MASTER (MSC) DEGREE PROGRAM AND COURSES SPECIFICATIONS FOR NEUROSURGERY

(According to currently applied credit points bylaws)

Name of department
Faculty of Medicine
Assiut University
2021 -2022/2022-2023

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Master degree of Neurosurgery

A. Basic Information

- **Program Title:** Master degree of Neurosurgery
- **Nature of the program: Single.**
- **Responsible Department:** Department of Neurosurgery- Faculty-of Medicine- Assiut University
- **Program Academic Director (Head of the Department):** Prof. Mohamed Khallaf
- **Coordinator (s):**
  - **Principle coordinator:** Prof: Ahmed Alghyriany
  - **Assistant coordinator (s)**
    Dr Ahmed Elshanawany
    Dr Farrag Mohammed Farrag
    Dr Ismail Taha
- **Internal evaluators: Professor. Mohamed Teghian Ahmed**
- **External evaluator :Prof. Dr Ahmed maraay**
  Prof. Dr Abdelkafy Sharaf
- **Date of Approval by the Faculty of Medicine Council of Assiut University:** 23 -9- 2017
- **Date of most recent approval of program specification by the Faculty of Medicine Council of Assiut University:** 27- 11 - 2022

- **Total number of courses**: 7 courses
  - First part: 6 courses
  - Second part: 1 course

B. Professional Information

1- Program aims

1/1 To enable candidates to Acquire satisfactory level of clinical skills, bedside care skills, in addition to update medical knowledge as well as clinical experience and competence in the area of Neurosurgery and enabling the candidates of making appropriate referrals to a sub-specialist

1/2 To introduce candidates to the basics of scientific medical research

1/3-Enable candidates to start professional careers as specialists in Egypt but recognized abroad.

1/4 To enable candidates to understand and get the best of published scientific research and do their own.

2- Intended learning outcomes (ILOs) *for the whole program*:

2/1Knowledge and understanding:

A. Explain the essential facts and principles of relevant basic sciences including Neuro-Anatomy, Histology of the nervous system and Neuro- Physiology and Neuropathology**,** related to Neurosurgery.

B. Mention essential facts of clinically supportive sciences including –General Surgery and Neurological diseases related to Neurosurgery.

C. Demonstrate sufficient knowledge of etiology, clinical picture, diagnosis, prevention and treatment of the common diseases and situations related to Neurosurgery.

D. Give the recent and update developments in the pathogenesis, diagnosis, prevention and treatment of common diseases related to Neurosurgery.

E. Mention the basic ethical and medicolegal principles that should be applied in practice and are relevant to the Neurosurgery.

F. Mention the basics and standards of quality assurance to ensure good clinical care practice in the field of Neurosurgery.

G. Mention the ethical and scientific principles of medical research methodology.

H. State the impact of common health problems in the field of Neurosurgery on the society and how good clinical practice improve these problems.

2/2 Intellectual outcomes

A. Correlate the facts of relevant basic and clinically supportive sciences with clinical reasoning, diagnosis and management of common diseases of the Neurosurgery.
B. Demonstrate an investigatory and analytic thinking approach (problem solving) to common clinical situations related to Neurosurgery.
C. Design and /or present a case or review (through seminars/journal clubs.) in one or more of common clinical problems relevant to the field of Neurosurgery.
D. Formulate management plans and alternative decisions in different situations in the field of the Neurosurgery.

2/3 Skills

2/3/1 Practical skills (Patient Care)

A. Obtain proper history and examine patients in caring and respectful behaviors.
B. Make informed decisions about diagnostic and therapeutic interventions based on patient information and preferences, up-to-date scientific evidence, and clinical judgment for common conditions related to Neurosurgery.
C. Carry out patient management plans for common conditions related to Neurosurgery.

D. Use information technology to support patient care decisions and patient education in common clinical situations related to Neurosurgery.
E. Perform competently non invasive and invasive procedures considered essential for the Neurosurgery.
F. Provide health care services aimed at preventing health problems related to Neurosurgery.
G. Provide patient-focused care in common conditions related to Neurosurgery, while working with health care professionals, including those from other disciplines
H-Write competently all forms of patient charts and sheets including reports evaluating these charts and sheets (Write a consultation note, Inform patients of a diagnosis and therapeutic plan, completing and maintaining medical records)

2/3/2 General skills

Including:

- Practice-based Learning and Improvement
- Interpersonal and Communication Skills
- Professionalism
- Systems-based Practice

Practice-Based Learning and Improvement

A. Perform practice-based improvement activities using a systematic methodology (share in audits and risk management activities and use logbooks).
C. Conduct epidemiological Studies and surveys.
D. Perform data management including data entry and analysis using information technology to manage information, access on-line medical information; and support their own education.
E. Facilitate learning of students and other health care professionals including their evaluation and assessment.

Interpersonal and Communication Skills

F. Maintain therapeutic and ethically sound relationship with patients.

G. Elicit information using effective nonverbal, explanatory, questioning, and writing skills.

H. Provide information using effective nonverbal, explanatory, questioning, and writing skills.

I. Work effectively with others as a member of a health care team or other professional group.

Professionalism

J. Demonstrate respect, compassion, and integrity; a responsiveness to the needs of patients and society

K. Demonstrate a commitment to ethical principles including provision or withholding of clinical care, confidentiality of patient information, informed consent, business practices

L. Demonstrate sensitivity and responsiveness to patients' culture, age, gender, and disabilities

Systems-Based Practice

M. Work effectively in relevant health care delivery settings and systems including good administrative and time management.

N. Practice cost-effective health care and resource allocation that does not compromise quality of care.

O. Assist patients in dealing with system complexities.

3- Program Academic Reference Standards (ARS) (Annex 2)

Academic standards for master degree in Neurosurgery

Assiut Faculty of Medicine developed master degree programs' academic standards for different clinical specialties.

In preparing these standards, the General Academic Reference Standards for post graduate programs (GARS) were adopted. These standards set out the graduate attributes and academic characteristics that are expected to be achieved by the end of the program. These standards were approved by the Faculty Council on 17-6- 2009. These standards were revised and approved without changes by Faculty Council on 23-9-2014.

