



Course code	PHM2002
Course title (English)	Medicinal Microbiology
Course title (Chinese)	药学微生物学
Units	2
Language of Instruction	English
Description (English)	The course will introduce the structure and function of microbes (cellular structures, metabolism, and growth); microbial genetics, microbial ecology, microbial diversity (prokaryotes, eukaryotes, viruses). The course will focus on the pathogens that cause infectious diseases: Typhoid, Tuberculosis, Malaria, Cholera, Hepatitis, Meningitis, Syphilis & Gonorrhea, HIV, and others. Upon completion of this course, students are expected to have a broad knowledge of pharmaceutically-relevant microorganisms (viruses, bacteria, fungi and parasites), including their properties, structure, taxonomy, growth, and molecular mechanism of gene regulation, transmission of genetic material, and antimicrobial resistance development.
Description (Chinese)	本课程将介绍微生物的结构和功能（细胞结构、新陈代谢和生长）；微生物遗传学、微生物生态学、微生物多样性（原核生物、真核生物、病毒）。该课程将重点关注引起传染病的病原体：伤寒、结核病、疟疾、霍乱、肝炎、脑膜炎、梅毒和淋病、艾滋病毒等。完成本课程后，学生应具备与药学相关的微生物（病毒、细菌、真菌和寄生虫）的广泛知识，包括它们的特性、结构、分类学、生长和基因调控的分子机制、遗传物质的传递和抗菌素耐药性的发展。

Learning Outcomes

- Acquire the broad fundamental knowledge and appreciation of microbiological concepts
- Understand the key differences between major groups of microorganisms
- Understand the structure, physiology, metabolism and genetics of microorganisms
- Understand the pathogenesis and control of microorganisms
- Understand the diversity of microbes
- Understand the importance of microbes to cause infectious diseases



Indicative Teaching Plan

Week	Topic
1	Introduction and History of Microbiology
2	Prokaryotic Cell Structures and Function
3	Eukaryotic Cell Structures and Function
4-1	Introduction to Viruses
4-2	Microbial Nutrition and Growth
5-1	Control of Microbial Growth
5-2	Tools of the Microbiology Laboratory
6-1	Microbial Metabolism
6-2	Microbial Genetics
7	Microbial Pathogenic
8	Microbial Identification and Diagnosis
9	Gram-Positive and Gram-Negative Cocci of Medical Importance
10	Gram-Positive Bacilli of Medical Importance
11-1	Gram-Negative Bacilli of Medical Importance
11-2	Miscellaneous Bacterial Agents of Disease
11-3	Viruses That Infect Humans: The DNA Viruses
12-1	Viruses That Infect Humans: The RNA Viruses
12-2	The Fungi of Medical Importance
13	The Parasites of Medical Importance