
Systematic Anatomy Syllabus

(For international medical students)

Department of Human Anatomy
Chongqing Medical University
September, 2008

Preface

1. COURSE DESCRIPTION

Human anatomy is one of main courses in medicine. It is also the foundation subjects in medical study. The human anatomy is the science which deals with the morphology and structure of human body. Medical students must know position, shape and regional relationship of the organs and structures in the body.

In this course we will investigate basic human anatomy covering aspects of the 9 major organ systems. This course is appropriate for students in medical technology, pre-nursing, pre-medicine, and related allied health programs. The course is taught in the systemic method meaning that each of the 9 major organ systems is covered one at a time. During this course, students will study all parts of the human body and their normal function, with occasional reference to common abnormalities of function. The course involves A LOT of memorization so be prepared to study!

Lectures, laboratory sessions, self-study, and group learning are all important components of this course. You should spend about 1-3 hours outside of lecture studying for each hour in lecture that material is covered. Keep up with your reading of the textbook and review of lecture notes frequently.

2. CONDUCT OF THE COURSE

This course will consist of two 160-minute lectures and lab performance per week. Be prepared for in-class discussions and laboratory activities by reading the assigned material prior to class. Students will be evaluated by their performance on lecture exams and quizzes, and on laboratory work and practices. Attendance of both the lecture and the laboratories is mandatory. Notification of the instructor prior to an absence is strongly recommended, and absences are excused only for valid reasons (e.g. medical or legal reasons, or emergencies).

3.COURSE OBJECTIVES

After completion of this course, the student will be able to:

1. recognize and describe the anatomical systems within the body;
2. outline the different organizational levels from the cell, the tissue, the organ, and the organ system.
3. perform anatomical exams, animal dissection, and describe and record your findings

Textbook and references

Gray's Anatomy for Students, ISBN 0-443-0661204

Clinical Anatomy for Medical Students, 7th Edition, Richard Snell,
Lippincott

Atlas of Human Anatomy, 4th Edition, Frank Netter

Grant's Atlas of Anatomy, 11th Edition, Agur & Lee, Williams &
Wilkins

A text book of Human Anatomy, 3rd edition, Fang Xiubin Hu Haitao 主编
吉林科技出版社

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Distribution of the Class Hours (total 120 hours)

		Class	Lab
Chapter content		Teaching	Demonstration
		Hours	Hours
Introduction of anatomy		1	
Chapter 1	Locomotor System	3	24
Chapter 2	Splanchnology		
	Digestive System		4
	Respiratory System		4
	Urinary System		4
	Reproductive System		8
Chapter 3	Angiology	4	8
Chapter 4	Sensory Organs		8
Chapter 5	Nervous System	16	35
Chapter 6	Endocrine System		1
Total Hours		24	96

Introduction of anatomy

[Teaching Aim and Requirements]

(1)Mastery: Definition of anatomy; Anatomical position; Axis and plane; Terms of direction.

(2)Familiarity: Parts and system of the body

(3)Understand: Development of anatomy; Classification of anatomy;

[Teaching Contents]

(2)Definition of anatomy

(2)Development of anatomy

(3)Classification of anatomy

(4)Parts and systems of the body

(5)Anatomical position; Axis and plane; Terms of direction.

[Teaching Methods]

Taught by the teacher

[Focal and Difficult Points]

Anatomical position; Terms of direction.

Chapter1 Locomotor System

I. Introduction to the Locomotor System

[Teaching Aim and Requirements]

(1) Mastery: Components of Locomotor system; Classification of bones;

Morphology and structure bones; Basic structures and accessory structure of the joints; Joint movement; Classification, shape and structure of skeletal muscle; The origin, insertion and action of muscles;

(2) Familiarity: Classification of joints; The types of joints

(3) Understand: Chemical composition and physical and properties of the bones; Histogenesis of the bone; Supplementary structures of muscles.

[Teaching Contents]

(1) The composition of locomotor system

(2) Osteology: The classification and the structure of the bones;

Chemical composition and physical and properties of the bones;

(3) Arthrology: The classification and the formation of the joints

(4) Myology: The classification, shape and structure of the muscles;

Supplementary structures of muscles; The nomenclature of the muscles; origin and insertion of muscles; Distribution and cooperation of muscles.