These standards were re-revised and approved without changes by Faculty Council on 27-11-2022

4- Program External References (Benchmarks)

1. ACGME (Accreditation Council for Graduate Medical Education).

http://www.acgme.org/acWebsite/navPages/nav_Public.asp

2.THE NEUROSURGERY residency program at the George Washington University

http://www.gwneurosurgery.com/rp.shtml

Comparison between program and external reference		
Item	**Master degree of Neurosurgery Assuit university Hospital**	**THE NEUROSURGERY residency program at the George Washington University**
Goals	Matched	Matched
ILOS	Matched	Matched
Duration	3-5 years	5 years
Requirement	Different	different
Program structure	different	different

A. Duration of program: **3 – 5 years**

B. Structure of the program:

Total number of credit point: 180 (20 out of them for thesis)

Didactic 40 (22.2 %), practical 120 (66.7 %), thesis 20 (11.1%) total 180

First part

Didactic 14 (35 %), practical 24 (60 %), elective course 2 CP (5%), total 40

Second part

Didactic 24, (20% %) practical 96 (80 %) total 120

According the currently applied credit points bylaws:

Total courses 160 credit point ``

Compulsory courses: 98.75%

Elective course: 2 credit point =1.25%

	Credit points	% from total
Basic science courses	24	13.3%
Humanity and social courses	2	1.1%
Speciality courses	134	74.5%
Others (Computer, …)		
Field training	120	66.7%
Thesis	20	11.1%

C. Program Time Table

A. Duration of program 3 years maximally 5 years divided into

- **Part 1: (One year)**

  Program-related basic science courses and ILOs

  Students are allowed to sit the exams of these courses after 12 months from applying to the MSc degree.

  One elective course can be set during either the 1st or 2nd parts.

- **Thesis**

  For the M Sc thesis;

  MSc thesis subject should be officially registered within 6 months from application to the MSc degree,

Discussion and acceptance of the thesis could be set after 12 months from registering the MSc subject;
It should be discussed and accepted before passing the second part of examination)

- **Part 2 (2 years)**

Program –related speciality courses and ILOs
Students are not allowed to sit the exams of these courses before 3 years from applying to the MSc degree.
The students pass if they get 50% from the written exams and 60% from oral and clinical/practical exams of each course and 60% of summation of the written exams, oral and clinical /practical exams of each course
Total degrees 1900 marks.
700 marks for first part
1200 for second part
Written exam 40% - 70%.
Clinical /practical and oral exams 30% - 60%.

Curriculum Structure: (Courses):

Year 1

The first year of the fellowship is primarily for basic science related medical knowledge and a clinical year during which the fellows gain experience with a wide variety of patients in inpatient and outpatient settings, develop proficiency in the performance and appropriate utilization of various procedures, and develop proficiency in the utilization and interpretation of CNS radiology. Throughout the year, emphasis is placed on developing: 1) an understanding of basic mechanisms and path physiology of neurosurgery disease like head trauma, neural tube defect, spinal cord compression

2) The ability to efficiently formulate clinical assessments and therapeutic plans;

The first year fellow spends the year rotating among five different services: 1) general surgery; 2) Neurology 3) different academic department

Years 2 and 3

Although the primary focus of the second and third year is the development of skills and experience in research (see below), senior fellows continue to participate in clinical activities and certain procedures. First, they maintain their longitudinal outpatient and inpatient clinic experience throughout these years. Senior fellows will also actively participate in the regular weekly scientific seminars and collaborate with those fellows in their first year. Approximately by the end of the first year, fellows are expected to identify a research area in which the subsequent two years will be focused. By the beginning of the second year, the fellow presents a conference in which he/she synthesizes existing knowledge, presents the problem for investigation, and describes the proposed plan of investigation. The faculty members and fellows in attendance provide feedback to the fellow and supervisors about the proposed project; this process of peer review provides a useful experience for the fellow and often strengthens the experimental approach.

During the second and third years, the trainee carries out the proposed work in the clinical research facilities of the faculty mentor(s). The trainee also benefits from interactions with other trainees, technicians, and collaborating investigators. The trainee also participates in laboratory meetings and journal clubs specific to individual research groups. Presenting research

findings at regional and national meetings and submitting work for publication are both important aspects of the investigative endeavor. The trainee will receive guidance and specific assistance in learning to prepare data for oral and written presentation, to prepare graphics, and to organize talks and prepare slides. Throughout the two-year research training period, it is anticipated that the fellow will assume increasing intellectual responsibility and technical independence.

Research Pathway

Selection of a research project and supervisors is subject to the approval of the Department council approval and vice-Dean of post graduate studies of the faculty as officially regulated. Fellows may select Clinical trial, Meta Analysis/ Systematic Review, Clinical Audit, Epidemiological Studies. For all Master degree students, a research advisory committee will be selected by the fellow based on the approved regulatory rules of the faculty council. This committee will monitor the progress of research fellows and provide advice regarding research training and career development

Levels and courses of the program:

Courses and student work load list	Course Code	Didactic	training	total
First Part				
Basic science courses (8CP)				
Course1: Neuroanatomy	NES201	2	-	2
Course 2: Histology of Nervous system	NES202	2	-	2
Course 3: Neuro- Physiology	NES203	2	-	2
Course 4: Neuro-pathology	NES205	2	-	2
General clinical compulsory courses (6 points)				
Course 5 : General surgery	NES211	3		3
Course6:Neurological diseases	NES220	3		3
Elective courses*	2CP			
Clinical training and scientific activities:				
Clinical training in General Clinical compulsory courses (10 CP)				
General surgery	NES211		3	3
Neurological diseases	NES220		7	7
Clinical training and scientific activities in Speciality course (14 CP)				
Neurosurgery	NES214	14		14
Total of first part		16	24	40

Second Part	Speciality courses 24 CP Speciality Clinical Work 96 CP		
Speciality Courses **1) Course 7 Neurosurgery**	NES214	24	24
Training and practical activities in speciality (96 CP)	NES214	96	96
Total of the second part		**24** **96**	**120**
Thesis	20		
Total of the degree	180		

* Elective courses can be taken during either the 1st or 2nd parts.

Student work load calculation:

Work load hours are scheduled depending on the type of activities and targeted competences and skills in different courses

Elective Courses#:

- Medical statistics.
- Evidence based medicine.
- Medicolegal Aspects and Ethics in Medical Practice and Scientific Research
- Quality assurance of medical education
- Quality assurance of clinical practice.
- Hospital management

One of the above mentioned courses are prerequisites for fulfillment of the degree.

Thesis:

20 CP are appointed to the completion and acceptance of the thesis.

6. Courses Contents (Annex 1)

The competency based objectives for each course/module/rotation are specified in conjunction with teaching/training methods, requirements for achieving these objectives and assessment methods.

See Annex 1 for detailed specifications for each course/ module

7-Admission requirements

- **Admission Requirements (prerequisites) if any :**
  - **General Requirements:**
    - MBBCh Degree form any Egyptian Faculties of Medicine
    - Equivalent Degree from medical schools abroad approved by the Ministry of Higher Education

    Specific Requirements:

    - Fluent in English (study language)

VACATIONS AND STUDY LEAVE

The current departmental policy is the current departmental policy is to give working residents 2 week leave prior to first/ second part exams.

FEES:

As regulated by the postgraduate studies rules and approved by the faculty vice dean of post graduate studies and the faculty and university councils.

8-Progression and completion requirements

- Examinations of the first part could be set at 12 months from registering to the MSc degree.
- Examination of the second part cannot be set before 3 years from registering to the degree.

- Discussion of the MSc thesis could be set after 1 year from officially registering the MSc subject before setting the second part exams.
- The minimum duration of the program is 3 years.

