

课程详述

COURSE SPECIFICATION

以下课程信息可能根据实际授课需要或在课程检讨之后产生变动。如对课程有任何疑问，请联系授课教师。

The course information as follows may be subject to change, either during the session because of unforeseen circumstances, or following review of the course at the end of the session. Queries about the course should be directed to the course instructor.

1.	课程名称 Course Title	现代病毒学入门 Introduction to Modern Virology
2.	授课院系 Originating Department	医学院 School of Medicine
3.	课程编号 Course Code	MED227
4.	课程学分 Credit Value	3
5.	课程类别 Course Type	专业选修课 Major Elective Courses
6.	授课学期 Semester	春季/Spring
7.	授课语言 Teaching Language	中英双语/English & Chinese
8.	授课教师、所属学系、联系方式 Instructor(s), Affiliation & Contact (For team teaching, please list all instructors)	裴勇刚, 公共卫生及应急管理学院, peiyg@sustech.edu.cn Yonggang Pei, School of Public Health and Emergency Management, peiyg@sustech.edu.cn
9.	实验员/助教、所属学系、联系方式 Tutor/TA(s), Contact	无 NA
10.	选课人数限额(可不填) Maximum Enrolment (Optional)	

11. 授课方式 Delivery Method	讲授 Lectures	习题/辅导/讨论 Tutorials	实验/实习 Lab/Practical	其它(请具体注明) Other (Please specify)	总学时 Total
	40	8	0	0	48
学时数 Credit Hours					
12. 先修课程、其它学习要求 Pre-requisites or Other Academic Requirements	无 NA				
13. 后续课程、其它学习规划 Courses for which this course is a pre-requisite	无 NA				
14. 其它要求修读本课程的学系 Cross-listing Dept.	无 NA				

教学大纲及教学日历 SYLLABUS

15. 教学目标 Course Objectives

本课程设计面向医学院各年级学生，主要介绍病毒学的基本原理和概念，结合重大病毒流行病的典型案例，向学生介绍病毒学研究的发展历史以及在疾病防治方面的重要意义和价值。

This course is designed for undergraduates at the School of Medicine. It mainly introduces the principles of Virology through combining the important viral epidemic diseases in history and further presents the development of modern virology, including its significances and value in the prevention and treatment of diseases.

16. 预达学习成果 Learning Outcomes

- (1) 了解病毒学研究的重要性和意义。 Know the importance and value of Virology.
- (2) 了解病毒学研究的基本概念和知识。 Grasp the conceptual contents and theories of Virology.
- (3) 了解病毒流行病的特点和防治。 Understand the characteristics and prevention of virus epidemiology.
- (4) 了解几列重大病毒性传染病的历史。 Learn several important viral epidemic diseases in history.

17. 课程内容及教学日历 (如授课语言以英文为主, 则课程内容介绍可以用英文; 如团队教学或模块教学, 教学日历须注明主讲人)

Course Contents (in Parts/Chapters/Sections/Weeks. Please notify name of instructor for course section(s), if this is a team teaching or module course.)

(教学内容: 中英双语)

本课程主要介绍病毒学的基本概念和知识, 深入浅出地介绍病毒纷繁复杂的生活周期, 病毒与宿主之间的作用关系, 以及病毒能够引发的相关疾病和抗病毒研究发展, 并将结合代表性案例的方式向学生们展示病毒学基础研究在监测、预防、根除病毒感染方面的重要作用和无穷潜力。

This course introduces the basic principles of Virology, including the life cycles of various viruses, the virus-host interactions, the induced diseases, and the development of anti-viral therapeutic strategies, and presents the significant values of virology studies on the monitoring, prevention, and treatment of many viral-associated human diseases.

(教学日历: 中英双语)