[Teaching Methods]

Taught by the teacher

[Focal and Difficult Points]

(1) The formation of the locomotor system

(2) Movement of articulation.

II. Bones and Joints of the Trunk

[Teaching Aim and Requirements]

- (1) Mastery: the morphology and characteristics of the trunk bones; the general external features of a typical vertebrae; Vertebral Column
- (2) Familiarity: the formation and function of the thoracic cage.

[Teaching Contents]

- (1) The common and special features of the vertebrae.
- (2) The common features of the sacrum、 coccyx、 rib and sternum
- (3) The formation of vertebral column
- (4) The formation of the thoracic cage.

[Teaching Methods]

- (1) General introduction for 30 min (by teacher)
- (2) Observation (by students).
- (3) Summary for 15 min (by both teacher and students).

[Focal and Difficult Points]

- (1) The common and special features of the vertebrae.
- (2) The ligaments of the vertebral column.
- (3) The morphology of the vertebral column as a whole.

III. Bones and Joints of the Upper Limb

[Teaching Aim and Requirements]

- (1) Mastery: the formation, morphology and characteristics of bones of

the upper limb; the joints of the upper limb (including the movement)

(2)Familiarity: the arrangement and morphology of phalanx

[Teaching Contents]

(1) The common and special features of the girdle and free upper limb.

(2) The joints of the upper limb: shoulder joint, elbow joint, wrist joint, the anatomical bases for pronation and supination, the thumb of the carpometacarpal joint.

[Teaching Methods]

(1)General introduction for 30 min (by teachers)

(2)Observation (by students)

(3)Summary15 min (by both teacher and students).

[Focal and Difficult Points]

(1) The shoulder joint and its movement.

(2) The elbow joint and its movement.

(3) The wrist joint and its movement.

IV.Bones and Joints of the Lower Limb

[Teaching Aim and Requirements]

(1) Mastery: the formation, morphology and characteristics of bones of the lower limb; the joints of the lower limb (including the movement); the differences of the male and female pelvis

(2)Familiarity: . sacrotuberous lig. and sacrospinous lig

(3) Understand: the tarsal bones; the metatarsal bones; the phalanges of toes

[Teaching Contents]

- (1) The common and special features of the girdle and free lower limb.
- (2) The joints of the lower limb: bony pelvis; hip joint; knee joint; ankle joint.

[Teaching Methods]

- (1) General introduction for 30 min (by teachers)
- (2) Observation (by students)
- (3) Summary 15 min (by both teacher and students)

[Focal and Difficult Points]

- (1) The formation and the features of the pelvis;
- (2) The formation, accessory structures and movements of the knee joint
- (3) The formation, accessory structures and movements of the hip joint

V. Skull

[Teaching Aim and Requirements]

- (1) Mastery: the formation and division of the skull; the internal and external structures of the skull; the location and formation of the nasal and oral cavities; The location of the openings of paranasal sinuses; the temporomandibular joint.
- (2) Familiarity: the morphology of separated skull; synarthrosis of skull.

(3) Understand: skull of birth.

[Teaching Contents]

(1) The formation and function of skull.

(2) The morphology of the skull as a whole; the internal and external features of the skull

(3) The tempomandibular joint

[Teaching Methods]

(1) General introduction for 30 min (by teachers).

(2) Observation (by students).

(3) Summary 15 min (by both teacher and students).

[Focal and Difficult Points]

(1) The internal and external features of the skull

(2) The communications of the cavities

(3) The transmission of the structures through the cranial foramina

VI. Myology

[Teaching Aim and Requirements]

(1) Master the arrangements of the body muscles

(2) Master the masticatory muscles

(3) Master the diaphragm

(4) Master the major muscles and their movements

[Teaching Contents]

- (1) The arrangements of the body muscles
- (2) The major muscles and the division of the muscles

[Teaching Methods]

- (1) General introduction for 30 min (by teachers)
- (2) Observation (by students)
- (3) Summary 15 min (by both teacher and students)

[Focal and Difficult Points]

- (1) The masticatory muscles
- (2) The movements of the major muscles

Chapter 2 Splanchnology

I. Splanchnology, Digestive System (part one)

[Teaching Aim and Requirements]

- (1) Mastery: the formation and function of the alimentary system; the divisions and features of each alimentary duct
- (2) Familiarity: concept and common features viscera.
- (3) Understand: classification and morphology of teeth.

