School of medicine

Format of course plan for the first semester of 1399-1400

Course title: Neuroanatomy

The audiences: International medical students 5th semester

Total credit: 1.5

The time to answer of questions: Saturday 8.15-10.15

The time of the lesson: Mondays 10.15-12.15

Instructor: Dr. Ali Ghanbari

Prerequisite: All aspect of anatomy (General, Musculoskeletal system, Digestive, Cardiovascular and Respiratory)

General goals of the course:

To comprehend neuroanatomical structures, their relations, their blood supplies in the human body in accompany with the study of disorders caused by diseases, including motor and sensory disorders.

General goals of sessions:

1- To describe the Nero anatomy as a whole.

2- To describe white and gray matters of spinal cord.

3- To describe tracts in spinal cord and related disorders.

4- To describe white and gray matters of medulla oblongata and its tracts and disorders.

5- To describe white and gray matters of pons and its tracts and disorders.

6- To describe white and gray matters of midbrain and its tracts and disorders.

7- To describe white and gray matters of cerebellum and its tracts and disorders.

8- To describe white and gray matters of thalamus and its tracts and disorders.

9- To describe white and gray matters of hypothalamus, sub-thalamus, Epi-thalamus and its tracts and disorders.

10- To describe white and gray matter of cerebrum.

11- To describe limbic system.

12- To describe blood supply of central nervous system.

13- To describe the meninges

14- To describe the cerebrospinal fluid (C. S. F)

Specific Goals By the general purpose of each session

General goals of the first lesson :

To describe the Nero anatomy as a whole.

Special goals of the first lesson :

To brief describe the neuroanatomical terms such as neurons, axon, dendrites, white and gray matter and their specified forms. To describe the synapse and neurotransmitters. To describe the division of human nervous system physiologically and anatomically. To explain the sub- divisions of C.N.S and P.N.S.

General goals of the second lesson :

To describe white and gray matters of spinal cord.

Special goals of the second lesson :

To comprehend external features of spinal cords such as its length, shape, and fissures. To determine the fasciculus and funiculus of spinal cord with emphasis on their works, and related paralysis outcomes, respectively. To make details to describe nuclei components of each gray matter horn of spinal cord with emphasis on their works, and related paralysis outcomes, respectively.

General goals of the third lesson:

To describe tracts in spinal cord and related disorders.

Special goals of the third lesson:

To comprehend tracts, regarding their origination and termination, involving in each fasciculus, respectively with emphasis on their works, and related paralysis outcomes.

General goals of the forth lesson :

To describe white and gray matters of medulla oblongata with addressing its related tracts and disorders.

Special goals of the forth lesson:

To comprehend external features of medulla oblongata such as its length, shape, and fissures. To determine the white and gray matters of medulla oblongata with emphasis on their works, and related paralysis outcomes, respectively. Make detail To describe nuclei, descending, and ascending tracts in medulla oblongata.

General goals of the fifth lesson:

To describe white and gray matters of pons with addressing its related tracts and disorders.

Special goals of the fifth lesson:

To comprehend external features of pons such as its length, shape, and fissures. To determine the white and gray matters of pons with emphasis on their works, and related paralysis outcomes, respectively. To make detail to describe nuclei, descending, and ascending tracts in pons.

General goals of the sixth lesson:

To describe white and gray matters of midbrain with addressing its related tracts and disorders.

Special goals of the sixth lesson:

To comprehend external features of midbrain such as its length, shape, and fissures. To determine the white and gray matters of midbrain with emphasis on their works, and related paralysis outcomes, respectively. To make detail to describe nuclei, descending, and ascending tracts in midbrain.

General goals of the seventh lesson:

To describe white and gray matters of cerebellum with addressing its related tracts and disorders.

Special goals of the seventh lesson:

To comprehend external features of cerebellum such as its length, shape, fissures, lobules, and peduncles. To determine the white and gray matters of cerebellum with emphasis on their works, and related paralysis outcomes, respectively. To make detail to describe nuclei, descending, and ascending tracts in cerebellum. To explain the regions related to Arceocebellum, Paleocerebellum, and Neocerebellum anatomically and functionally.

General goals of the eighth lesson :

To describe white and gray matters of thalamus with addressing its related tracts and disorders.

Special goals of the eighth lesson:

To describe the white matter and gray matter of thalamus and to explana its nuclei, the connections, locations and works of them, respectively. To explain the disorders related to thalamus like thalamic hand syndrome.

General goals of the ninth lesson :

To describe white and gray matters of hypothalamus, sub-thalamus, epi-thalamus with

addressing its related tracts and disorders.

Special goals of the ninth lesson:

To describe the white matter and gray matter of these anatomical structures. To explain their nuclei, the connections, locations and works of them would be presented, respectively. To discuss the efferent and afferent fibers. To explain the disorders related to these structures like hemiballismus.

General goals of the tenth lesson :

To describe white and gray matter of cerebrum.

