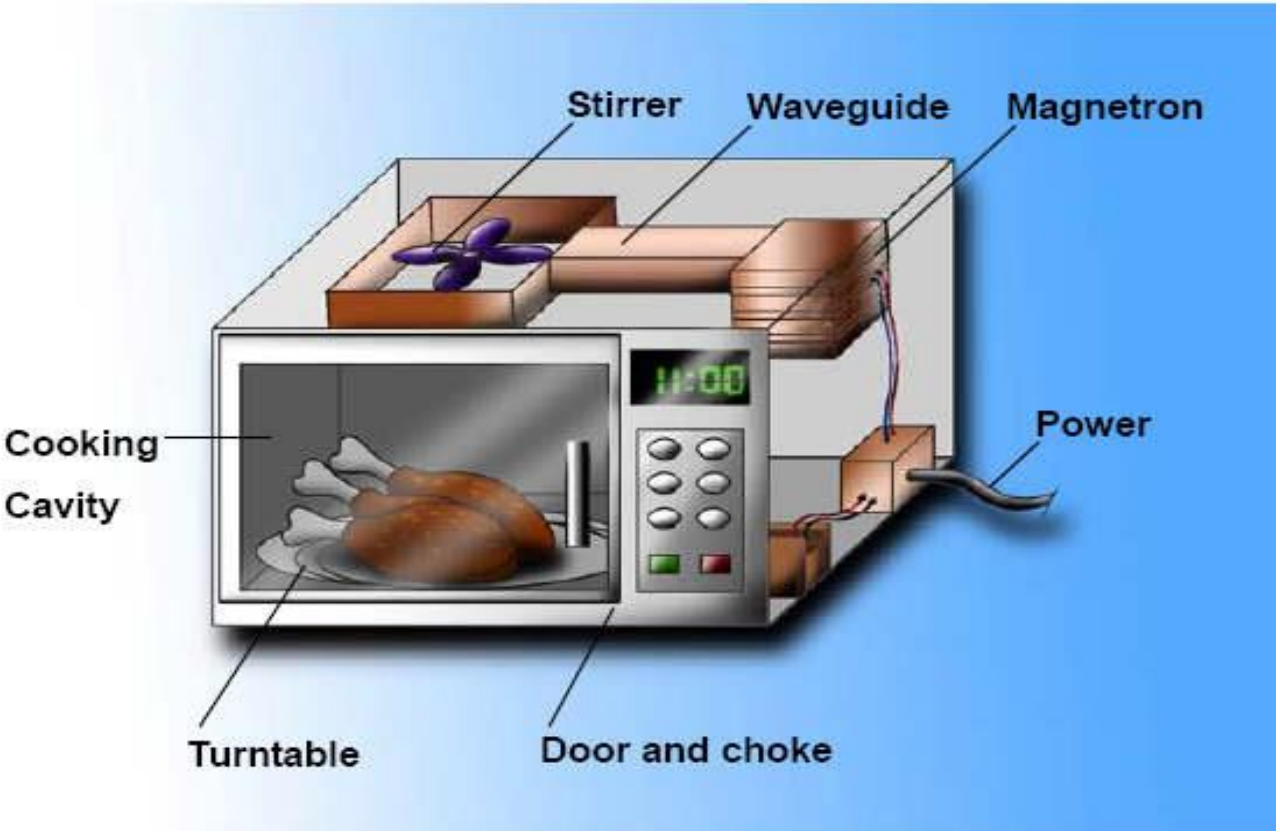


Induction Heating



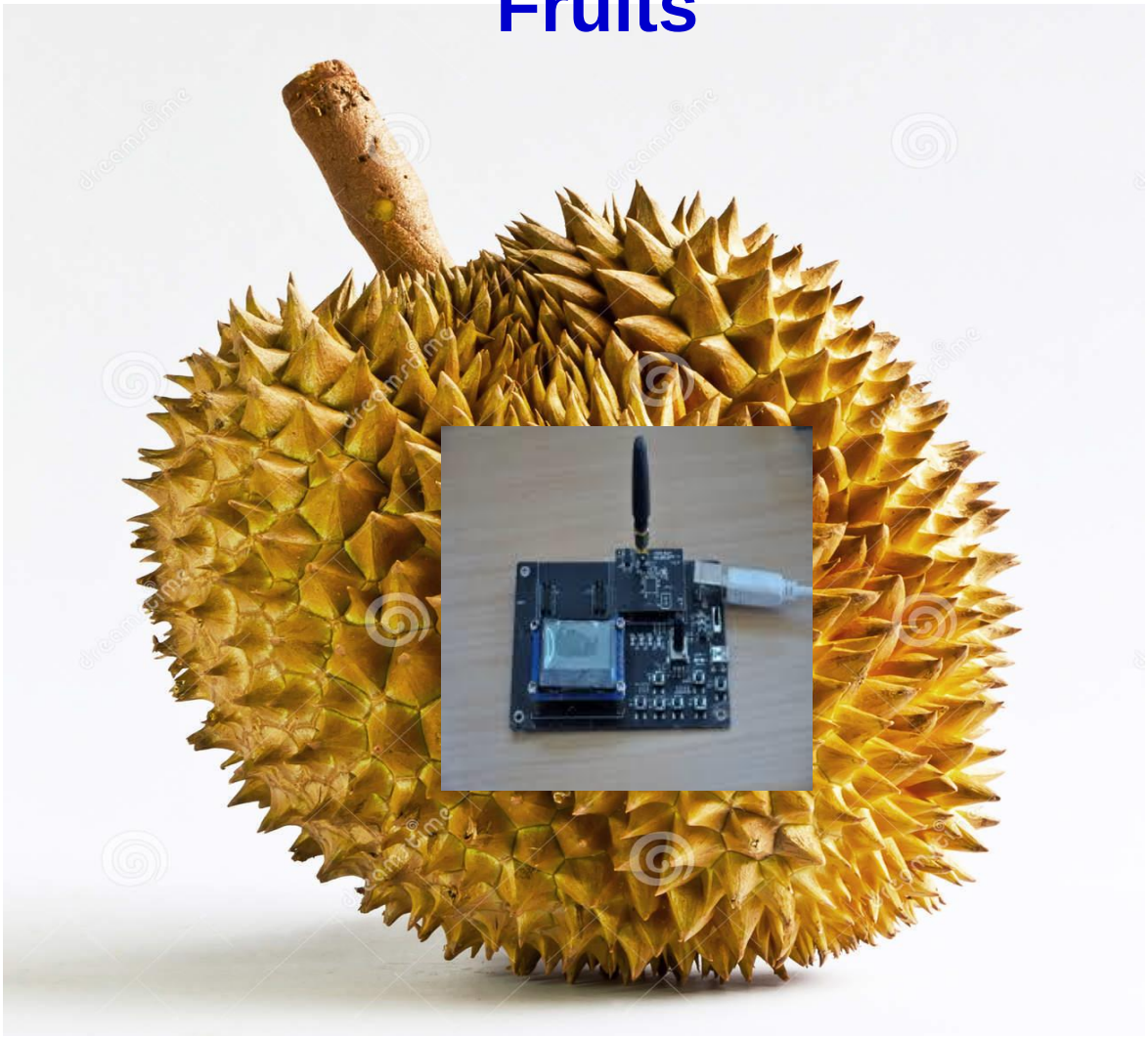
Hardening metallic materials