[Teaching Contents]

- (1) The introduction of splanchnology
- (2) The composition, function of alimentary system;
- (3) The divisions and features of each alimentary duct

[Teaching Methods]

- (1) General introduction for 30 min (by teachers)
- (2) Observation (by students)
- (3) Summary 15 min (by both teacher and students)

[Focal and Difficult Points]

- (1) The formation of alimentary duct; the definition of upper and lower alimentary duct;
- (2) The isthmus of fauces
- (3) The divisions of pharynx
- (4) The constriction of esophagus and its clinic significance
- (5) The difference between large intestine and small intestine; jejunum and ilium.

II. Digestive System (part two)

[Teaching Aim and Requirements]

- (1) Master the division and location and morphology of the liver; The main salivary glands, the biliary tract out of liver.
- (2) Familiarity: the formation and function of the pancreas.

[Teaching Contents]

- (1) The main salivary glands and the location of its opening.
- (2) The division, location and morphology of the liver.
- (3) The biliary tract out of liver.
- (4) The pancreas.

[Teaching Methods]

- (1) General introduction for 30 min (by teachers)
- (2) Observation (by students)
- (3) Summary 15 min (by both teacher and students)

[Teaching Hours] [Focal and Difficult Points]

- (1) The morphology of visceral surface of liver.
- (2) The passage of the common bile duct.

III. Respiratory System

[Teaching Aim and Requirements]

- (1) Master the formation and function of the respiratory system.
- (2) Master the formation of nasal cavity and paranasal sinuses.
- (3) Master the formation of larynx and divisions of the laryngeal cavity.
- (4) Master the key points of the trachea and the lungs

[Teaching Contents]

- (1) The formation and function of the respiratory system; The definition of the upper and lower respiratory tract.
- (2) The divisions communication of nasal cavity.
- (3) The name, opening of paranasal sinuses.
- (4) The formation, division and function of the larynx.

[Teaching Methods]

- (1) General introduction for 30 min (by teachers)

(2) Observation (by students)

(3) Summary 15 min (by both teacher and students)

[Focal and Difficult Points]

(1) The formation, division and function of the larynx

(2) The key points of the trachea and the lungs

IV. Urinary System and Male Reproductive System

[Teaching Aim and Requirements]

(1) Master the formation and function of the urinary system

(2) Master the formation and function of the male reproductive system

(3) Master morphology and location of the testis, epididymis

(4) Master the morphology and location of the accessory glands

(5) Master the morphology and features of the male urethra

[Teaching Contents]

(1) The formation and function of the urinary system

(2) The key point of each part of the urinary system: kidney, ureter, urinary bladder, urethra

(3) The arrangements of the male reproductive system.

(4) The key points of each part: testis, epididymis, ductus deferens and ejaculatory duct, seminal vesicle, prostate and male urethra.

[Teaching Methods]

(1) General introduction for 30 min (by teachers)

(2) Observation (by students)

(3) Summary 15 min (by both teacher and students)

[Focal and Difficult Points]

(1) The location, morphology and coverings of the kidney.

(2) The division, location and constricted parts of the ureters.

(3) The division, feature and course of the ductus deferens.

(4) The morphology and features of the male urethra

V. Female Reproductive System and Peritoneum

[Teaching Aim and Requirements]

(1) Master the formation and function of the female reproductive system

(2) Master the morphology、 location and fixed structures of each ovary

(3) Master the location、 division of the uterine tubes

(4) Master the morphology、 location and division of the uterus

(5) Master the morphology the female breast

[Teaching Contents]

(1) The arrangements of the female reproductive system

(2) The key parts of each parts: ovary, uterine tube, uterus, vagina.

(3) The morphology the female breast.

(4) The definition, division of peritoneum; The peritoneal cavity; The relationship between viscera and peritoneum; The recesses and pouches of peritoneum.