The students are offered the degree when:

1. Passing the exams of all basic science, elective and speciality courses of this program as regulated by the post graduates approved rules by the faculty council.
2. Completing all scheduled CP and log book (minimum 80%).
3. Discussion and acceptance of the MSc thesis.

9- Program assessment methods and rules (Annex IV)

Method	ILOs measured
Written examinations: **Structured essay questions** **Objective questions:** **MCQ** **Problem solving**	**K & I**
Clinical: **Long/short cases** **OSCE**	**K ,I, P &G skills**
Structured oral	**K ,I &G skills**
Logbook assessment	**All**
Research assignment	**I &G skills**

Weighting of assessments:

Courses		Degrees			
Courses	**Course Code**	**Written Exam**	**Oral Exam ***	**Practical / Clinical Exam**	**Total**
First part					
Neuro-Anatomy	NES201	50	50		100
Histology of Nervous system	NES202	50	50		100
Neuro-Physiology	NES203	50	50		100
Neuropathology	NES205	50	50		100
General Surgery	NES211	75	30	45	150
Neurological Diseases	NES220	75	30	45	150
Total of the first part					700
Second Part					
Speciality Courses:					
Neurosurgery PAPER 1 PAPER 2 PAPER 3 PAPER 4	NES214	 150 150 150 150	300	300	1200
Total of the degree		600	300	300	1200
Elective course					

* 25% of the oral exam for assessment of logbook

700 marks for first part

1200 for second part

Written exam 50% (600 marks).

Clinical/practical and oral exams 50% (600 marks)

Examination system:

First part:

- Written exam 2 hours in Neuro anatomy + Oral exam
- Written exam 2 hours in histology of nervous system + Oral exam
- Written exam 2 hours in Neurophysiology + Oral exam
- Written exam 2 hours in Neuropathology + Oral exam
- Written exam 2 hours in General Surgery + Oral exam+ Clinical exam
- Written exam 2 hours in Neurosurgical diseases + Oral exam+ Clinical exam

Second part:

- Written exam 4 papers 3 hours for each Neurosurgery + Oral exam+ Clinical/practical exam

Elective courses

- Written exam one paper 1 hour in Elective course + Oral & Practical exam

10-Program evaluation

By whom	Method	sample
Quality Assurance Unit	Reports Field visits	#
External Evaluator (s):According to department council External Examiner (s): According to department council	Reports Field visits	#
Stakeholders	Reports Field visits Questionnaires	#
Senior students	Questionnaires	#
Alumni	Questionnaires	#

#Annex 5 contains evaluation templates and reports (Joined in the departmental folder).

11-Declaration

We certify that all of the information required to deliver this program is contained in the above specification and will be implemented.

All course specifications for this program are in place.

Contributor	Name	Signature	Date
Program Principle Coordinator:	- **Prof Ahmed Alghyriany**		**9/2022**
Head of the Responsible Department (Program Academic Director):	**Prof Mohamed Khallaf**		**9/2022**

Annex 1, Specifications for Courses / Modules

Annex 1: specifications for courses

First Part

Course 1- Neuro-anatomy

Name of department: Neurosurgery

Faculty of medicine

Assiut University

2021-2022

1. Course data

- **Course Title: Neuro-anatomy**
- Course code: NES201
- **Speciality: Neurosurgery.**
- **Number of Credit points. Didactic 2(100%)practical 0(0%) total 2**
- **Department (s) delivering the course:** Anatomy **in conjunction with neurosurgery**
- **Coordinator (s):**

  Staff members of Anatomy Department in conjunction with Neurosurgery Department as annually approved by both departments' councils
- **Date last reviewed: 9/ 2022**
- **Requirements (prerequisites) if any :**
  - **-None**

2. Course aims

The student should acquire the anatomic facts necessary for Neurosurgery.

3. Intended learning outcomes (ILOs):

A- Knowledge and understanding

ILOs	Methods of teaching/ learning	*Methods of Evaluation*
A. Mention anatomic Principles of 1-osteology of skull vertebra 2- Head, neck scalp 3-Intracranial content Meninges and CSF Gross anatomy of brain Cerebral cortex Structure-of epencephalon, diencephalon, hypothalmus Corpus callosum 4- Blood supply of central nervous system 5-Development and histogenesis of central nervous system 6-Autonomic nervous system 7-Spinal cord -Gross anatomy - Tract of spinal cord 8- segmental innervation, plexuses and peripheral nerve	- Didactic (lectures, seminars, tutorial) - journal club,	-Written and oral examination - Log book
B-Describe the applied Surgical anatomy of the brain and spinal cord		

B-Intellectual outcomes

ILOs	Methods of teaching/ learning	Methods of Evaluation
A. Correlates the facts of Anatomy with clinical reasoning, diagnosis and management of common diseases related to Neurosurgery.	Didactic (lectures, seminars, tutorial)	-Written and oral examination -Log book

C-Practical skills = 0

D-General Skills

Practice-Based Learning and Improvement

ILOs	Methods of teaching/ learning	Methods of Evaluation
A-Use information technology to manage information, access on-line medical information; and support their own education	-Observation and supervision -Written and oral communication	Oral Exam Logbook

Interpersonal and Communication Skills

ILOs	Methods of teaching/ learning	Methods of Evaluation
B. Write a report in common condition mentioned in A.A and A.B.	-Observation and supervision -Written and oral communication	Log book

Professionalism

ILOs	Methods of teaching/ learning	Methods of Evaluation
C. Demonstrate a commitment to ethical principles	-Observation -Senior staff experience	Oral Exam Logbook

Systems-Based Practice

ILOs	Methods of teaching/ learning	Methods of Evaluation
D. Work effectively in relevant health care delivery settings and systems.	-Observation -Senior staff experience	360o global rating

4. Course contents (topic s/modules/rotation
Course Matrix

Time Schedule: First Part

Topic	Covered ILOs			
	Knowledge A	Intellectual B	Practical skill C	General Skills D
1-osteology of skull vertebra	A	A	-	A-D
2- Head, neck scalp	A	A	-	A-D
3-Intracranial content				
Meninges and CSF	A	A	-	A-D
Gross anatomy of brain	A	A	-	A-D
Cerebral cortex				
Structure-of epencephalon, diencephalon, hypothalmus	A	A	-	A-D
Corpus callosum	A	A	-	A-D
4- Blood supply of central nervous system	A	A	-	A-D
5-Development and histogenesis of central nervous system	A	A	-	A-D
6-Autonomic nervous system	A	A	-	A-D
7-Spinal cord				
-Gross anatomy	A	A	-	A-D
- Tract of spinal cord	A	A	-	A-D
8- segmental innervation, plexuses and peripheral nerve	A	A	-	A-D
9-The applied Surgical anatomy of the brain and spinal cord	B	A	-	A-D