Microwave Heating



Microwave Oven

Monitoring the Maturity of Fruits



Wireless Sensor Network applied for the maturity of durians

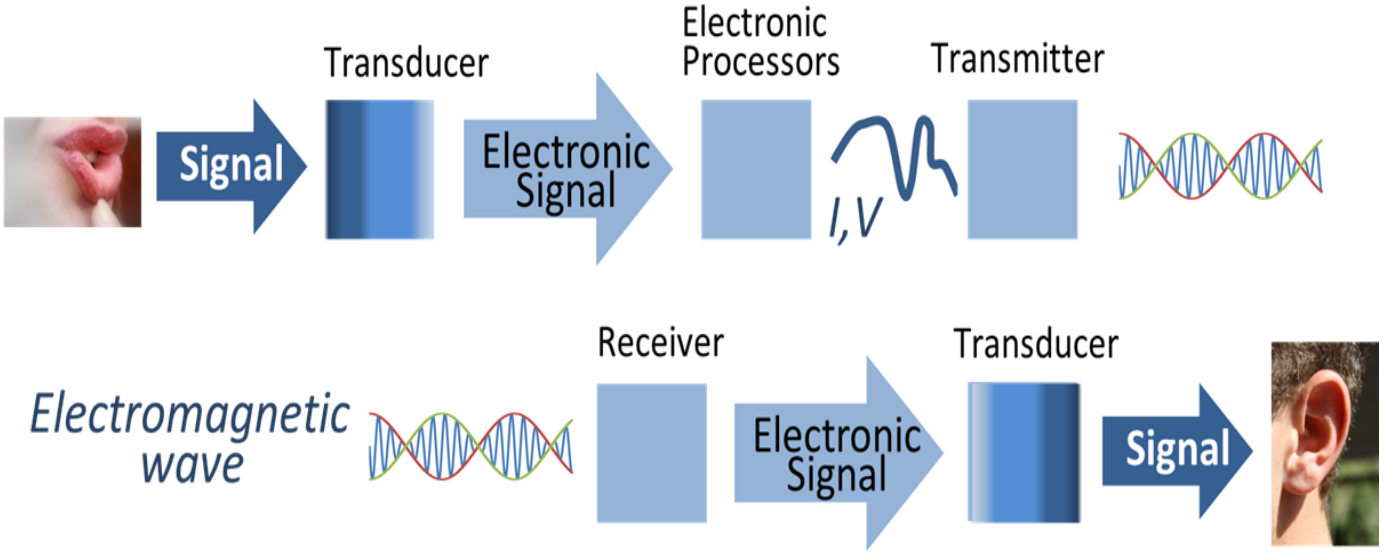
Unmanned Aerial Vehicle - UAV

Quadcopter

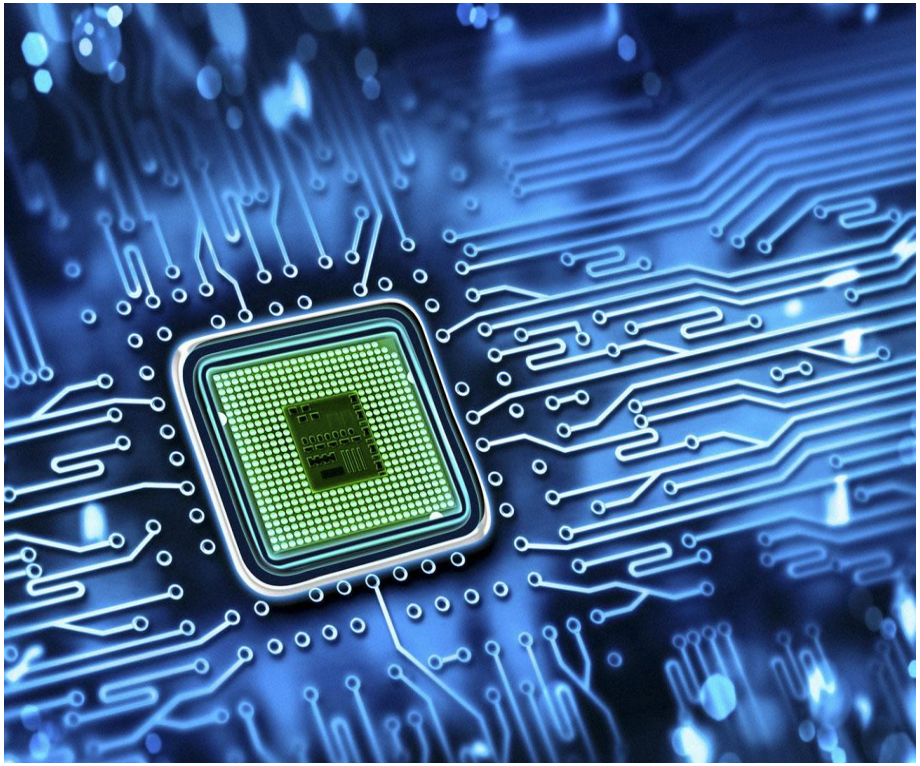
