# ❖ 2020F-ENGR_0031: Electric Circuits

## Instructor : Jeungphill Hanne

## ❖ Outline

**1. SCUPI 2020 Fall Academic Calendar**

- Academic Calendar : Midterms & Final etc.
- My Schedule : Office hours etc.

**2. Course Introduction**

- Course information
  - Subject, Text book, Lecture Hour, Office hour, Course website, etc.
- Course Objective & Scope, Course Learning Key Points
- Course Grading & Tentative Course Schedule

# 1. SCUPI 2020 Fall Academic Calendar

- **Academic Calendar : Midterms & Final etc.**

**SCUPI Academic Calendar for 2020-2021 Fall**

| | Sept. | | | | Oct. | | | | Nov. | | | | Dec. | | | | Jan. | | | | Feb. | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Monday** | 7 | 14 | 21 | 28 | 5 | 12 | 19 | 26 | 2 | 9 | 16 | 23 | 30 | 7 | 14 | 21 | 28 | 4 | 11 | 18 | 25 | 2 | 9 | 16 | | | |
| **Tuesday** | 8 | 15 | 22 | 29 | 6 | 13 | 20 | 27 | 3 | 10 | 17 | 24 | 1 | 8 | 15 | 22 | 29 | 5 | 12 | 19 | 26 | 3 | 10 | 17 | | | |
| **Wednesday** | 9 | 16 | 23 | 30 | 7 | 14 | 21 | 28 | 4 | 11 | 18 | 25 | 2 | 9 | 16 | 23 | 30 | 6 | 13 | 20 | 27 | 4 | 11 | 18 | | | |
| **Thursday** | 10 | 17 | 24 | 1 | 8 | 15 | 22 | 29 | 5 | 12 | 19 | 26 | 3 | 10 | 17 | 24 | 31 | 7 | 14 | 21 | 28 | 5 | 12 | 19 | | | |
| **Friday** | 11 | 18 | 25 | 2 | 9 | 16 | 23 | 30 | 6 | 13 | 20 | 27 | 4 | 11 | 18 | 25 | 1 | 8 | 15 | 22 | 29 | 6 | 13 | 20 | | | |
| **Saturday** | 12 | 19 | 26 | 3 | 10 | 17 | 24 | 31 | 7 | 14 | 21 | 28 | 5 | 12 | 19 | 26 | 2 | 9 | 16 | 23 | 30 | 7 | 14 | 21 | | | |
| **Sunday** | 13 | 20 | 27 | 4 | 11 | 18 | 25 | 1 | 8 | 15 | 22 | 29 | 6 | 13 | 20 | 27 | 3 | 10 | 17 | 24 | 1 | 8 | 15 | 22 | | | |
| **SCU Week** | **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** | **9** | **10** | **11** | **12** | **13** | **14** | **15** | **16** | **17** | **18** | **19** | **20** | **21** | **22** | **23** | **24** | | | |
| **SCU Term** | 2020 Fall Teaching Weeks | | | | | | | | | | | | | | | | | | Final Weeks | | Winter Recess | | | | | | |

**Notes:**
Registration:
Make-up Exams: September 3 ~ 4
Classes begin: September 7

1st Midterm

2nd Midterm

Final

*This schedule is preliminary!!*

# 1. SCUPI 2020 spring Academic Calendar

- **My Schedule : Office hours (To be announced)**

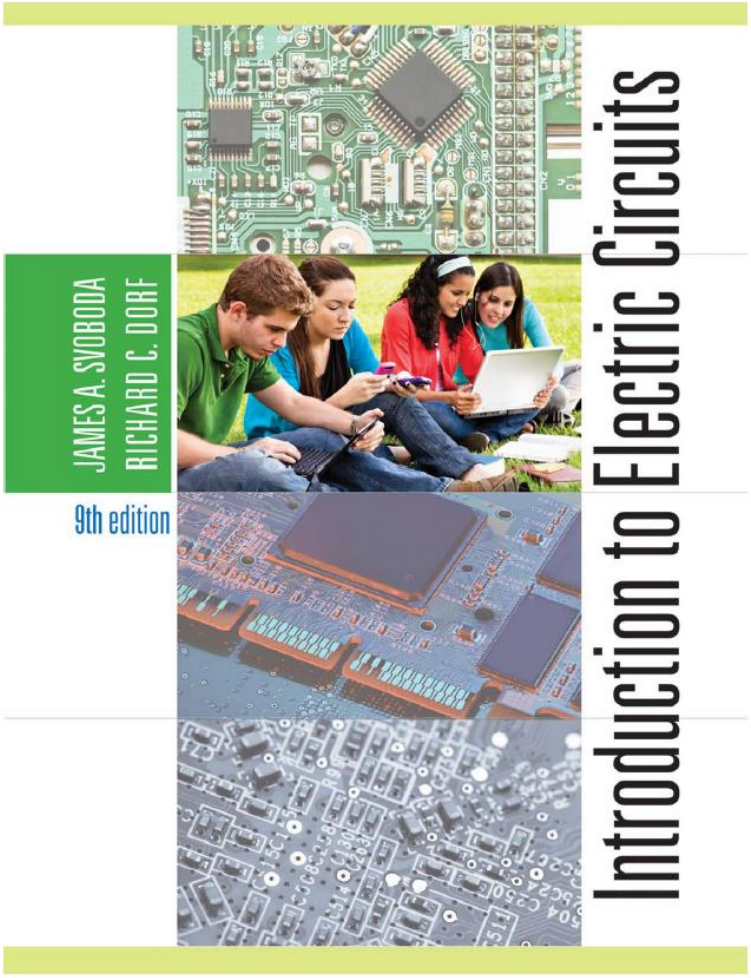
| 2020-2021 Fall Semester Course Schedule | | | | | |
|---|---|---|---|---|---|
| **Class time** | **Monday** | **Tuesday** | **Wednesday** | **Thursday** | **Friday** |
| **08:15-09:00** | | | | | |
| **09:10-09:55** | | | | | |
| **10:15-11:00** | | **Physics II 03<br>3-310** | **Physics II 02<br>3-310** | **Physics II 03<br>3-310** | **Physics II 02<br>3-310** |
| **11:10-11:55** | | **Physics II 03<br>3-310** | **Physics II 02<br>3-310** | **Physics II 03<br>3-310** | **Physics II 02<br>3-310** |
| **Lunch Break** | | | | | |
| **13:50-14:35** | **Electric Circuit 01<br>3-310** | **Electric Circuit 02<br>3-310** | | | |
| **14:45-15:30** | **Electric Circuit 01<br>3-310** | **Electric Circuit 02<br>3-310** | | | |
| **15:40-16:25** | **Electric Circuit 01<br>3-310** | **Electric Circuit 02<br>3-310** | | | |
| **16:45-17:30** | | | | | |
| **17:40-18:25** | | | | | |