[Teaching Methods]

- (1) General introduction for 30 min (by teachers)
- (2) Observation (by students)
- (3) Summary 30min (by both teacher and students)

[Focal and Difficult Points]

- (1) The fixed structures of the ovary and the uterus
- (2) The location and division of the uterus
- (3) The differences between the male peritoneal cavity and the female peritoneal cavity.

Chapter 3 Angiology

I. Introduction to the Angiology and Heart

[Teaching Aim and Requirements]

- (1) Master the location and morphology of each chamber
- (2) Master the formation and function of the conduction system
- (3) Master course and branches of the coronary arteries.
- (4) Master the formation of the pericardium

[Teaching Contents]

- (1) Introduction of angiology and its function.
- (2) Introduction of cardiovascular system
- (3) The location and morphology of cardiac chambers.
- (4) The conducting system of the heart

- (5) The vessels of the heart.
- (6) The formation of the pericardium

[Teaching Methods]

- (1) General introduction for 30 min (by teachers)
- (2) Observation (by students)
- (3) Summary 15 min (by both teacher and students)

[Focal and Difficult Points]

- (1) The location and morphology of cardiac chamber.
- (2) The course and branches of the coronary arteries.

II. Artery

[Teaching Aim and Requirements]

- (1) Master the course of the pulmonary artery and the location of the arterial ligament.
- (2) Master the course and division of the aorta.
- (3) Master the main branches of each part of the aorta.

[Teaching Contents]

- (1) Introduction of arteries.
- (2) Distribution of artery and arterial circulation of anastomoses.
- (3) Surface landmarks relations of the arteries.
- (4) Arteries of whole body: the arteries of pulmonary circulation and systemic circulation.

[Teaching Methods]

- (1) General introduction for 30 min (by teachers)
- (2) Observation (by students)
- (3) Summary 15 min (by both teacher and students)

[Focal and Difficult Points]

- (1) The main branches of external carotid artery.
- (2) The main branches of abdominal trunk.

III. Veins and Lymphatic System

[Teaching Aim and Requirements]

- (1) Master the features of the vein structures
- (2) Master the course and main tributaries of the vena cava.
- (3) Master the tributaries and anastomoses of the hepatic portal vein.
- (4) Master the formation of the lymphatic system.

[Teaching Contents]

- (1) The character of the veins and factors of venous drainage.
- (2) The course and main tributaries of the vena cava
- (2) The tributaries and anastomoses of the hepatic portal vein
- (3) The formation and function of the lymphatic system.

[Teaching Methods]

Taught by the teacher

[Focal and Difficult Points]

- (1) The tributaries and anatomoses of the hepatic portal vein
- (2) The thoracic duct.

Chapter 4 Sensory organs

I. Visual Organ

[Teaching Aim and Requirements]

- (1) Master the formation and morphology of the visual organ
- (2) Master the formation and the refracting system
- (3) Master the production and circulation of the aqueous humor
- (4) Master the formation of the accessory organs of the eye

[Teaching Contents]

- (1) The introduction of sensory organs.
- (2) The formation and morphology of the visual organ.
- (3) The formation of the accessory organs of the eye.
- (4) The conducting way of light.

[Teaching Methods]

- (1) General introduction for 30 min (by teachers)
- (2) Observation (by students)
- (3) Summary 15 min (by both teacher and students)

[Focal and Difficult Points]

- (1) The production and circulation of the aqueous humor
- (2) The production and secretion passages of the tears.

- (3) The name and function of extraocular muscles
- (4) The composition of the refractive media.

II. Vestibulocochlear Organ

[Teaching Aim and Requirements]

- (1) Master the location and division of the external ear
- (2) Master the location, walls and main structures of the tympanic cavity.
- (3) Master the morphological features of the internal ear.

[Teaching Contents]

- (1) The walls and main structures of the tympanic cavity
- (2) The morphological features of the internal ear.
- (3) The conducting ways of sound waves.

[Teaching Methods]

- (1) General introduction for 30 min (by teachers)
- (2) Observation (by students)
- (3) Summary 15 min (by both teacher and students)

[Focal and Difficult Points]

- (1) The walls and main structures of the tympanic cavity
- (2) The key points of the labyrinth.

