

96學年第二學期 微生物學實驗課程

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時間：Tuesday, 2:10 pm ~ 6:10 pm (T6T7T8T9)

地點：生科二館321室(LSII-321)

Course description:

This is a course of introductory level, which intends to give students an opportunity to gain experience in techniques commonly used in modern microbiology.

Syllabus:

Week/	Date	Topics	Instructors
1	2/19	Check-in & Organization (1) finger-touching experiment (2) collection of soil sample	Lan
2	2/26	Aseptic technique & Microscopy (1) Streak/Plating Plates and liquid culture inoculation (2) Sample examination & size measurement	Lan
3	3/04	Electron microscopy (I) (1) TEM introduction (2) Sample preparation (3) Sample examination & size measurement	Lan
4	3/11	Electron microscopy (II) Flagella observation by TEM	Lan
5	3/18	Bacterial staining (1) Simple staining (2) Gram staining (3) Negative staining (4) Spore staining	Lan
6	3/25	1st report due Bacterial growth (1) Evaluation of bacterial growth by measuring turbidity (2) Serial dilution-agar spread plating procedure to quantitate viable bacterial cells	Kao
7	4/01	Bacterial biochemical activities (1) Urease Test (2) Catalase test (3) Oxidase test Extracellular enzymatic activities (4) Starch Hydrolysis test (5) Casein Hydrolysis test	Kao

		(6) IMViC test	
8	4/08	API (Analytical profile index) 20E	Kao
9	4/15	The bacterial viruses: bacteriophages (1) Cultivation & enumeration of bacteriophages (2) Isolation of coliphages from water	Kao
10	4/22	Microbiology of food (1) Yoghurt (2) Water test	Kao
11	4/29	<u>The 2nd report due</u> Ginger/Garlic/mouthwash/Amp/Disc	Yin
12	5/06	Competent Cells/Transformation (Blue/White Screening)	Yin
13	5/13	Plasmid Extraction/Gel Running	Yin
14	5/20	AGI (agarose gel immunoprecipitation)	Yin
15	5/27	HA (Haemagglutination) & HI (Haemagglutination Inhibition) tests	Yin
16	6/03	<u>The 3rd report due</u> Visit Food Industry Research and Development Institute	Lan · Kao · Yin

評分方法 (Grading) :

25% Participation (15% absence, 10% attitude, etc)

75% Three experimental reports

參考文獻 (Reference) :

Cappuccino, J & Sherman, N. (2002) Microbiology: a laboratory manual, 6th ed., Benjamin Cummings Publishing Co.

生科圖書館 (QR63 C34 2002)