SmartPhones

Game Box

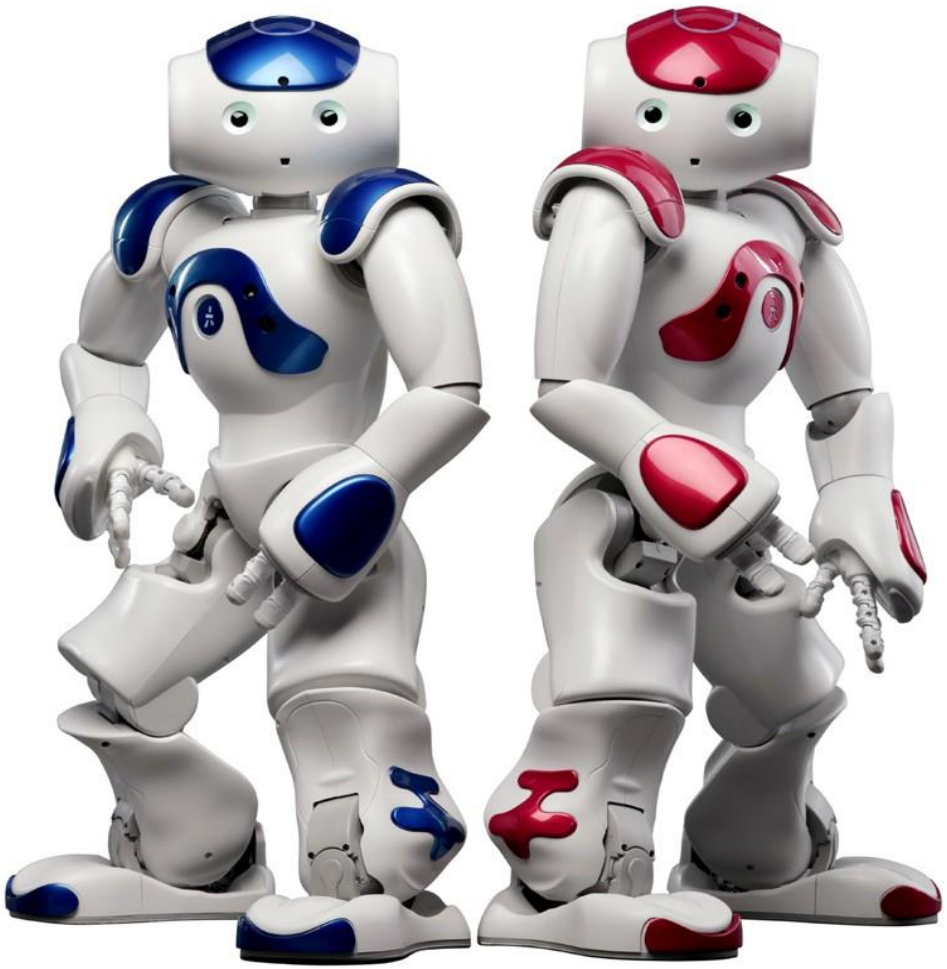
Communications Systems



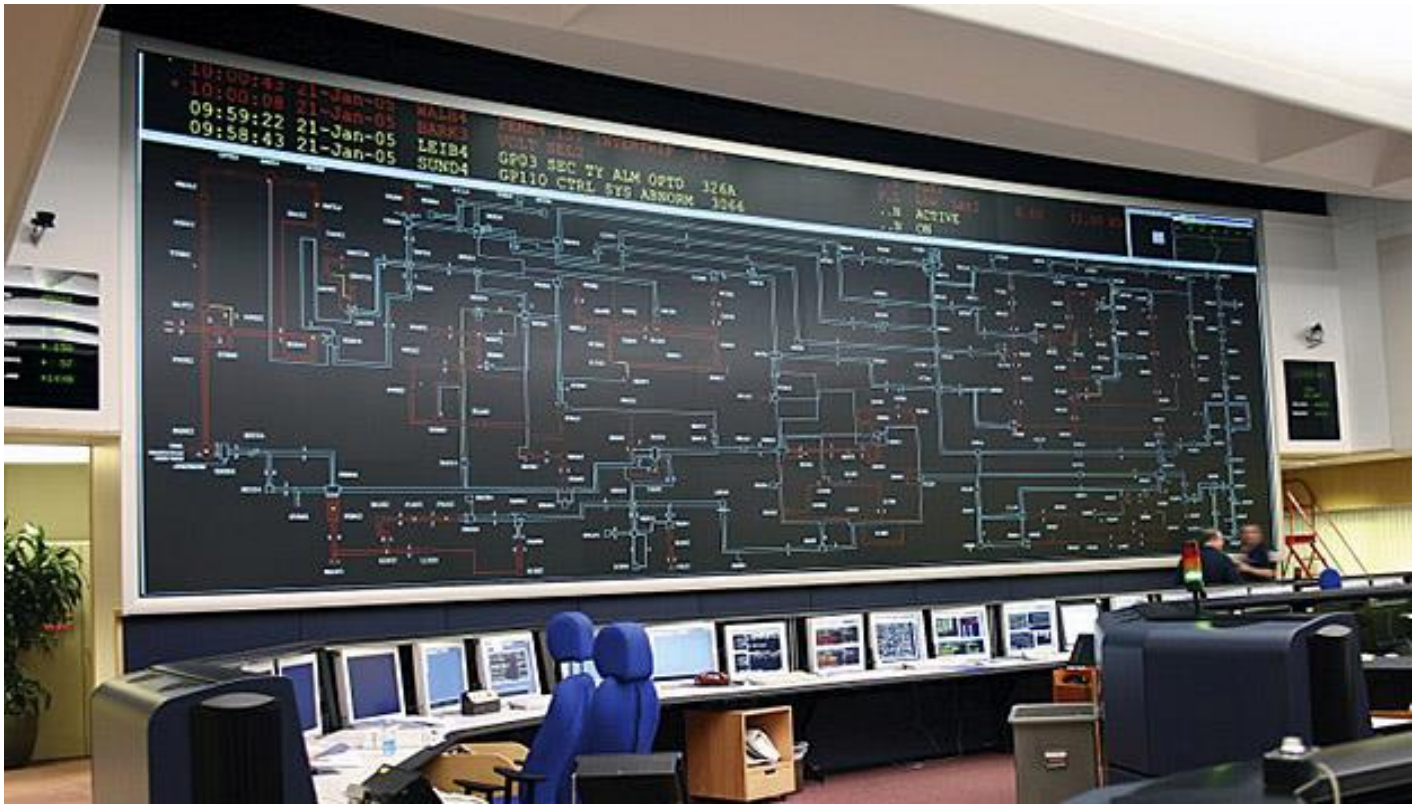
