

# 99 上 LSMM514600 生物能量學及氧化磷酸化作用系統

## (Bioenergetics and Oxidative Phosphorylation System)

1. Time: Tuesday, 10:10 ~ 12:00, Classroom: LS-II-111
2. Instructor: Mou-Chieh Kao (高茂傑) [mckao@life.nthu.edu.tw](mailto:mckao@life.nthu.edu.tw) LS-I 307 ext. 42472
3. Office hours: By appointment only
4. Course description:

This is a course of intermediate level, which is intended to give students a deeper overview of bioenergetics and oxidative phosphorylation system.

### 5. Grading:

- 90% two in-class written examinations
- 10% participation (attendance, discussion and question asking)

### 6. Syllabus:

Week	Topics	Speaker
9/14	Brief orientation	Kao
9/21	Introduction to biochemical energetics	Kao
9/28	教師節停課一天 (學校行事曆新規定)	
10/5	Electron-transfer reactions in mitochondria	Kao
10/12	Structure and function of complex I: NADH dehydrogenase (1)	Kao
10/19	Structure and function of complex I: NADH dehydrogenase (2)	Kao
10/26	Structure and function of complex I: NADH dehydrogenase (3)	Kao
11/2	Structure and function of complex II: succinate dehydrogenase (1)	Kao
11/9	Structure and function of complex II: succinate dehydrogenase (2)	Kao
11/16	Mid-term Examination	Kao
11/23	Structure and function of complex III: cytochrome c reductase (1)	Kao
11/30	Structure and function of complex III: cytochrome c reductase (2)	Kao
12/7	Structure and function of complex IV: cytochrome c reductase (1)	Kao
12/14	Structure and function of complex IV: cytochrome c reductase (2)	Kao
12/21	ATP synthesis by complex V: ATP synthase	Kao
12/28	Regulation of oxidative phosphorylation	Kao
1/4	Final Examination	Kao