Chapter 5 The Nervous System

I. Introduction to Nervous System

[Teaching Aim and Requirements]

- (1) Master the function of the nervous system
- (2) Master the formation, division and features of the nervous system
- (3) Master the activity feature of the nervous system
- (4) Master the formation of the reflex arc.

[Teaching Contents]

- (1) The function of the nervous system
- (2) The formation, division and features of the nervous system
- (3) The basic structure of nervous system: neuron and neuroglia
- (4) The reflection
- (5) Nomenclature of nervous system.

[Teaching Methods]

Taught by the teacher

[Focal and Difficult Points]

- (1) The activity feature of the nervous system
- (2) The formation and division of the nervous system.
- (3) Nomenclature of nervous system.

II. The Spinal Cord

[Teaching Aim and Requirements]

- (1) Master the location and morphology of spinal cord
- (2) Master the relationship of spinal cord with vertebral body

(3) Master the internal structure of spinal cord

[Teaching Contents]

(1) The location and external features of spinal cord.

(2) The relationship between spinal cord and vertebrae

(3) The internal structure of spinal cord: gray matter and white matter

(4) Function of spinal cord.

[Teaching Methods]

(1) General introduction for 30 min (by teachers)

(2) Observation (by students)

(3) Summary 15 min (by both teacher and students)

[Focal and Difficult Points]

(1) The laminae of spinal cord

(2) The main long ascending tracts (fasciculus gracilis and fasciculus cuneatus, spinothalamic tract) of spinal cord.

(3) The main long descending tracts (anterior & lateral corticospinal tracts) of spinal cord.

III. The Brain Stem

[Teaching Aim and Requirements]

(1) Master the morphology of the brain stem and the 4th ventricle

(2) Master the names, locations and functions of the cranial nerve nuclei.

(3) Master the locations and functions of the main tracts.

(4) Master the features of the main transverse sections

[Teaching Contents]

(1) General arrangements of brainstem.

(2) The morphology and external features of the brain stem

(3) The key points of the internal structures

(4) The main features of the main transverse sections

[Teaching Methods]

(1) General introduction for 60 min (by teachers)

(2) Observation (by students)

(3) Summary 30 min (by both teacher and students)

[Focal and Difficult Points]

(1) The locations and functions of the cranial nerve nuclei

(2) The main features of the main transverse sections.

IV. The Cerebellum and Diencephalon

[Teaching Aim and Requirements]

(1) Master the location, morphology and 3 pair of peduncles of the cerebellum.

(2) Master the internal structures of the cerebellum.

(3) Master the division of the thalamic nuclei.

[Teaching Contents]

(1) The external and internal features of the cerebellum.

(2) The division of the thalamic nuclei.

[Teaching Methods]

(1) General introduction for 30 min (by teachers)

(2) Observation (by students)

(3) Summary 15 min (by both teacher and students)

[Focal and Difficult Points]

(1) The internal structure of the cerebellum.

(2) The division of the thalamic nuclei.

IV. The Telencephalon

[Teaching Aim and Requirements]

(1) Master the division and morphology of the telencephalon

(2) Master the functional localization of the cerebral cortex

(3) Master the basic internal structures

[Teaching Contents]

(1) Structures and evolution of the telencephalon.

(2) The morphology and functional localization of the telencephalon

(2) The basic internal structures.

[Teaching Methods]

(1) General introduction for 30 min (by teachers)

(2) Observation (by students)

(3) Summary 15 min (by both teacher and students)

[Focal and Difficult Points]

- (1) The functional localization and the language area
- (2) The basal nuclei.
- (3) The internal capsule and its clinic significance.

V. The Spinal Nerve

[Teaching Aim and Requirements]

- (1) Master the formation and fibers of the spinal nerve
- (2) Master the main branches of each plexus and their functions
- (3) Master the segmental distribution of cutaneous nerves

[Teaching Contents]

- (1) The components of spinal nerves.
- (2) The formation of the spinal nerve: cervical plexus, brachial plexus, thoracic nerve, lumbar plexus and sacral plexus.
- (3) The main branches of each plexus and their functions.
- (4) The segmental distribution of cutaneous nerves.

