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開課班級：四財金學士學程一A

授課老師：曾昱

學分數：2

課程大綱：

微生物雖然肉眼看不見，但它們幾乎支配了地球上的每一個環境。本課程旨在為學生提供一個關於微生物世界的基礎介紹，讓學生探索微生物生命的奇妙世界。學生將學習到什麼是微生物，以及微生物在農業、健康和環境中所扮演的重要角色。

outline:

Microbes may be invisible to the naked eye, but they dominate nearly every environment on Earth. This course is designed as general introduction for students to explore the amazing world of microbial life. Students will learn about what microbes are and the significant roles microbes play in agricultural, health, and the environment.

教學型態：

課堂教學

成績考核方式：

平時成績:20%

期中考:30%

期末考:30%

其它:Report: 20%

本科目教學目標：

1. Understand the Fundamental Nature and Diversity of Microbes: Students will gain a foundational understanding of what microbes are, including an introduction to various types of microorganisms such as bacteria, fungi, viruses, and nematodes. This includes exploring their characteristics, structures, and the unique roles they play in different ecosystems. 2. Appreciate the Impact of Microbes on Health, Agriculture, and the Environment: The course aims to enlighten students about the dual roles microbes play as both beneficial and harmful entities. Students will learn about the significance of microbes in agricultural productivity, their implications for human and animal health, and their broader environmental impacts, including their potential existence beyond Earth. 3. Develop Skills in Microbial Observation and Understanding Microbial Behavior: Through the course, students will be introduced to various methods for observing and studying microorganisms, enabling them to appreciate the complexity of microbial life. They will explore microbial strategies, the evolutionary arms race between microbes and their hosts, and current hot topics in microbiology, preparing them for further studies or careers in related fields.

參考書目：

Tortora GJ, Funke BR, Case CL, Weber D, Bair W, 2018. Microbiology: an introduction, 13th ed. Pearson.



課程進度表：

| 週次 | 起訖月日 | 授課單元(內容) | 備註 |
|------|-----------|--|---|
| 第1週 | 2.19~2.25 | Course Introduction | 8日正式上課。8~12日課程加退選，轉學(系)生、復學生及延修生選課，雙主修、輔系申請，12日申辦抵免學分截止日 |
| 第2週 | 2.26~3.03 | What are microbes: Types of microorganisms | |
| 第3週 | 3.04~3.10 | The invisible realm: Living in a microbial world | 28日(日)孔子誕辰紀念日/教師節(放假),29日(一)補假 |
| 第4週 | 3.11~3.17 | The Germ theory | 29日成績優異提前畢業者提出申請截止日 |
| 第5週 | 3.18~3.24 | Introduction to bacteria | 6日(一)中秋節(放假)，10日(五)國慶日(放假) |
| 第6週 | 3.25~3.31 | Introduction to fungi | 14日學生宿舍安全輔導暨複合式防災疏散演練。18日多益測驗 |
| 第7週 | 4.01~4.07 | Introduction to viruses | 24日(五)補假，25日(六)光復暨古寧頭大捷日(放假)。 |
| 第8週 | 4.08~4.14 | Introduction to nematodes | 30日校課程委員會 |
| 第9週 | 4.15~4.21 | Midterm | 3~9日期中考試 |
| 第10週 | 4.22~4.28 | Microbes as friends or foe | 13日教務會議,16日教師期中成績上網登錄截止日 |
| 第11週 | 4.29~5.05 | Seeing microbes: Methods for looking at microscopic organism | |
| 第12週 | 5.06~5.12 | Microbial strategies | 24~28體育運動週。24日校園路跑。27日運動大會夜間開幕，28日運動大會活動，29日101週年校慶活動日，照常上班 |
| 第13週 | 5.13~5.19 | The evolutionary arms race | |
| 第14週 | 5.20~5.26 | Microbes in agriculture | 12日申請停修課程截止日 |
| 第15週 | 5.27~6.02 | Microbes in health | |
| 第16週 | 6.03~6.09 | Microbes beyond earth | 22日校務會議。25日行憲紀念日(放假) |
| 第17週 | 6.10~6.16 | Hot topics in microbiology | 1日(四)開國紀念日(放假) |
| 第18週 | 6.17~6.23 | Final Exam | 5~11日期末考試，10~11日學生退宿 |