THE INTERNATIONAL UNIVERSITY (IU) – VIETNAM NATIONAL UNIVERSITY - HCMC

School of Electrical Engineering

Principles of Electrical Engineering I

1. Course number and name

EE051IU – Principles of Electrical Engineering I

2. Credits and contact hours

Credit hours: 3

3. Instructor's or course coordinator's name

Dr. Linh Mai

4. Textbooks and Other Required Materials:

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

Class notes.

Reference:

1. R. C. Dorf and J. A. Svoboda, Introduction to Electric Circuits, 9th Ed, John Wiley & Sons, 2014.

5. 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.

6. Specific goals for the course

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

1. Understand knowledge of Mathematics, Science, and Engineering for solving electrical engineering circuit
2. Apply critical and analytic thinking to the principles of electrical engineering process
3. Demonstrate creative thinking in the design of electrical engineering solutions

4. Have ability to engage life-long learning and have an opportunity to participate in seminars to understand the impact of electrical engineering solutions in a global, economic, environmental and social context

b. The relationship between Course Outcomes (1-4) and Student Outcomes (1-7) is shown in the following table:

	1	**2**	**3**	**4**	**5**	**6**	**7**
Course Outcomes No.1	x						
Course Outcomes No.2		x			x		
Course Outcomes No.3	x				x		
Course Outcomes No.4	x	x					
Total (%)	40	30			30		
ABET Evidences	HWs & Quizzes Exam Project Presentation	Exam Project Presentation			HWs & Quizzes Exam Project Presentation		

Course grading policies:

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

Mid-term exam (30%)

Final Exam and Term-project (40%)

Note: Term-projects will be assigned after the Mid-term exam period.

7. **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
- Term project presentation & Review

Lecture hours: depends on semester calendar.
Office hours: based on detailed semester calendar, or by appointment @ O2.206
Contact information: mlinh@hcmiu.edu.vn or mlinh2009@gmail.com

Independent Learning Experiences:

Homework problems are assigned bi-weekly collected and graded.

Course Policies:

Assignments: Students must use the official template of SEE to write their reports. All assignments need to be submitted on the due date. Otherwise, a penalty of 20% per day can be considered for each assignment.

Policy on dishonesty: Students are expected to do their own work at all times. Any evidence of plagiarism or cheating will be treated as grounds for failure in the class.

Link to download materials: **http://blackboard.hcmiu.edu.vn/**

Prepared by: Mai Linh