

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	组织学与胚胎学, Histology and Embryology
2.	授课院系 Originating Department	医学院, School of Medicine
3.	课程编号 Course Code	MED306
4.	课程学分 Credit Value	3
5.	课程类别 Course Type	专业核心课 Major Core Courses
6.	授课学期 Semester	秋季 Fall
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 (如属团队授课, 请列明其他授课教师) Instructor(s), Affiliation & Contact (For team teaching, please list all instructors)	秦建强教授 南方医科大学基础医学院 广州市沙太南路 1023 号生命科学楼人体解剖学教研室 Tel (电话): (020)6164-8635 Email: jqqin@fimmu.com Prof. QIN Jianqiang School of basic medicine, Southern Medical University No. 1023 Sha Tai Nan Road, Guangzhou
9.	实验员/助教、所属学系、联系方式 Tutor/TA(s), Contact	
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
学时数 Credit Hours	32	0	32	3 学分 (1-16 周), 64 学时 (理论课, 32 学时; 实验课 32 学时) 3 credits (1-16 weeks). 64 hours (lectures 32 hours; laboratory 32 hours).	64
12. 先修课程、其它学习要求 Pre-requisites or Other Academic Requirements	先修课程: BIO206-15 细胞生物学, BIO320 分子生物学。 Prerequisite: BIO206-15 Cell Biology and BIO320 Molecular Biology.				
13. 后续课程、其它学习规划 Courses for which this course is a pre-requisite	无 None				
14. 其它要求修读本课程的学系 Cross-listing Dept.	无 None				

教学大纲及教学日历 SYLLABUS

15. 教学目标 Course Objectives

组织学与胚胎学是医学的重要基础学科, 分为组织学与胚胎学两部分。组织学研究机体的微细结构及其与机能的关系, 胚胎学研究个体发生、生长及发育机理。通过教学, 使学生掌握组织学与胚胎学的基本理论、基本知识和基本技能, 为学习病理学等其它有关医学课程和未来从事生命科学研究打下坚实的形态学基础。

组织胚胎学的教学过程包括课堂讲授、实验观察和课堂讨论, 实验内容包括观察显微标本和模型, 以及有关的幻灯片和教学视频等, 以达到验证和深化理论的目的。

Histology and Embryology is a foundation course of basic medicine. Histology studies the tissue structure and function of normal human organs. Embryology deals with the mechanism of individual generation, growth and development of embryo. From this course, students will understand the basic theories, knowledge and basic skills of histology and embryology. This course also provides a solid foundation for learning other related medical courses, such as pathology and other life science courses.

The course involves lectures, specimen observation and group discussion. The laboratory teaching includes observing microscopic specimens and models, and watching related slides and teaching videos.

16. 预达学习成果 Learning Outcomes

1、能熟练使用和维护普通光学显微镜, 熟悉光学显微镜各部件的用途;

2、能通过语言、文字及绘图对所观察到的细胞、组织和器官的基本结构特点进行正确的描绘或描述。

培养学生严肃的科学态度、严格的科学作风和严密的科学方法; 培养学生分析问题与解决问题的能力, 提高学生的观察能力与思辨能力

The learning outcomes of this course are: (1) students will be able to manoeuvre and maintain an ordinary optical microscope, and to be familiar with various parts of the optical microscope; (2) students will be able to describe the basic characteristics of observed cells, tissues and organs through writing and drawing. In this course, we will develop students' scientific attitude as well as analytic, problem-solving, and critical thinking skills.

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.)

第一章 绪论 Introduction

组织学与胚胎学的研究内容及意义。组织学与胚胎学的研究方法和技术，常用光镜组织标本的制备技术: 石蜡切片—HE 染色技术。The content and significance of histology and embryology. Methods of learning histology and embryology. Tissue specimen preparation for light microscopy, such as paraffin section - HE staining.

第二章 上皮组织 Epithelial Tissue

上皮组织的一般特征，上皮组织的分类。被覆上皮：单层扁平上皮，单层立方上皮、单层柱状上皮、假复层纤毛柱状上皮、复层扁平上皮和变移上皮。上皮组织的特殊结构：微绒毛、纤毛、基膜。腺上皮和腺的概念、分类。The general feature and classification of epithelial tissue. Covering epithelia: simple squamous epithelium, simple cuboidal epithelium, simple columnar epithelium, pseudostratified ciliated columnar epithelium, stratified squamous epithelium and translational epithelium. The special structures of epithelial tissue: microvilli, cilia and basement membrane. The definition and classification of glandular epithelia and glands.