Section	Topic	Hours
1	我们为什么要研究病毒? Why do we study viruses? <ul style="list-style-type: none"> 病毒是自然界的有机组成部分; Viruses are indispensable. 病毒存在于一切生物体; Viruses survive in all of the species. 病毒具有广泛疾病性; Viruses are widely infectious. 病毒可以发展成为工具; Viruses can be a tool. 	2
2	病毒的起源与分类 Viral origin and classification. <ul style="list-style-type: none"> 病毒的起源假说; The hypotheses of viral origin. 病毒的分类系统; Viral classification. 各类病毒的一般特征; The general characteristics of viruses. 	2
3	代表性病毒专题 1: HIV 感染和人类的共生共存; Typical case 1: The coexist of HIV infection and humans.	2
4	病毒的生活周期; Viral life cycle. <ul style="list-style-type: none"> 病毒的吸附与入侵; Viral attachment and entry. 病毒的复制; Viral replication. 病毒的装配和释放; Viral assembly and release. 	2
5	病毒的结构差异; Viral structures. <ul style="list-style-type: none"> 病毒的基本结构; Viral basic structures. DNA 病毒的结构; The structures of DNA viruses. RNA 病毒的结构; The structures of RNA viruses. 朊病毒的特点; The structures of prion. 	2
6	主题讨论 1: 病毒结构和功能的一致性; Discussion 1: The consistency of viral structures and functions.	2
7	病毒基因组和遗传学; Viral genetics. <ul style="list-style-type: none"> DNA 基因组; The genomes of DNA viruses. RNA 基因组; The genomes of RNA viruses. 病毒的遗传学分析; Viral genetic analysis. 	2
8	病毒的感染和传播; Viral infection and transmission. <ul style="list-style-type: none"> 病毒感染的结局; The consequences of viral infection. 病毒的传播特性; Viral spreading features. 	2
9	病毒的致病性; Viral pathogenicity. <ul style="list-style-type: none"> 病毒引发的急性疾病; Viral induced acute diseases. 病毒引发的慢性病; Viral included chronic diseases. 	2
10	主题讨论 2: 病毒与宿主的相互关系; Discussion 2: The interactions between viruses and hosts.	2
11	代表性病毒专题 2: 冠状病毒大流行; Typical case 2: Coronaviruses-associated pandemics.	2
12	病毒与癌症; Viruses and cancers. <ul style="list-style-type: none"> 致癌病毒的发现; The discovery of oncoviruses. 病毒转化的关键因素; The critical factors of virus-mediated transformation. 	2
13	病毒与免疫系统的博弈; The survival game of viruses and immunity. <ul style="list-style-type: none"> 免疫系统的基本构成; The components of immunity. 病毒与免疫应答; Viral infection and immune response. 病毒与免疫治疗; Viral infection and immunotherapy. 	2

14	代表性病毒专题 3: 病毒性肝病; Typical case 3: Hepatitis viruses-related liver diseases.	2
15	代表性病毒专题 4: 疱疹病毒与持续性感染; Typical case 4: Herpesviruses and latent infection.	2
16	病毒与流行病学; The principles of virus epidemiology. • 病毒相关的重大流行病; Viral-associated epidemic diseases. • 病毒流行病的影响因素; The influence factors of viral epidemiology. • 病毒流行病的防治策略; The prevention strategies of viral epidemiology.	2
17	病毒流行病学的实践; The practices of virus epidemiology. • 描述性研究; Descriptive studies. • 队列研究; Cohor studies. • 病例对照研究; Case-control studies.	2
18	代表性病毒专题 5: 流感大爆发; Typical case 5: The outbreak of influenza viruses.	2
19	主题讨论 3: 新冠疫情防治最优策略; Discussion 3: The best practices for COVID-19 prevention and control.	2
20	病毒疫苗的研发; The development of vaccines. • 病毒疫苗的种类; The classification of vaccines. • 成功疫苗的研发; Successful development of vaccines. 疫苗的储存和运输; The storage and transportation of vaccines.	2
21	抗病毒药物的发展; The development of anti-viral drugs. • 抗病毒药物的种类; The classification of anti-viral drugs. • 抗病毒药物的研发案例; The successful cases of anti-viral drugs. • 抗病毒药物的研究方向; The research direction of anti-viral drugs.	2
22	病毒的应用; The developed virus tools. • 逆转录病毒; Retroviruses. • 溶瘤病毒; Oncolytic viruses. • 其他实验和治疗病毒; Others.	2
23	代表性病毒专题 6: 新发病病毒性传染病; Typical case 6: Emerging viruses-related infectious diseases.	2
24	主题讨论 4: 病毒研究的挑战和潜力; Discussion 4: The challenges and potential of Virology.	2

18. 教材及其它参考资料 Textbook and Supplementary Readings

教材 Textbooks:
[1] Nigel Dimmock. Introduction To Modern Virology (7th edition). 2016.
[2] Lauren, Sompayrac 著, 赵欣敏、张峰译. 《病毒学概览 (第 2 版)》. 2016.
[3] S.J.Flint 著, 刘文军、许崇凤译. 《病毒学原理 (II): 致病机理与控制》. 2015.

课程评估 ASSESSMENT

19. 评估形式 Type of Assessment	评估时间 Time	占考试总成绩百分比 % of final score	违纪处罚 Penalty	备注 Notes
出勤 Attendance		20		
课堂表现 Class Performance		30		
小测验 Quiz				
课程项目 Projects				

平时作业 Assignments		20		
期中考试 Mid-Term Test				
期末考试 Final Exam				
期末报告 Final Presentation		30		
其它（可根据需要 改写以上评估方 式） Others (The above may be modified as necessary)				

20. 记分方式 GRADING SYSTEM

- A. 十三级等级制 Letter Grading
 B. 二级记分制（通过/不通过） Pass/Fail Grading

课程审批 REVIEW AND APPROVAL

21. 本课程设置已经过以下责任人/委员会审议通过
 This Course has been approved by the following person or committee of authority

