

Introduction to Biomedical Engineering: Fall 2023

Time and Location:

Thursday PM 1:10~4:00 @ EC3010

Instructor:

莊子肇, Associate Prof.

Office: EC8006, Dept. of Electrical Engineering

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Office hour: Mon PM2-4; Tue PM 2-4 (by appointment)

Prerequisites:

普通物理學、電子學、信號與系統

Textbooks/References: 請遵守智慧財產權觀念，不可非法影印

“Introduction to Biomedical Engineering”, John Enderle and Joseph Bronzio, Academic Press 2011 (3rd edition)

“Medical Instrumentation: Application and Design”, John G. Webster and Amit J. Nimunkar, Wiley 2020; (5th edition)

“Medical imaging signals and systems”, Jerry Prince and Jonathan Links, Pearson Prentice Hall 2014 (2nd Edition)

Google Classroom Code: **vtv22a2**

<https://bmilab.ee.nsysu.edu.tw/lab/course.html>

(Class notes and news are also released here.)



Schedule:

9/7	Introduction
9/14	Bioelectric phenomenon
9/21	Biopotentials
9/28	Biopotentials
10/5	Biomedical sensors
10/12	Biopotential amplifiers

10/19	Biosignal processing
10/26	Midterm
11/2	Circulatory system: Blood pressure and sound
11/9	Circulatory system: Flow and volume of blood
11/16	Respiratory system
11/23	Respiratory system
11/30	Medical imaging (I): X-ray and CT
12/7	Medical imaging (II): Nuclear medicine and ultrasound
12/14	Medical imaging (III): Magnetic resonance imaging
12/21	Final

Grading:

Homework	40%
Midterm	30%
Final	30%