第三章 结缔组织 Connective Tissue

结缔组织的一般特征及分类。固有结缔组织：重点讲授疏松结缔组织，简介致密结缔组织，网状组织，脂肪组织。Histological feature and classification of connective tissue. Connective tissue proper: loose connective tissue, dense connective tissue, reticular tissue and adipose tissue.

第四章 血液 Blood

血液：组成，重点讲授血细胞、简介血小板。Composition of blood. Blood cell and blood platelet.

第五章 软骨和骨 Cartilage and Bone

一、软骨：软骨基质、软骨细胞的结构和功能。Cartilage: structure and function of cartilage matrix and chondrocyte.

二、骨：组成包括纤维、基质及钙盐，重点讲授骨板的结构。掌握骨原细胞、成骨细胞、骨细胞和破骨细胞的来源、形态结构与功能。了解骨发生的两种方式，骨发生的两个基本过程。Bone: fibres, bone matrix and calcium salt. Mainly focusing on the structure of bone lamellar. Introduction to the formation, structure and function of osteoprogenitor cell, osteoblast, osteocyte and osteoclast. Understand two key processes of osteogenesis.

第六章 肌组织 Muscle Tissue

肌组织的共同特征及分类。骨骼肌、心肌、平滑肌光镜形态结构特点。The feature and classification of muscle tissue. The ultrastructural feature of skeletal muscle, cardiac muscle and smooth muscle.

第七章 神经组织 Nerve Tissue

神经组织的组成及功能。神经元：细胞体、突起。神经元分类。突触的概念，分类，化学突触的组成。神经纤维，神经末梢，神经胶质细胞的功能。The composition and function of nerve tissue. Neurons: soma and neurite. Classification of neurons. The definition and classification of synapses, and the composition of chemical synapses. Functions of nerve fibre, nerve ending and neuroglial cells.

第八章 神经系统 The Nervous System

灰质、白质的概念，大脑皮质和小脑皮质的结构分层，脊髓灰质的3种神经细胞，神经节细胞的形态结构，脑脊膜和血—脑屏障。The definition of gray matter and white matter. Structural layers of the cerebral cortex and cerebellar cortex. Three types neuron cell of spinal cord. Histological feature of the ganglia. The meninx and blood-brain barrier (BBB).

第九章 眼和耳 The Eye and Ear

一、眼 Eye

眼球，眼球壁结构包括纤维膜、血管膜和视网膜。眼睑。Eyeball, structure of the eyeball wall (fibrous tunic, vascular tunic and retina). Eyelid.

二、耳 Ear

外耳：耳廓与外耳道管壁的结构。中耳：鼓室与咽鼓管壁粘膜的结构，鼓膜的光镜结构。内耳。External ear: the structure of auricle and the wall of external acoustic meatus. Middle ear: the structure of the tympanic cavity and the wall of the pharyngotympanic tube, The ultrastructural features of the tympanum. Internal ear.

第十章 循环系统 The Circulatory System

毛细血管：微细结构、分类、功能。动脉：动脉的一般结构，大动脉、中动脉、小动脉的结构特点及功能。心壁结构特点。Ultrastructure, classification and functions of capillaries. Structure of artery. Structural and functional features of the large, medium-sized and small arteries. The structure of the heart wall.

第十一章 皮肤 Skin

皮肤的结构：表皮（分层，角质形成细胞和非角质形成细胞），真皮，皮下组织，皮肤的附属器（毛发、皮脂腺、汗腺）。Structure of the skin: epidermis (layers, keratinocyte and non-keratinocyte), dermis, hypodermis, skin appendages (hair, sebaceous gland, sweat gland).

第十二章 免疫系统 The Immune System

免疫系统的组成、功能。淋巴细胞的定义、淋巴组织。淋巴器官：胸腺的结构及功能。淋巴结的结构和功能。脾的结构和功能。单核吞噬细胞系统的定义、组成和功能。The composition and function of the immune system. The definition of lymphocyte, and lymphoid tissue. Lymphoid organs: the structure and function of the thymus. The structure and function of the lymph nodes. The structure and function of the spleen. The definition, composition and function of mononuclear phagocyte system.

