

Summer School

20190426 updated

Microbial Biotechnology and Drug Discovery National Yang-Ming University

July 15~29, 2019



Course coordinator: Professor, Director Shir-Ly Huang (sl.huang@ym.edu.tw)

(Circular 1.1)

Objective	This course is designed to highlight areas of microbial biotechnology and medical microbiology research currently capturing the interest of pharmaceutical and biotech industries, and poised to grow in importance over the next few years. Students will have knowledge and hands-on training on basic bacteria, virus and fungi. The concepts on microbial drug discovery for probiotics and potential therapy will also be covered.
Outline	The course includes lectures and demo/hands-on training. The lecture cover basic and frontier concepts in bacteriology, virology, mycology & microbiota. The academia/industry interaction, research institute/industrial visits and culture interactions are included.
Schedule	July 15, Monday ~ July 29, Monday, 2019 (3 credit hours)
Prospective students	Students (undergraduate and graduate levels), researchers and lecturers in the biomedicine, biotechnology, food, pharmacology and drug development areas.
Language	English
Grading	<ul style="list-style-type: none">• Grading by exams and class participation• This course is equivalent to a 3-credit hour graduate course. The certificate is available upon request.
Registration	<ul style="list-style-type: none">• Registration fee USD 1,200 (including 2-week dorm accommodation)• Please send application form to Ms. My (Email: hamyphan181@gmail.com)

1st week (July 15 ~ July 20)

Date	Content	Instructor
7/15 (Mon)	Arrive campus (student dorm check-in)	CC Chen, Phan Thi Ha My
7/16 (Tue)		
9:00~12:00	Opening, Course Introduction	SL Huang
13:30~15:00	Biosafety training	SL Huang
15:00~16:30	Basic Chinese	SW Chi
16:30~18:00	Welcome party & student self-introduction	SL Huang
7/17 (Wed)		
9:00~10:30	*Introduction of bacteria	SL Huang
10:30~12:00	Keynote speech: The world of microbiology: why should we care	JJ Wu Dean, School of Biomedical Science and Engineering, National Yang- Ming University, Taiwan (Host: SL Huang)
13:30~15:00	*Microbial growth control and antibiotic resistance	WJ Syu
15:00~16:30	Keynote speech: Education system and R&D strategy in Vietnam	NN Tuan, TDTU (Host: SL Huang)
7/18 (Thu)		
9:00-17:00	Field trip: • Taiwan microbial bank and facilities: Bioresource Collection and Research Center at Food Industry Research and Development Institute	SL Huang
7/19 (Fri)		
9:00~10:00	*Food-borne pathogens: Gram-negative bacteria	SL Huang
10:00~11:00	*Food-borne pathogens: Gram-positive bacteria	YH Tsai
11:00~12:00	*Molecular detection of food-borne pathogens	YH Tsai
13:30~17:30	Bacterial identification: lab training (I)	WC Tsai Chairman, SUPER LABORATORY CO., LTD., Taiwan
7/20 (Sat)		
9:00~12:00	Bacterial identification: lab training (II)	WC Tsai
12:00~13:00	Written Exam I (lectures labelled with * on July 17 & 19)	YH Tsai

2nd week (July 22 ~ July 26)

Date	Content	Instructor
7/22(Mon)		
9:00~10:30	*Microbiota and human health/diseases	SL Huang
10:30~12:00	Keynote speech: Taiwan pharmaceutical industry outlook	CP Yang Chief Executive Officer, Formosa Laboratories, Inc. , Taiwan (Host: SL Huang)
13:30~17:30	Fecal microbiota analysis: lab training	SL Huang
7/23 (Tue)		
9:00~11:00	*Animal models for biomedical research	WH Sun
11:00~12:30	Keynote speech: Important techniques in cell biology research	HC Chen Dean, School of Life Sciences (Host: SL Huang)
14:00~16:00	*Basic introduction of virus	MH Tsai
7/24 (Wed)		
9:00~11:00	*Biotech product analysis	SL Huang
11:00~12:30	Keynote speech: Applications of Molecular Biology in Medicine	CH Lee Professor, Department of Pathology & Laboratory Medicine, Indiana University School of Medicine, USA (Host: ST Hu)
14:00~17:00	Liquid chromatography: HPLC and FPLC (Demo)	SL Huang
7/25 (Thu)		
9:00~11:00	Microbial diversity & ecology	SD Tsen
11:00~12:00	Written exam II (lectures labelled with * on July 22, 23 & 24)	MH Tsai
13:30~14:30	Field trip: Chinese herbal medicine collection and applications Herbal museum, National Research Institute of Chinese Medicine	R Kirschner
14:30~16:30	Basic introduction of fungi	R Kirschner
16:30~17:30	Microscopic observation of fungi	R Kirschner
18:30~20:30	Closing ceremony and banquet	SL Huang and all teachers
7/26 (Fri)		
9:00~10:30	Keynote speech: Development of microbial functional foods	CC Chen President, Grape King Bio, Co. Ltd., Taiwan (Host: SL Huang)
10:30~17:30	Field trip: 2019 BIO Asia-Taiwan Taipei Nangang Exhibition Hall https://expo.bioasiataiwan.com/en/	SL Huang, Taiwan