[Teaching Methods]

- (1) General introduction for 30 min (by teachers)
- (2) Observation (by students)
- (3) Summary 15 min (by both teacher and students)

[Focal and Difficult Points]

- (1) The main branches of each plexus

- (2) The segmental distribution of cutaneous nerves.

V. The Cranial Nerve

[Teaching Aim and Requirements]

- (1) Master the key points of each pair of cranial nerve
- (2) Master the correlated ganglia

[Teaching Contents]

- (1) The general introduction of cranial nerve.
- (2) The differences of cranial nerve and spinal nerve.
- (3) The fibre components, main course and structure of each pair of cranial nerve.
- (4) The location and function of correlated ganglia

[Teaching Methods]

- (1) General introduction for 30 min (by teachers)
- (2) Observation (by students)
- (3) Summary 15 min (by both teacher and students)

[Focal and Difficult Points]

- (1) The III, V, VII, IX cranial nerves.
- (2) The function of correlated ganglia.

VI. Meninges and Vessels of CNS

[Teaching Aim and Requirements]

- (1) Master the meninges and the main spaces of the brain and the spinal cord
- (2) Master the blood supply of the brain and the spinal cord
- (3) Master the location of the ventricles
- (4) Master the production and circulation of the cerebrospinal fluid

[Teaching Contents]

- (1) The meninges of the brain and the spinal cord
- (2) The blood supply of the brain and the spinal cord
- (3) The production and circulation of the cerebrospinal fluid

[Teaching Methods]

- (1) General introduction for 30 min (by teachers)
- (2) Observation (by students)
- (3) Summary 15 min (by both teacher and students)

[Focal and Difficult Points]

- (1) The location and the morphology of the ventricles
- (2) The meninges and blood supply of the brain.

VII. The Autonomous System

[Teaching Aim and Requirements]

- (1) Master the formation of sympathetic and parasympathetic systems
- (2) Master the major ganglia of sympathetic and parasympathetic systems

[Teaching Contents]

- (1) The formation of sympathetic and parasympathetic systems
- (2) The major ganglia of sympathetic and parasympathetic
- (3) The differences between sympathetic and parasympathetic nerve.
- (4) Feeling of visceral organs and concept of the relational pain.

[Teaching Methods]

Taught by the teacher

[Focal and Difficult Points]

The formation of sympathetic and parasympathetic systems

VIII. The Sensory Pathway

[Teaching Aim and Requirements]

- (1) Master the course of the major sensory tracts: pathways for conscious proprioception, pathways for pain, temperature and touch; visual pathway and the papillary light reaction, dysfunction after injury.
- (2) Master the location of each relay nuclei
- (3) Master the function of each sensory tract

[Teaching Contents]

- (1) Pathway for conscious proprioception of trunk and limbs.
- (2) Pathway for pain temperature and touch of trunk and limbs
- (3) Pathway for pain temperature and touch of head and neck.
- (4) Visual pathway and the papillary light reaction, dysfunction after injury.

[Teaching Methods]

Taught by the teacher

[Focal and Difficult Points]

- (1) The course of the major sensory tracts
- (2) The location of each relay nuclei

IX. The Motor Pathway

[Teaching Aim and Requirements]

- (1) Master the course of the major motor tracts: pyramidal system and extrapyramidal system.
- (2) Master the location of each relay nuclei
- (3) Master the function of each motor tract

[Teaching Contents]

- (1) The pyramidal system: corticospinal tract and corticonuclear tract.
- (2) The function of each relay nuclei.
- (3) The extrapyramidal system.

[Teaching Methods]

Taught by the teacher

[Focal and Difficult Points]

The pyramidal system: Corticospinal tract and corticonuclear tract.

Chapter 6 Endocrine system

[Teaching Aim and Requirements]

- (1) Master the location and morphology of thyroid gland, parathyroid gland, suprarenal gland, pineal body.
- (2) Understand the characteristics, types and function of endocrine system.

[Teaching Contents]

- (1) Introduction of endocrine system and its function.
- (2) Location and morphology of thyroid gland, parathyroid gland, suprarenal gland, pineal body

[Teaching Methods]

- (1) General introduction for 20 min (by teachers)
- (2) Observation (by students)
- (3) Summary 10 min (by both teacher and students)

[Focal and Difficult Points]

The morphology of thyroid gland.