

课程大纲

COURSE SYLLABUS

1.	课程代码/名称 Course Code/Title	代谢生物学研究进展 / Progress in Metabolic Biology
2.	课程性质 Compulsory/Elective	专业选修课 Elective
3.	开课单位 Offering Dept.	医学院 School of Medicine
4.	课程学分/学时 Course Credit/Hours	3 学分/48 学时 3 Credits/48 Class hours
5.	授课语言 Teaching Language	中英双语 Chinese and English
6.	授课教师 Instructor(s)	张果 Guo Zhang
7.	开课学期 Semester	春季学期 Spring Semester
8.	是否面向本科生开放 Open to undergraduates or not	否 No
9.	先修要求 Pre-requisites	无 No requirement
10.	教学目标 Course Objectives	<p>本课程的主要内容包括代谢生物学理论、方法概述，以及前沿进展，帮助研究生夯实相关领域的基础知识。同时，学生能够了解课题设计、实验手段等研究方法，紧跟领域前沿。课程考查设置小论文与口头报告环节，锻炼学生针对某一研究主题进行文献查找、分析和综述的能力，同时也加强学生科技论文撰写与口头报告的能力。</p> <p>This course includes the general principle, research methods and progress in metabolic research, aiming to help student understand the knowledge, project design, research methods and the frontiers of metabolic biology studies. The students will be requested to complete assignments and oral presentations, aiming to help them improve their skills in literature searching, reading, and the writing of review.</p>
11.	教学方法 Teaching Methods	<p>课堂教学、前沿文献精读讨论、期末小论文、口头报告。</p> <p>Classroom teaching, Study of research articles, Assignments, Oral presentation.</p>
12.	教学内容 Course Contents	<p>(如面向本科生开放，请注明区分内容。 If the course is open to undergraduates, please indicate the difference.)</p>
	Section 1	课程概要介绍 Introduction of metabolic biology.
	Section 2	代谢综合征（肥胖、2型糖尿病、脂肪肝，以及心脑血管疾病）的流行病学 The epidemiology of metabolic syndrome.
	Section 3	代谢综合征的病因学 The etiology of metabolic syndrome. ◆ 遗传因素 genetic factors. ◆ 环境因素 environmental factors.
	Section 4	代谢综合征的病理生理学 (I) The pathophysiology of metabolic syndrome (I). ◆ 能量平衡调节 Regulation of energy balance. ◆ 营养代谢 Carbohydrate, fat, and protein metabolism. ◆ 脂肪结构和脂肪因子 Adipose structure and adipokines.
	Section 5	代谢综合征的病理生理学 (II) The pathophysiology of metabolic syndrome (II).

	<ul style="list-style-type: none"> ◆ 激素和肠道微生物 Gut hormones and gut microbiome. ◆ 肥胖伴随的胰岛素抵抗 Insulin resistance in obesity. ◆ 炎症 Inflammation.
Section 6	代谢研究方法概览 Research methods of metabolism.
Section 7	2 型糖尿病 Type 2 diabetes mellitus.
Section 8	肥胖与 2 型糖尿病 Obesity and type 2 diabetes mellitus..
Section 9	非酒精性脂肪肝 Nonalcoholic fatty liver disease.
Section 10	高脂血症 Hyperlipidemia.
Section 11	心血管疾病 (I) Cardiovascular diseases (I).
Section 12	心血管疾病 (II) Cardiovascular diseases (II).
Section 13	<p>肥胖及代谢综合征的预防与治疗进展 (I) Prevention and treatment of obesity and metabolic syndrome (I).</p> <ul style="list-style-type: none"> ◆ 饮食、运动和行为疗法治疗肥胖和代谢综合征 Diet, exercise, and behavior therapy in the treatment of obesity and metabolic syndrome. ◆ 外科手术 Bariatric/Metabolic surgery.
Section 14	<p>肥胖及代谢综合征的预防与治疗进展 (II) Prevention and treatment of obesity and metabolic syndrome (II).</p> <ul style="list-style-type: none"> ◆ 肥胖与代谢综合征的药物治疗 Pharmacotherapy of obesity and metabolic syndrome. ◆ 儿童肥胖与代谢综合征的防治 Prevention and treatment of childhood obesity and metabolic syndrome.
Section 15	研究生做口头报告 Oral presentation.
Section 16	研究生做口头报告 Oral presentation.
13. 课程考核 Course Assessment	
	<p>考核形式: 考勤 (10%) + 前沿文献精读讨论 (40%) + 期末小论文 (20%) + 期末口头报告 (30%)。 Attendance (10%), Study of research article (40%), Assignment (20%), Oral presentation (30%).</p>
14. 教材及其它参考资料 Textbook and Supplementary Readings	
	<p>参考书: (《Metabolic Syndrome》, 《Metabolic Basis of Obesity》, 《From Obesity to Diabetes》), 与每个部分相关的研究论文与综述。 References: (《Metabolic Syndrome》, 《Metabolic Basis of Obesity》, 《From Obesity to Diabetes》), Research articles.</p>