3rd week

Date	Content	Instructor
7/29 (Mon)	Student dorm check-out Flight departure	CC Chen, Phan Thi Ha My

Course advisor

1. Hsu-Sung Kuo (郭旭崧), M.D., Ph.D.

President, National Yang-Ming University, Taiwan

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2. Shun-Haw Wei (蔚順華), Ph.D.

Dean, Office of International Affairs, National Yang-Ming University, Taiwan

Professor, Physical Therapy and Assistive Technology, National Yang-Ming University, Taiwan

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Course organizer

Shir-Ly Huang (黃雪莉), Ph.D.

Professor and Director, Institute of Microbiology and Immunology, National Yang-Ming University, Taiwan

Professor, Institute of Food Safety and Health Risk Assessment, National Yang-Ming University, Taiwan

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<http://imi.web.ym.edu.tw/files/13-1255-15739.php>

Course administration

Chih-Chen Chen (陳治楨)

Professor Shir-Ly Huang's Lab

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Keynote speaker

1. Hong-Chen Chen (陳鴻震), Ph.D.

Dean, School of Life Sciences, National Yang-Ming University, Taiwan

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2. Jiunn-Jong Wu (吳俊忠), Ph.D.

Dean, School of Biomedical Science and Engineering, National Yang-Ming University, Taiwan

3. Chih-Ping Yang (楊志平), Ph.D.

Chief Executive Officer, Formosa Laboratories, Inc., Taiwan

4. Chin-Chu Chen (陳勁初), Ph.D.

President, Grape King Bio, Co. Ltd., Taiwan

5. Chao-Hung Lee (李昭鉉), Ph.D.

Professor, Department of Pathology & Laboratory Medicine, Indiana University School of Medicine, USA

6. Ngoc Nguyen Tuan (阮玉俊), Ph.D.

Lecturer, Faculty of Applied Sciences, Ton Duc Thang University, HCM City, Vietnam

Teaching team

1. Shir-Ly Huang (黃雪莉), Ph.D.

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2. Ming-Han Tsai (蔡明翰), Ph.D.

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3. Yu-Huan Tsai (蔡雨寰), Ph.D.

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4. Wen-Cherng Tsai (蔡文城), Ph.D.

Chairman, Super Laboratory Co., Ltd., Taiwan

Adjunct professor, Institute of Microbiology and Immunology, National Yang-Ming University, Taiwan

Adjunct professor, Institute of Food and Health Risk Assessment, National Yang-Ming University, Taiwan

5. Wang-Jr Syu (許萬枝), Ph.D.

Adjunct professor, Institute of Microbiology and Immunology, National Yang-Ming University, Taiwan

6. Shiau-Ting Hu (胡小婷), Ph.D.

Adjunct professor, Institute of Microbiology and Immunology, National Yang-Ming University, Taiwan

7. Suh-Der Tsen (程樹德), Ph.D.

Retired faculty, Institute of Microbiology and Immunology, National Yang-Ming University, Taiwan

8. Wei-Hsin Sun (孫維欣), Ph.D.

Professor, Department of Life Sciences and Institute of Genome Sciences, National Yang-Ming University, Taiwan

9. Roland Kirschner (羅南德), Ph.D.

Professor, School of Forestry & Resource Conservation, National Taiwan University, Taiwan

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10. Sou-Whei Chi (紀壽惠), Ms.

Chinese teacher

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Teaching Assistant Team

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Access

NYMU: <https://nymu-e.ym.edu.tw/bin/home.php>

Taiwan Taoyuan International Airport: <http://www.taoyuan-airport.com/english/Index/>

Taipei Songshan Airport: <http://www.tsa.gov.tw/tsa/en/home.aspx>

Language

English

Homepage

For updated information, visit web site: (<https://www.facebook.com/summerschoolsNYMU/>)

Accommodation

Campus dorms are available

Events

Closing Ceremony and Banquet

Dr. HS Kuo, President of NYMU;

Dr. SH Wei, Dean of Office of International Affairs;

Dr. Shir-Ly Huang, Director of Institute of Microbiology and Immunology;

Time: 18:30 – 20:30, July 25 (Thu), 2019

Location: L'escargots French Cuisine, NYMU