第十三章 内分泌系统 The Endocrine System

内分泌腺的结构特点及组成。甲状腺、肾上腺的结构特点和功能。垂体的分部，各部的组成和功能。垂体门脉系统的组成及意义。The structural features and composition of the endocrine glands. The structure and function of the thyroid gland and adrenal gland. The subdivision of pituitary gland, the composition and function of each part. The composition and significance of hypophyseal portal system.

第十四章 消化管 Digestive Tract

消化管的一般组织结构。胃壁的组织结构。胃粘膜结构特点：胃上皮、胃底腺。小肠的组织结构，肠粘膜结构特点：肠绒毛、小肠腺。The structure of digestive tract. The structure of gastric wall. The structure of gastric mucosa: gastric epithelium and fundic gland. The intestinal structure and intestinal mucosa structure: intestinal villus and small intestinal gland.

第十五章 消化腺 Digestive Gland

胰腺的结构特点：外分泌部，内分泌部（胰岛）。肝的微细结构：肝小叶（中央静脉、肝细胞、胆小管、肝血窦）、门管区，肝内血液循环通路，肝内胆汁形成和排出途径，肝的主要功能与结构的关系。大唾液腺导管部的组成和结构特征，腮腺、颌下腺的结构特征。The structural features of the pancreas, as the exocrine portion and the endocrine portion (pancreas islet). The substructure of liver: hepatic lobule (central vein, hepatocyte, bile canaliculi, hepatic sinusoid), portal area, blood circulation pathway in the liver, the formation and the transport of bile in the liver. The concepts of structure-function relationships in the liver. The components and structure of the large salivary gland duct, and the structural characteristics of the parotid gland and submandibular gland.

第十六章 呼吸系统 The Respiratory System

气管与支气管的组织结构。肺的组织结构：简介肺导管部（肺内支气管、细支气管、终末细支气管）和肺呼吸部（呼吸性细支气管、肺泡管、肺泡囊、肺泡）。重点讲授肺泡的组成及功能，呼吸膜。The structure of the trachea and

bronchus. The structure of the lung: a brief introduction of the pulmonary conducting portion (bronchopulmonary segment, bronchioles, terminal bronchiole) and pulmonary respiratory portion (respiratory bronchioles, alveolar duct, alveolar sacs, pulmonary alveoli). Focus on the constituent and function of pulmonary alveoli, respiratory membrane.

第十七章 泌尿系统 The Urinary System

一、肾的一般结构，泌尿小管的组成。肾单位：肾小体（血管球、肾小囊、滤过膜），肾小管（近端小管、细段、远端小管）。集合管系。球旁复合体。The structure of the kidney, the constituent of the renal tubule. Nephron: renal corpuscle (glomerulus, glomerular capsule, filtration membrane), renal tubule (proximal tubule, thin segment, distal tubule). The collecting duct system and the juxtaglomerular complex.

二、肾的血液循环特点，肾的主要功能。The characteristics of the blood circulation of the kidney and the main function of the kidney.

第十八章 男性生殖系统 The Male Reproductive System

睾丸：生精小管（生精细胞和精子的发生，支持细胞），精子的结构，睾丸间质细胞。Testis: seminiferous tubules (spermatogenic cell and spermatogenesis, sustentacular cell), sperm structure and Leydig cell.

第十九章 女性生殖系统 The Female Reproductive System

一、卵巢的一般结构。卵泡的发育和成熟、排卵、黄体形成和功能。The general structure of the ovary. Follicular development and maturation, ovulation, corpus luteum formation and the function.

二、子宫壁的一般结构，子宫内膜的周期性变化，卵巢和子宫内膜周期性变化的内分泌调节。The structure of the uterine wall, the periodic changes of the endometrium, the endocrine regulation of the ovarian and endometrial periodic changes.

第二十章 胚胎学绪论 Introduction to Embryology

人体发生的基本过程，人体胚胎学的发展历史，人体胚胎学的研究方法。Human body development. History of human embryology. Methods of studying embryology.