Special goals of the tenth lesson:

To explain the white matter and gray matter of cerebrum and give some details regarding the location and composition of capsules of white matter in accompany with prescription of the main brodmann areas. To discuss the white matter and gray matter of cerebrum, the disorders related to these structures like sensory and motor paralysis.

General goals of the eleventh lesson :

To describe limbic system.

Special goals of the eleventh lesson:

To describe the internal and external circles of limbic system and related regions such as sub-calosal area, hippocampus, anterior thalamic nucleus, cingulate gyrus, fornix, and mammillary body. To discuss the function and the structure of Pepez circuit.

General goals of the twelfth lesson :

To describe the blood supply of central nervous system.

Special goals of the twelfth lesson:

To describe the arteries supplying spinal cord and cerebrum, respectively. Make some details about the Ave-cina (Vilis) arterial circle, its arising branches and their supplied related regions.

General goals of the thirteen lesson :

To explain the meninges

Special goals of the thirteen lesson:

To comprehend three layers of meninges; piamater, arachnoid, and duramater. To describe

the appendices of duramater. To explain the vascular and nerve supply of each region of meninges.

General goals of the fourteen lesson :

To explain the cerebrospinal fluid(C.S.F)

Special goals of the fourteen lesson:

To comprehend the manner of secretion, and circulation of C.C.F. To explain meningeal sinuses and the formation of jugular vein.

At the end of the class, the student's abilities would be:

1- Able to describe the Nero anatomy as a whole.

2- Able to describe white and gray matters of spinal cord.

3- Able to describe tracts in spinal cord and related disorders.

4- Able to describe white and gray matters of medulla oblongata with addressing its related tracts and disorders.

5- Able to describe white and gray matters of pons with addressing its related tracts and disorders.

6- Able to describe white and gray matters of midbrain with addressing its related tracts and disorders.

7- Able to describe white and gray matters of cerebellum with addressing its related tracts and disorders.

8- Able to describe white and gray matters of thalamus with addressing its related tracts and disorders.

9- Able to describe white and gray matters of hypothalamus, sub-thalamus, epithalamus with addressing its related tracts and disorders.

10- Able to describe white and gray matter of cerebrum.

11- Able to describe limbic system.

12- Able to describe blood supply of central nervous system.

References:

1- Nero anatomy. Mohammad akbari, Tehran University of Medical Sciences

2- Snell neuroanatomy for medical students

3- Sobotta's atlas of anatomy, Volume III

Educational tools:

On-line and off-line virtual education

Assessment and evaluation of the test

Considered time For answering	Date	Share of total score (in percent)	Method	Test
15 min for each quiz	End of each session	6	Short answer, Multi-choice or painting	**Homework**
40 min	End of the term	14	Multi-choice	**Final Exam**

Classroom roles and student expectations:

Since this semester is presented virtually, students are required to upload and read all the content uploaded in the Navid system, as well as to prepare and submit homework related to the course on time.

Schedule of Neuroanatomy for international students

Neuroanatomy exam99 /11/5

Theory program of neuroanatomy (Total credit:1.5)

First semester 1399-1400

Instructor: Dr. Ali Ghanbari

	Days	Topic	Date	
	Saturdays	Characterization of neuroanatomical terms and presentation of the human nervous system as a whole	99/6/22	۱
	Saturdays	External anatomical features of the spinal cord	99/6/29	۲
	Saturdays	Internal structure of the spinal cord	99/7/5	۳
	Saturdays	External and Internal structures of the medulla oblongata	99/7/12	۴
	Saturdays	External and Internal structures of the pons	99/7/19	۵
	Saturdays	External and Internal structures of the midbrain	99/8/3	۶
	Saturdays	Gray and white matter of cerebellum	99/8/10	۷
	Saturdays	External and Internal structure of thalamus	۱۷/۸/۹۹	۸
	Saturdays	External and Internal structure of hypothalamus, epithalamus, sub-thalamus	۲۵/۸/۹۹	۹
	Saturdays	Gray and white matter of cerebrum	۱/۹/۹۹	۱۰
	Saturdays	Limbic system	۸/۹/۹۹	۱۱
	Saturdays	Arterial supply of central nervous system	۱۵/۹/۹۹	۱۲
	Saturdays	The meninges	۹۲۳/۹۹	۱۳
	Saturdays	C.S.F	۳۰/۹/۹۹	۱۴

Name of God

Practical program of neuroanatomy (Total credit: 0.4)

First semester 1399-1400

Instructor: Dr. Ali Ghanbari

	Topic	Date	Days

	Presentation of the human nervous system as a whole	99/6/2۹	Saturdays
	Spinal cord	99/7/5	Saturdays
	Brain stem	99/8/10	Saturdays
	Cerebellum	۲۵/۸/۹۹	Saturdays
	Cerebrum	۸/۹/۹۹	Saturdays
	Limbic system	۱۵/۹/۹۹	Saturdays
	Arterial supply of central nervous system	۳۰/۹/۹۹	Saturdays
	The meninges and C.S.F turn over	۹۹/۱۰/۷	Saturdays