*But, you can come to my office anytime when I am in my office ^^*

# 2. Course Introduction

## • Course information

- **Electric Circuits**
  - Learn the basics of Electric Circuit, and the systematic approaches in obtaining and designing the Circuit properties
- **Text Book**
  - Introduction of Electrical Circuits, 9th Ed. Svoboda and Dorf, 2014 (国际学生版)
  - ISBN 978-1-119-54657-3, **WILEY**
- **Lecture**
  - Instructor : Jeungphill Hanne, PhD
    jeungphill.hanne@scupi.cn
  - Time : Mon.(13:50-16:25),or Thues. (13:50-16:25)
  - Office Hour : To be announced.
  - Office : 3-321A @ Zone 3
- **TA :** Tim, and Daisy
  - Office Hrs : To be announced.
- **Course Format**
  - Lecture, and Active Participation ( i.e. Quiz, ***Quiz Presentation***, etc.)
- **Course Grading**
  - Two Midterms, Final, Homework, Quiz, and Attitude (ex. Attendance, Engagement, Punctuality for HW, etc.)



# 2. Course Introduction

## • Course Scope & Objective

- Objective : Understand the basic Electric Circuits, Systematically Solving Electrical properties and eventually obtaining an ability to design a simple Electric Circuit.
- Scope : An advanced Course based on “Electricity & Magneticity” of the Physics 2 course
  → Required : **Basic Concepts (**the Physics 2 course) + **Some mathematical approaches!**
  1. Steady State Circuit : Constant Sources (Voltage, Current), Resistors, Op Amp
     → Chap 1 ~ Chap 6 **: Not much for Math ! (Just simple Matrices)**
  2. Time dependent Circuit : 1+ Variable Sources (Voltage, Current), Capacitors, Inductors
     → Chap 7 ~ Chap 13 : **1st, 2nd Order Differential Eq.. Frequency Domain Analysis (AC)**
  3. A Mathematical tool to tackle **Differential Equation**
     → Chap 14 ~ Chap 16 : **Mathematical Transformation(Laplace, Fourier)**

## • Course Learning Key Points

**- Systematically and Mathematically Formularize Concepts and Results of Electric Circuit**
→ Can Assist to solve to Electrical Properties Easily and Quickly, and to design a New Circuit!
(So, Assume Concepts and Results are already familiarized!!, and Also Some Math!

## • Course Grading

- Grading Components : HW(15%), Quiz (10%), Midterm I (23%), Midterm II (23%), Final (24%) and Attitude(5% : Attendance, Engagement, Punctuality for HW, etc.)

*Tests are not accumulative, but might overlap a little bit !*

## • Tentative Course Schedule

| Week | ENGR_0031(Electric Circuits) | Topics | Assignment |
|---|---|---|---|
| Week 1 (9/07-9/13) | Introduction | **Syllabus** | |
| Week 2 (9/14-9/20) | Chap1 | **Electric Circuit Variables** | HW1 |
| Week 3 (9/21-9/27) | Chap2 | **Circuit Elements** | HW2 |
| Week 4 (9/28-10/04) | Chap 3 | **Resistive Circuits** | HW3 |
| Week 5 (10/05-10/11) | Chap 4 | **Analysis of Resistive Circuits** | |
| Week 6 (10/12-10/18) | Chap 4 & **Mid Term 1** | | HW4 |
| Week 7 (10/19-10/25) | Chap 5 | **Circuit Theorems** | HW5 |
| Week 8 (10/26-11/01) | Chap 5 & Chap 6 | **The Operational Amplifier** | |
| Week 9 (11/02-11/08) | Chap 6 | | HW6 |
| Week 10 (11/9-11/15) | Chap 7 | **Energy Storage Elements** | HW7 |
| Week 11 (11/16-11/22) | Chap 8 | **RL and RC Circuits** | |
| Week 12 (11/23-11/29) | Chap 8 | **RLC Circuits** | HW8 |
| Week 13 (11/30-12/6) | Review & **Mid Term 2** | | |
| Week 14 (12/7-12/13) | Chap 9 | **RLC Circuits** | |
| Week 15 (12/14-12/20) | Chap 9 | | HW9 |
| Week 16 (12/21-12/27) | Chap 10 | **Sinusoidal Steady-State Analysis** | HW10 |
| Week 17 (12/28-1/04) | Chap 10 &Chap 11 | **AC Steady-State Power** | |
| Week 18 (1/05-1/11) | **Final week** | | |