5. Course Methods of teaching/learning:

1. Didactic (lectures, seminars, tutorial)
2. Observation and supervision
3. Written & oral communication
4. Senior staff experience

6. Course Methods of teaching/learning: for students with poor achievements

1. Extra Didactic (lectures, seminars, tutorial) according to their needs
2. Extra Laboratory work according to their needs

7. Course assessment methods:

i. Assessment tools:

1. Written and oral examination
2. Log book

ii. Time schedule: At the end of the first part

iii. Marks: 100

8. List of references

i. Lectures notes

- Course notes
- Staff members print out of lectures and/or CD copies

ii. Essential books

- Text book written by The Department of Anatomy

iii. Recommended books

Sameh Dos Neuroanatomy

Sameh Dos Head and neck anatomy

Netter's Atlas of Neuroanatomy

Nour eldin Neuroanatomy text book

v. others

None

9. Signature

Course Coordinator: ……..	**Head of the Department:** ……
Date: 9/ 2021	**Date: 9/ 2021**

Course 2 Histology of Nervous System

Name of department: Neurosurgery

Faculty of medicine

Assiut University

1. Course data

- **Course Title: Histology of Nervous System**
- Course code: NES202
- **Speciality…Neurosurgery.**
- **Number of Credit points : Didactic 2 (100) practical 0 (0%) Total 2.**
- **Department (s) delivering the course: Histology in conjunction with neurosurgery**
- **Coordinator (s):**

  Staff members of Histology **Department in conjunction with Neurosurgery Department as annually approved by both departments' councils**
- **Date last reviewed: 9/ 2022**
- **Requirements (prerequisites) if any :**
  - **-None**

2. Course aims

-The student should acquire the histological facts necessary for Neurosurgery

3. Intended learning outcomes (ILOs):

A- Knowledge and understanding

ILOs	Methods of teaching/ learning	*Methods of Evaluation*
A. Mention Histologic Principles of: -1-Meninges , choroid plexus 2-Blood- brain barrier 3-Neuron 4-Neurolgia 5-Nerve ending (receptors and effectors)	- Didactic (lectures, seminars, tutorial) - journal club,	-Written and oral examination - Log book
B- Describe Histologic details of Central Nervous System Including: 1-Internal structure of cerebral cortex, white matter, mid brain, pons, medulla, cerebellum, hypophyseal gland, spinal cord 2- Ganglia 3-Perpheral nerve 4- degeneration and regeneration of nerves		

B- Intellectual outcomes

ILOs	Methods of teaching/ learning	Methods of Evaluation
A. Correlates the facts of Histology with clinical reasoning, diagnosis and management of common diseases related to Neurosurgery.	Didactic (lectures, seminars, tutorial)	-Written and oral examination -Log book

C- Practical skills = 0

D-General Skills

Practice-Based Learning and Improvement

ILOs	Methods of teaching/ learning	Methods of Evaluation
A-Use information technology to manage information, access on-line medical information; and support their own education	-Observation and supervision -Written and oral communication	Oral Exam Logbook

Interpersonal and Communication Skills

ILOs	Methods of teaching/ learning	Methods of Evaluation
B. Write a report in common condition mentioned in A.A and A.B.	-Observation and supervision -Written and oral communication	Log book

Professionalism

ILOs	Methods of teaching/ learning	Methods of Evaluation
C. Demonstrate a commitment to ethical principles	-Observation -Senior staff experience	Oral Exam Logbook

Systems-Based Practice

ILOs	Methods of teaching/ learning	Methods of Evaluation
D. Work effectively in relevant health care delivery settings and systems.	-Observation -Senior staff experience	360o global rating

4. Course contents (topic s/modules/rotation
Course Matrix

Time Schedule: First Part

Topic	Covered ILOs			
	Knowledge	Intellectual	Practical skill	General Skills
Mention Histologic Principles of:				
-1-Meninges , choroid plexus	A	A	-	A-D
2-Blood- brain barrier	A	A	-	A-D
3-Neuron	A	A	-	A-D
4-Neurolgia	A	A	-	A-D
5-Nerve ending (receptors and effectors)	A	A	-	A-D
Describe Histologic details of Central Nervous System Including:				
1-Internal structure of cerebral cortex, white matter, mid brain, pons, medulla, cerebellum, hypophyseal gland, spinal cord	B	A	-	A-D
2- Ganglia	B	A	-	A-D
3-Perpheral nerve	B	A	-	A-D
4- degeneration and regeneration of nerves	B	A	-	A-D

5. Course Methods of teaching/learning:

1 Didactic (lectures, seminars, tutorial)
2 Laboratory work
3 Observation and supervision
4 Written & oral communication
5 Senior staff experience

6. Course Methods of teaching/learning: for students with poor achievements

1. Extra Didactic (lectures, seminars, tutorial) according to their needs
2. Extra Laboratory work according to their needs

7. Course assessment methods:

i. Assessment tools:

1. Written and oral examination
2. Log book

ii. Time schedule: At the end of the first part

iii. Marks: 100

8. List of references

i. Lectures notes

- Course notes
- Staff members print out of lectures and/or CD copies

ii. Essential books

- Text books written by the department of pathology

iii. Others

None

9. Signature

Course Coordinator: ……..	**Head of the Department:** ……
Date: 9/ 2021	**Date: 9/ 2021**

Course 3 Neuro-Physiology

Name of department: Neurosurgery

Faculty of medicine

Assiut University

1. Course data

- **Course Title:** Neuro- Physiology
- Course code: NES203
- **Speciality…Neurosurgery.**
- **Number of Credit points : Didactic 2 (100) practical 0 (0%) Total 2.**
- **Department (s) delivering the course:** Physiology **in conjunction with neurosurgery**
- **Coordinator (s):**

  Staff members of Physiology **Department in conjunction with Neurosurgery Department as annually approved by both departments' councils**
- **Date last reviewed: 9/ 2022**
- ***Requirements (*prerequisites) if any :**
  - **-None**

2. Course aims

The student should acquire the physiological facts necessary for Neurosurgery

3. Intended learning outcomes (ILOs):

A- Knowledge and understanding

ILOs	Methods of teaching/ learning	*Methods of Evaluation*
A. Mention Physiologic Principles of: 1-Basic biology of neuron 2- Synaptic transmission 3-Motor system including cerebellum 4-Visual system 5- Auditory system 6-Olfaction and taste 7-Autonomic nervous system 8-Arousal, emotion and memory 9-Speech	- Didactic (lectures, seminars, tutorial) - journal club,	-Written and oral examination - Log book
B- Describe *Physiologic details of:* 1-CSF circulation 2-Control of vasculature , blood- brain barrier 3- Neuro- endocrinology including hypothalamus and pituitary gland		

B- Intellectual outcomes

ILOs	Methods of teaching/ learning	Methods of Evaluation
A. Correlates the facts of Physiology with clinical reasoning, diagnosis and management of common diseases related to Neurosurgery.	Didactic (lectures, seminars, tutorial)	-Written and oral examination -Log book