第二十一章 胚胎发生总论 The General Theory of Embryogenesis

人胚发生的概述。受精：条件、过程、意义。人胚早期发生：卵裂及胚泡形成、植入、三胚层的形成、三胚层的分化与胚体的形成。简介“试管婴儿”。胎膜（绒毛膜、羊膜、卵黄囊、尿囊、脐带），胎盘（定义、组成、功能）。An overview of embryogenesis. Fertilization: condition, process, meaning. Development in pre-embryonic period: cleavage and blastocyst formation, implantation, formation of the trilaminar germ disc; differentiation of the trilaminar germ disc and formation of embryonic bodies. A brief introduction of in vitro fertilization. Fetal membranes (chorion, amniotic membrane, yolk sac, allantois, umbilical cord), placenta (definition, composition, function).

Section	Teaching Contents	Chapters	Teaching Hours	Teaching Method	
				Lecture	Lab
1	诸论、上皮组织 Introduction, Epithelial Tissue	Ch. 1.1~2.3	4	2	2
2	结缔组织、血液 1 Connective Tissue, Blood-I	Ch. 3.1~4.4	4	2	2
3	血液 2、软骨和骨 Blood-II, Cartilage and Bone	Ch. 4.5~5.4	4	2	2
4	肌组织、神经组织 1 Muscle Tissue, Nerve Tissue-I	Ch. 6.1~7.3	4	2	2
5	神经组织 2、神经系统 Nerve Tissue-II, the Nervous System	Ch. 7.4~8.6	4	2	2
6	眼和耳 Special Sense Organs: the Eye and Ear	Ch. 9.1~9.2	4	2	2

7	循环系统、皮肤 Circulatory System, Skin	Ch. 10.1~11.3	4	2	2
8	免疫系统 The Immune System	Ch. 12.1~12.3	4	2	2
9	内分泌系统 Endocrine Glands	Ch. 13.1~13.6	4	2	2
10	消化管 1 Digestive Tract-I	Ch. 14.1~14.4	4	2	2
11	消化管 2 Digestive Tract-II	Ch. 14.5~14.8	4	2	2
12	消化腺 Digestive Gland	Ch. 15.1~15.4	4	2	2
13	呼吸系统 The Respiratory System	Ch. 16.1~16.4	4	2	2
14	泌尿系统 The Urinary System	Ch. 17.1~17.2	4	2	2
15	男性生殖系统、女性生殖系统 1 The Male Reproductive System, the Female Reproductive System-I	Ch. 18.1~19.1	4	2	1
	胚胎学绪论 Embryology Introduction	Ch. 20.1~20.2	1	1	
16	女性生殖系统 2 The Female Reproductive System-II	Ch. 19.2~19.5	4	2	1
	胚胎早期发生 Early Embryogenesis	Ch. 21.1~21.8	1	1	
	合计 Total		64	32	32
	考试 Exam		3	2	1

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

教材 Textbooks:

1. 邹仲之. 组织学与胚胎学. 第八版. 北京: 人民卫生出版社, 2013.
2. Anthony L. Mescher. Junqueira's Basic Histology Text and Atlas. 14th ed. Mescher, Mc Graw Hill Education, 2016.

参考书 Reference Books:

1. 邹仲之. 组织学与胚胎学学习指导与习题集. 第三版. 北京: 人民卫生出版社, 2013.
2. 成令忠. 组织学与胚胎学. 北京: 人民卫生出版社, 1998.
3. 高英茂. 组织学与胚胎学. 第三版. 北京: 人民卫生出版. 2015年8月.
4. 石玉秀. 组织学与胚胎学彩色图谱. 第二版. 北京: 高等教育出版. 2014年3月.

课程评估 ASSESSMENT

19. 评估形式 Type of	评估时间 Time	占考试总成绩百分比 % of final	违纪处罚 Penalty	备注 Notes
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Assessment	score		
出勤 Attendance	10		
课堂表现 Class Performance			
小测验 Quiz	30		
课程项目 Projects			
平时作业 Assignments	30		
期中考试 Mid-Term Test			
期末考试 Final Exam	30		包括理论考试 50%，组织切片辨认 20%
期末报告 Final Presentation			
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