IC Design



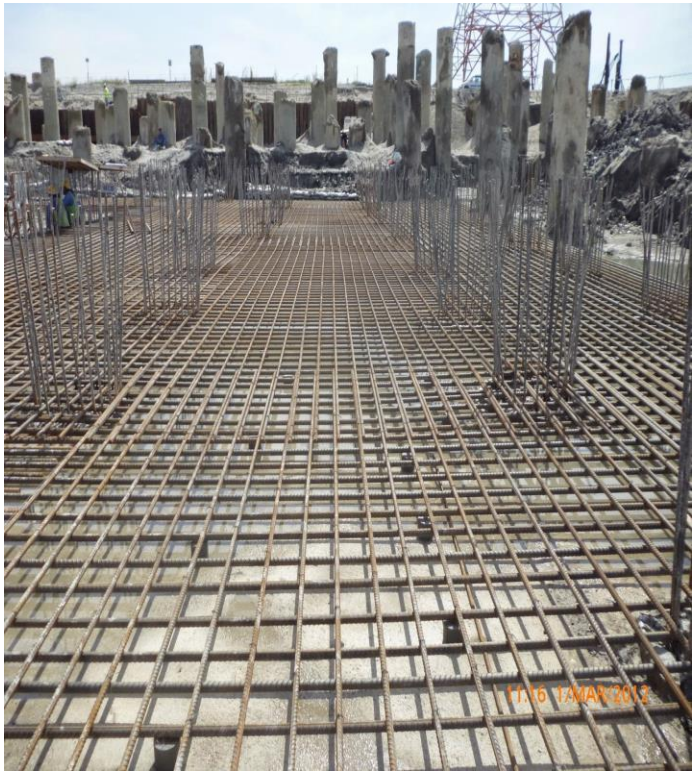
Robot

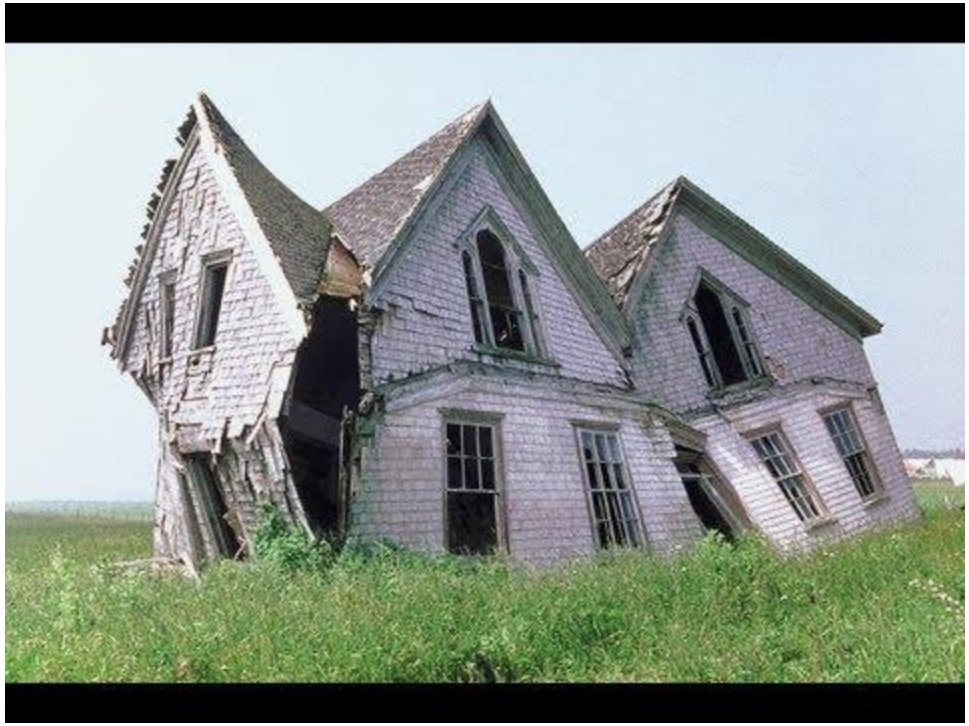


Supervisory Control and Data Acquisition - *SCADA*



Principles of EE1 is the Foundation of Electrical Engineering





With a bad foundation, the building collapses