C- Practical skills = 0

D-General Skills

Practice-Based Learning and Improvement

ILOs	Methods of teaching/ learning	Methods of Evaluation
A-Use information technology to manage information, access on-line medical information; and support their own education	-Observation and supervision -Written and oral communication	Oral Exam Logbook

Interpersonal and Communication Skills

ILOs	Methods of teaching/ learning	Methods of Evaluation
B. Write a report in common condition mentioned in A.A and A.B.	-Observation and supervision -Written and oral communication	Log book

Professionalism

ILOs	Methods of teaching/ learning	Methods of Evaluation
C. Demonstrate a commitment to ethical principles	-Observation -Senior staff experience	Oral Exam Logbook

Systems-Based Practice

ILOs	Methods of teaching/ learning	Methods of Evaluation
D. Work effectively in relevant health care delivery settings and systems.	-Observation -Senior staff experience	360o global rating

4. Course contents (topic s/modules/rotation
Course Matrix

Time Schedule: First Part

Topic	Covered ILOs			
	Knowledge	**Intellectual**	**Practical skill**	**General Skills**
. Mention Physiologic Principles of:				
1-Basic biology of neuron	A	A	-	A-D
2- Synaptic transmission	A	A	-	A-D
3-Motor system including cerebellum	A	A	-	A-D
4-Visual system	A	A	-	A-D
5- Auditory system	A	A	-	A-D
6-Olfaction and taste	A	A	-	A-D
7-Autonomic nervous system	A	A	-	A-D
8-Arousal, emotion and memory	A	A	-	A-D
9-Speech	A	A	-	A-D
- Describe *Physiologic details of:*				
1-CSF circulation	B	A	-	A-D
2-Control of vasculature , blood- brain barrier	B	A	-	A-D
3- Neuro- endocrinology including hypothalamus and pituitary gland	B	A	-	A-D

5. Course Methods of teaching/learning:

1 Didactic (lectures, seminars, tutorial)
2 Observation and supervision
3 Written & oral communication
4 Senior staff experience

6. Course Methods of teaching/learning: for students with poor achievements

1. Extra Didactic (lectures, seminars, tutorial) according to their needs
2. Extra Laboratory work according to their needs

7. Course assessment methods:

i. Assessment tools:

1. Written and oral examination
2. Log book

ii. Time schedule: At the end of the first part

iii. Marks: 100

8. List of references

i. Lectures notes

- Course notes
- Staff members print out of lectures and/or CD copies

ii. Essential books

- Text books written by the department

iii. Recommended books

-Gytton book

v. others

None

9. Signature

Course Coordinator: ……	**Head of the Department:** ……
Date: 9/ 2022	**Date: 9/ 2022**

Course 4 Neuropathology

Name of department: Neurosurgery

Faculty of medicine

Assiut University

1. Course data

- **Course Title: Neuropathology**
- Course code: NES205
- **Speciality: Neurosurgery.**
- **Number of Credit points : Didactic 2(100%) practical 0(0%) total 2.**

Total (104)

- **Department (s) delivering the course:** Pathology **in conjunction with neurosurgery**
- **Coordinator (s):**

  Staff members of Pathology **Department in conjunction with Neurosurgery Department as annually approved by both departments' councils**
- **Date last reviewed: 9/ 2022**
- **Requirements (prerequisites) if any :**
  - **-None**

2. Course aims

The student should acquire the pathological facts necessary for Neurosurgery including:

3. Intended learning outcomes (ILOs):

A- Knowledge and understanding

ILOs	Methods of teaching/ learning	*Methods of Evaluation*
A. Mention Principles of General Pathology of: -Inflammation -Degeneration -Tumors -Trauma -Repair -Embolism -Infarction -Thrombosis	- Didactic (lectures, seminars, tutorial) - journal club,	-Written and oral examination - Log book
B-Describe Pathologic Details of: *1-Gross and histopathologic features of:* a-Congenital neuroectodermal pathology b- intracranial infection c- vascular lesion d- Traumatic lesion e- CNS neoplasm f- Peripheral nerve disorder: trauma, inflammation, tumors 2- Neuropathology of skull 3- Spine: disc, trauma, tumors		

B- Intellectual outcomes

ILOs	Methods of teaching/ learning	Methods of Evaluation
A. Correlates the facts of Pathology with clinical reasoning, diagnosis and management of common diseases related to Neurosurgery.	Didactic (lectures, seminars, tutorial)	-Written and oral examination -Log book

C- Practical skills =0

D-General Skills

Practice-Based Learning and Improvement

ILOs	Methods of teaching/ learning	Methods of Evaluation
A-Use information technology to manage information, access on-line medical information; and support their own education	-Observation and supervision -Written and oral communication	Oral Exam Logbook

Interpersonal and Communication Skills

ILOs	Methods of teaching/ learning	Methods of Evaluation
B. Write a report in common condition mentioned in A.A and A.B.	-Observation and supervision -Written and oral communication	Log book

Professionalism

ILOs	Methods of teaching/ learning	Methods of Evaluation
C. Demonstrate a commitment to ethical principles	-Observation -Senior staff experience	Oral Exam Logbook

Systems-Based Practice

ILOs	Methods of teaching/ learning	Methods of Evaluation
D. Work effectively in relevant health care delivery settings and systems.	-Observation -Senior staff experience	360o global rating

4. Course contents (topic s/modules/rotation
Course Matrix

Time Schedule: First Part

Topic	Covered ILOs			
	Knowledge	Intellectual	Practical skill	General Skills
Principles of General Pathology of:				
Inflammation	A	A	-	A-D
-Degeneration	A	A	-	A-D
-Tumors	A	A	-	A-D
-Trauma	A	A	-	A-D
-Repair	A	A	-	A-D
-Embolism	A	A	-	A-D
-Infarction	A	A	-	A-D
-Thrombosis	A	A	-	A-D
Describe Pathologic Details of:				
1-Gross and histopathologic features of:				
a-Congenital neuroectodermal pathology	B	A	-	A-D
b- intracranial infection	B	A	-	A-D
c- vascular lesion	B	A	-	A-D
d- Traumatic lesion	B	A	-	A-D
e- CNS neoplasm	B	A	-	A-D
f- Peripheral nerve disorder: trauma, inflammation, tumors	B	A	-	A-D
2- Neuropathology of skull	B	A	-	A-D
3- Spine: disc, trauma, tumors			-	

5. Course Methods of teaching/learning:

1 Didactic (lectures, seminars, tutorial)
2 Laboratory work
3 Observation and supervision
4 Written & oral communication
5 Senior staff experience

6. Course Methods of teaching/learning: for students with poor achievements

1. Extra Didactic (lectures, seminars, tutorial) according to their needs
2. Extra Laboratory work according to their needs

7. Course assessment methods:

i. Assessment tools:

