

# 97 下 LSMM576100 粒線體遺傳及疾病專題

## (Special Topics on Mitochondrial Genetics and Diseases)

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 course is designed for students who are interested in studying mitochondrial genome and related defects. The course aims to provide students with the basic knowledge of the mitochondrial genetics and the pathology of related diseases. The up-to-date research topics and literature in this field will also be covered. The class will be divided into two parts: the first part will be lectures given by the instructor and the second part will be seminars presented by students in the class and paper discussion. Students who have knowledge of molecular biology and genetics are preferred.

6. Teaching method:

The first 14 weeks of this course will focus on basic knowledge delivery of mitochondrial genetics and related diseases. The following 3 weeks of this course will be paper discussion which will center on the latest development and findings in pathogenesis of mitochondrial diseases.

5. Grading:

- 70% two in-class written examinations
- 20% seminar presentation
- 10% participation (attendance, discussion and question asking)

6. Syllabus:

Week	Topics	Speaker
2/24	Introduction	Kao
3/3	Mitochondrial biology	Kao
3/10	Mitochondrial genome and genetics Transcription of mtDNA	Kao
3/17	Translation and replication of mtDNA (1)	Kao
3/24	Translation and replication of mtDNA (2)	Kao
3/31	mtDNA mutation and mtDNA repair (1)	Kao
4/7	mtDNA mutation and mtDNA repair (2)	Kao
4/14	mtDNA mutation and mtDNA repair (3)	Kao

4/21	Examination I	Kao
4/28	Regulation and co-ordination of nuclear gene expression during mitochondrial biogenesis (1)	Kao
5/5	Regulation and co-ordination of nuclear gene expression during mitochondrial biogenesis (2)	Kao
5/12	The role of mitochondria in apoptosis	Kao
5/19	Pathophysiology of mitochondrial electron transport chain	Kao
5/26	Mitochondrial diseases	Kao
6/2	Student presentation and paper discussion (1)	Students
6/9	Student presentation and paper discussion (2)	Students
6/16	Examination II	