

Introduction to Biomedical Engineering: Spring 2018

Time and Location:

Thursday PM 1:10~4:00 @ EC3009

Instructor:

莊子肇, Associate Prof.

Office: EC8006, Dept. of Electrical Engineering

Phone: 07-525-2000 ext. 4196

Email: chuang@mail.ee.nsysu.edu.tw

Office hour: Mon PM 2-4; Wed 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, Wiley 2009; (4th edition)

※以上兩本書籍國內均由「偉明圖書公司」代理 02-23638586※

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

Website: (Class notes and news are released here.)

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

Schedule:

3/1	Introduction
3/8	Bioelectric phenomenon
3/15	Biopotentials
3/22	Biopotentials
3/29	Biomedical sensors
4/5	清明節

4/12	Biopotential amplifiers
4/19	Biosignal processing
4/26	Midterm
5/3	Biomedical instrumentation and safety
5/10	Blood pressure and sound
5/17	Flow and volume of blood
5/24	Respiratory system
5/31	Medical imaging (I): X-ray and CT
6/7	Medical imaging (II): Nuclear medicine and ultrasound
6/14	Medical imaging (III): Magnetic resonance imaging
6/21	Biomedical optics
6/28	Final

Optional topics:

Basic physiology and anatomy

Bioinformatics

Numerical analysis in biomedical engineering

Grading:

Homework	20%
Midterm	40%
Final	40%