1. Written and oral examination
2. Log book

ii. Time schedule: At the end of the first part

iii. Marks: 100

8. List of references

i. Lectures notes

- Course notes
- Staff members print out of lectures and/or CD copies

ii. Essential books

- Gamal nada text book

iii. None

9. Signature

Course Coordinator: ……..	**Head of the Department:** ……
Date: 9/ 2022	**Date: 9/ 2022**

Course 5 General surgery

Name of department: Neurosurgery

Faculty of medicine

Assiut University

1. Course data

- **Course Title: General surgery**
- Course code: NES211
- **Speciality: Neurosurgery.**
- **Total Credit Points : Didactic 3 (50%) practical 3(50 %) total 6**
- **Department (s) delivering the course: General surgery in conjunction with neurosurgery**
- **Coordinator (s):**

  Staff members of General surgery Department in conjunction with Neurosurgery Department as annually approved by both departments' councils
- **Date last reviewed: 9/ 2022**
- **General requirements (prerequisites) if any:**

  None
- **Requirements from the students to achieve course ILOs are clarified in the joining log book.**

2. Course Aims

-The student should acquire the basic Knowledge and surgical skills necessary for Neurosurgery in clinical reasoning, diagnosis and management of diseases including Shock-Multiple Injured Patients-Neck swelling.

3. Course intended learning outcomes (ILOs):

A- Knowledge and understanding

ILOs	Methods of teaching/ learning	*Methods of Evaluation*
A. Describe the etiology, clinical picture, diagnosis and management of the following diseases and clinical conditions: -Shock -Multiple injured patients -Neck swelling -Surgical infection -Hemorrhage	-Didactic (lectures, seminars, tutorial) -journal club, -Critically appraised topic, -Educational prescription (a structured technique for following up on clinical questions that arise during rounds and other venues) -Present a case (true or simulated) in a grand round -Others	1. Portfolios 2. Case Log book 3. Oral exam 4. Written exam 5. record review
B. Mention the principles of : -Basics of General Surgery -Acid base balance		

C. State update and evidence based Knowledge of -Multiple injured patients		
D. Memorize the facts and principles of the relevant basic and clinically supportive sciences related to General Surgery.		
E. Mention the basic ethical and medicolegal principles revenant to the General Surgery.		
F. Mention the basics of quality assurance to ensure good clinical care in General Surgery.		
G. Mention the ethical and scientific principles of medical research		
H. State the impact of common health problems in the field of General Surgery. on the society.		

B- Intellectual outcomes

ILOs	Methods of teaching/ learning	Methods of Evaluation
A. Correlates the facts of relevant basic and clinically supportive sciences with clinical reasoning, diagnosis and management of common diseases related to General Surgery.	-Clinical rounds -Senior staff experience	Procedure/case presentation Log book and Portfolios
B. Demonstrate an investigatory and analytic thinking (problem solving) approaches to common clinical situations related to General Surgery.		
C. Design and present cases , seminars in common problem		
D-Formulate management plans and alternative decisions in different situations in the field of the General Surgery.		

C- Practical skills (Patient Care)

ILOs	Methods of teaching/ learning	Methods of Evaluation
A. Obtain proper history and examine patients in caring and respectful behaviors.	Lecture - seminar - journal club -service teaching -outpatient -inpatient -Operative -Direct observation -case presentation	-Written and oral examination -Log book
B. Order the following non invasive/invasive diagnostic procedures -Basal laboratory investigation -X- ray skull-neck- abdomen- chest -CT Brain	Lecture - seminar - journal club -service teaching -Outpatient -Inpatient -Operative -Direct observation -Case presentation	- Log book - Chick list
C. Interpret the following non invasive/invasive diagnostic procedures -Basal laboratory investigation -X- ray skull-neck- abdomen- chest -CT Brain		
D. Perform the following non invasive/invasive therapeutic procedures -Operation for multiple injured patients	-Operative -Direct observation -case presentation	Written and oral examination -Log book -Procedure presentation
E. Prescribe the following non invasive and invasive therapeutic procedures : -Treatment of shock and surgical infection	Lecture - seminar - journal club -service teaching -outpatient -inpatient	Written and oral examination -Log book

	-Operative -Direct observation -case presentation	
F. Carry out patient management plans for common conditions related to General Surgery. -Acid- base balance -shock- Hemorrhage -Surgical infection -Multiple Injured patient -Neck swelling -Abdominal complication related to Neurosurgical procedure	Lecture - seminar - journal club -service teaching -outpatient -inpatient -Operative -Direct observation -case presentation	Written and oral examination Log book
G. Use information technology to support patient care decisions and patient education in common clinical situations related to Procedure presentation.		
H. Provide health care services aimed at preventing health problems related to Procedure presentation like: -Abdominal complication related to Neurosurgical procedure -Shock - Hemorrhage -Surgical infection		
I. Provide patient-focused care in common conditions related to General Surgery, while working with health care professionals, including those from other disciplines for the conditions mentioned above in A.A		

D- General Skills

Practice-Based Learning and Improvement

ILOs	Methods of teaching/ learning	Methods of Evaluation
A. Perform practice-based improvement activities using a systematic methodology(audit, logbook)	-Case log -Observation and supervision -Written & oral communications	-Portfolios -Global rating -Simulation
B. Appraises evidence from scientific studies(journal club)		
C. Conduct epidemiological Studies and surveys.		
D. Perform data management including data entry and analysis.		
E. Facilitate learning of junior students and other health care professionals.		

Interpersonal and Communication Skills

ILOs	Methods of teaching/ learning	Methods of Evaluation
F. Maintain therapeutic and ethically sound relationship with patients.	-Observation & supervision Didactic	-Simulation Record review (report)
G. Elicit information using effective nonverbal, explanatory, questioning, and writing skills.		
H. Provide information using effective nonverbal, explanatory, questioning, and writing skills.		
I. Work effectively with others as a member of a health care team or other professional group.		
J. Present a case in common conditions mentioned above in A.A.		
K. Write a report in case of multiple injured patients.		
L. Council patients and families about the conditions mentioned above in A.A.		

Professionalism

ILOs	Methods of teaching/ learning	Methods of Evaluation
M. Demonstrate respect, compassion, and integrity; a responsiveness to the needs of patients and society	-Case log Observation and supervision Written & oral communications	1.Objective structured clinical examination 2. Patient survey 3.360o global rating
N. Demonstrate a commitment to ethical principles including provision or withholding of clinical care, confidentiality of patient information, informed consent, business practices		
O. Demonstrate sensitivity and responsiveness to patients' culture, age, gender, and disabilities		

Systems-Based Practice

ILOs	Methods of teaching/ learning	Methods of Evaluation
P. Work effectively in relevant health care delivery settings and systems.	Observation & supervision Didactic	1-Check list evaluation of live or recorded performance. 2. 360o global rating 3. Patient survey 4. portfolios
Q. Practice cost-effective health care and resource allocation that does not compromise quality of care.		
R. Assist patients in dealing with system complexities.		

4. Course contents (topic s/modules/rotation
Course Matrix

Time Schedule: First Part

Topic	Covered ILOs			
	Knowledge A	Intellectual B	Practical skill C	General Skills D
Shock	A	A-D	A-C,E,H,F,G,I	A-J,L-R
Hemorrhage	A	A-D	A-C,E,H, F,G,I	A-J,L-R
Surgical infection	A	A-D	A-C,E,H, F,G,I	A-J,L-R
-Multiple injured patients	A,C	A-D	A-C,D	A-R
-Neck swelling	A	A-D	A-C,G,G,I	A-J,L-R
-Basics of General Surgery	B	A-D	-	-
-Acid base balance	B	A-D	-	-

5. Course Methods of teaching/learning:

1. Didactic (lectures, seminars, tutorial)
2. Clinical rounds
3. (service teaching) Observation
4. Perform under supervision of senior staff
5. Simulations
6. Case presentation
7. Written & oral communications
8. Seminar
9. journal club

6. Course Methods of teaching/learning: for students with poor achievements

1. Lectures
2. Simulations

7. Course assessment methods:

I. Assessment tools:

a. Written and oral examination
b. Clinical Examination
c. Log book

ii. Time schedule: At the end of the first part.

iii. Marks: 150

8. List of references

I. Lectures notes

Course notes

- Staff members print out of lectures and/or CD copies

ii. Essential books kaser eleiney text book-Rafik text book

iii. Recommended books

-Bill and love

Iv. Periodicals, Web sites, … etc

- international journal

V. others: None

9. Signature

Course Coordinator: ……	**Head of the Department:** ……
Date: 9/ 2022	**Date: 9/ 2022**

Course 6 Neurological Diseases

Name of department: Neurosurgery

Faculty of medicine

Assiut University

2022-2023

1. Course data

- **Course Title: Neurological diseases**
- Course code: NES220
- **Speciality…Neurosurgery.**
- **Number of Credit points : Didactic** 3 **(30%) practical** 7 **(70%) total 10.**
- **Department (s) delivering the course: Neurology with Neurosurgery**
- **Coordinator (s):**

  Staff members of Neurology in conjunction with Neurosurgery Department as annually approved by both departments' councils
- **Date last reviewed: 9/2022**
- **Requirements (prerequisites) if any :**
  - **-None**

2. Course aims

-To make the students familial with the diagnosis and management of common medical neurological problems that may be encountered in Neurosurgery.

3. Course intended learning outcomes (ILOs):

A- Knowledge and understanding

ILOs	Methods of teaching/ learning	*Methods of Evaluation*
A. Describe the etiology, clinical picture, diagnosis and management of the following diseases and clinical conditions: • Stroke • Epilepsy • Demylinating diseases • Muscle disease • Peripheral neuropathy • Paraplegia • Speech disorder • Neurogenic bladder • Migraine • Ataxia • Extrapyramidal syndrome	-Didactic (lectures, seminars, tutorial) -journal club, -Critically appraised topic, -Educational prescription (a structured technique for following up on clinical questions that arise during rounds and other venues) -Present a case (true or simulated) in a grand round -Others	Log book and Portfolios -Oral exam -Written exam -Record review

B. Mention the principles of : -CNS infection -Basics of Neurology		
C. State update and evidence based Knowledge of • Stroke • Peripheral neuropathy • Paraplegia		
D. Memorize the facts and principles of the relevant basic and clinically supportive sciences related to Neurology.		
E. Mention the basic ethical and medicolegal principles relevant to the Neurology.		
F. Mention the basics of quality assurance to ensure good clinical care in Neurology.		
G. Mention the ethical and scientific principles of medical research		
H. State the impact of common health problems in the field of Neurology.on the society.		

B- Intellectual outcomes

ILOs	Methods of teaching/ learning	Methods of Evaluation
A. Correlates the facts of relevant basic and clinically supportive sciences with clinical reasoning, diagnosis and management of common diseases related to Neurology.	-Clinical rounds -Senior staff experience	Procedure/case presentation Log book and Portfolios
B. Demonstrate an investigatory and analytic thinking (problem solving) approaches to common clinical situations related to Neurology.		
C. Design and present cases , seminars in common problem		
D-Formulate management plans and alternative decisions in different situations in the field of the Neurology		

C- Practical skills (Patient Care)

ILOs	Methods of teaching/ learning	Methods of Evaluation
A. Obtain proper history and examine patients in caring and respectful behaviors.	-Lecture - seminar - journal club -service teaching -outpatient -inpatient -Operative -Direct observation -case presentation	1. Checklist evaluation of live or recorded performance 2. log book 3. Objective structured clinical examination
B. Order the following non invasive/invasive diagnostic procedures -Basal laboratory investigation- -X- ray skull- CT-brain-- spine -MRI brain- spine -Lumbar puncture		
C. Interpret the following non invasive/invasive diagnostic procedures --Basal laboratory investigation- -X- ray skull- CT-brain-- spine -MRI brain- spine		
D. Perform the following non invasive/invasive therapeutic procedures -Lumbar puncture		
E. Prescribe the following non invasive/invasive therapeutic procedures :		

-Treatment of Common conditions mentioned in A.A and A.B.		
F. Carry out patient management plans for common conditions related to Neurology as mentioned in A.A and A.B.		
G. Use information technology to support patient care decisions and patient education in common clinical situations related to Procedure presentation.		
H. Provide health care services aimed at preventing health problems related to Procedure presentation like -Epilepsy -CNS infection		
I-Provide patient-focused care in common conditions related to Neurology, while working with health care professionals, including those from other disciplines for the conditions mentioned above in A.A and A.B.		

D- General Skills

Practice-Based Learning and Improvement

ILOs	Methods of teaching/ learning	Methods of Evaluation
A. Perform practice-based improvement activities using a systematic methodology(audit, logbook)	-Case log -Observation and supervision -Written & oral communications	-Portfolios -Global rating -Simulation
B. Appraises evidence from scientific studies(journal club)		
C. Conduct epidemiological Studies and surveys.		
D. Perform data management including data entry and analysis.		
E. Facilitate learning of junior students and other health care professionals.		

Interpersonal and Communication Skills

ILOs	Methods of teaching/ learning	Methods of Evaluation
F. Maintain therapeutic and ethically sound relationship with patients.	-Observation & supervision Didactic	-Simulation Record review (report)
G. Elicit information using effective nonverbal, explanatory, questioning, and writing skills.		
H. Provide information using effective nonverbal, explanatory, questioning, and writing skills.		
I. Work effectively with others as a member of a health care team or other professional group.		
J. Present a case in common conditions mentioned above in A.A and A.B.		
E. Write the following report: -Patient discharge report -Death report		
L. Council patients and families about the conditions mentioned above in A.A and A.B.		

Professionalism

ILOs	Methods of teaching/ learning	Methods of Evaluation
M. Demonstrate respect, compassion, and integrity; a responsiveness to the needs of patients and society	-Case log Observation and supervision Written & oral communications	1.Objective structured clinical examination 2. Patient survey 3.360o global rating
N. Demonstrate a commitment to ethical principles including provision or withholding of clinical care, confidentiality of patient information, informed consent, business practices		
O. Demonstrate sensitivity and responsiveness to patients' culture, age, gender, and disabilities		

Systems-Based Practice

ILOs	Methods of teaching/ learning	Methods of Evaluation
P. Work effectively in relevant health care delivery settings and systems.	Observation & supervision Didactic	1-Check list evaluation of live or recorded performance. 2. 360o global rating 3. Patient survey 4. portfolios
Q. Practice cost-effective health care and resource allocation that does not compromise quality of care.		
R. Assist patients in dealing with system complexities.		

4. Course contents (topic s/modules/rotation
Course Matrix

Time Schedule: First Part

Topic	Covered ILOs			
	Knowledge	Intellectual	Practical skill	General Skills
- Stroke	A,C,D-H	A-D	A-C,E-G,I	A-R
- Epilepsy	A,D-H	A-D	A-C,H,I	A-R
- Demylinating diseases	A,D -H	A-D	A-C,E-G,I	A-R
- Muscle disease	A,D-H	A-D	A-C,E-G,I	A-R
- Peripheral neuropathy	A,C,D-H	A-D	A-C,E-G,I	A-R
- Paraplegia	A,C,D-H	A-D	A-C,E-G,I	A-R
- Speech disorder	A,D -H	A-D	A-C,E-G,I	A-R
- Neurogenic bladder	A,D -H	A-D	A-C,E-G,I	A-R
- Migraine	A,D -H	A-D	A-C,E-G,I	A-R
- Ataxia	A,D -H	A-D	A-C,E-G,I	A-R
- Extrapyramidal syndrome	A,D -H	A-D	A-C,E-G,I	A-R
-CNS infection	B,D-H	A-D	A-C,D,H,I	A-R
-Basics of Neurology	B,D-H	A-D	-	-

5. Course Methods of teaching/learning:

1. Didactic (lectures, seminars, tutorial)
2. Clinical rounds
3. (service teaching) Observation
4. Perform under supervision of senior staff
5. Simulations
6. Case presentation
7. Written & oral communications
8. Seminar
9. journal club

6. Course Methods of teaching/learning: for students with poor achievements

1. Extra Didactic (lectures, seminars, tutorial) according to their needs
2. Extra training according to their needs

7. Course assessment methods:

I. Assessment tools:

a. Written and oral examination
b. Clinical Examination
c. Log book

ii. Time schedule: At the end of the first part.

iii. Marks: 150

8. List of references

I. Lectures notes

Course notes

- Staff members print out of lectures and/or CD copies

ii. Essential books

- Text books written by the Neurosurgery Department

iii. Recommended books

Essential book of Neurology, Neurosurgery

Iv. Periodicals, Web sites, … etc

- -international journal -

V. others…none

9. Signature

Course Coordinator: ……	Head of the Department: ……
Date: 9/ 2022	Date: 9/ 2022

Second Part

Course 7 *Neurosurgery*

1. Course data

- **Course Title:** Neurosurgery
- Course code: NES214
- **Speciality: Neurosurgery.**
- **Number of Credit point : Didactic** 24**, (17.9 %) practical 134 (14 during year 1 and 96 during year 2, 3 { 82.1% %}) total 134**
- **Department (s) delivering the course: Neurosurgery**
- **Coordinator (s): Prof. Roshdy EL Khayat**
- **Date last reviewed: 9/ 2021**
- **Requirements (prerequisites) if any :**
  - **-None**

2. Course aims

1-To enable candidates to Acquire satisfactory level of clinical skills, bedside care skills, in addition to update medical knowledge as well as clinical experience and competence in the area of Neurosurgery and enabling the candidates of making appropriate referrals to a sub-specialist
2- To introduce candidates to the basics of scientific medical research
3- To improve knowledge and application of Surgical pathology.

3. Course intended learning outcomes (ILOs):

A- Knowledge and understanding

ILOs	Methods of teaching/ learning	*Methods of Evaluation*
A. Describe the etiology, clinical picture, diagnosis and management of the following diseases and clinical conditions: -Head trauma -Neural tube defect -Spinal cord compression. -Infection of brain- spine -Brain tumor	-Didactic (lectures, seminars, tutorial) -journal club, -Critically appraised topic, -Educational prescription (a structured technique for following up on clinical questions that arise during	1. Portfolios 2. Case Log book 3. Oral exam 4. Written exam 5. record review 6. Global rating 7. Simulation

	rounds and other venues) -Present a case (true or simulated) in a grand round -Others	
B. Mention the principles of : - The development and structure of the Central nervous system -Epidemiology of neurosurgery related problems -Neurosurgery related radiology -Diagnostic procedures		
C. State update and evidence based Knowledge of -Head injury.		
D. Memorize the facts and principles of the relevant basic and clinically supportive sciences related to Neurosurgery.		
E. Mention the basic ethical and medicolegal principles that should be applied in practice and are relevant to Neurosurgery.		
F. Mention the basics and standards of quality assurance to ensure good clinical practice in the field of Neurosurgery.		
G. Mention the ethical and scientific principles of medical research methodology.		
H. State the impact of common health problems in the field of Neurosurgery on the society and how good clinical practice improve these problems.		

B- Intellectual outcomes

ILOs	Methods of teaching/ learning	Methods of Evaluation
A. Correlates the facts of relevant basic and clinically supportive sciences with clinical reasoning, diagnosis and management of common diseases related to Neurosurgery.	-Clinical rounds -Senior staff experience	Procedure/case presentation Log book and Portfolios
B. Demonstrate an investigatory and analytic thinking (problem solving) approaches to common clinical situations related to Neurosurgery.		
C. Design and /or present a case or review (through seminars/journal clubs.) in one or more of common clinical problems relevant to the field of Neurosurgery.		
D-Formulate management plans and alternative decisions in different situations in the field of the Neurosurgery.		

C- Practical skills (Patient Care)

ILOs	Methods of teaching/ learning	Methods of Evaluation
A. Obtain proper history and examine patients in caring and respectful behaviors.	Lecture - seminar - journal club -service teaching -outpatient -inpatient -Operative -Direct observation	-Written and oral examination - Checklist evaluation of live or recorded performance - log book -Objective

	-case presentation	structured clinical examination (OSCE)
B. Order the following non invasive/invasive diagnostic procedures - X- ray skull-neck-spine -CT-brain-- spine -MRI brain-spine -Lumbar puncture -Ventricular tapping	Lecture - seminar - journal club -service teaching -Outpatient -Inpatient -Operative -Direct observation -Case presentation	- Log book - Chick list
C. Interpret the following non invasive/invasive diagnostic procedures - X- ray skull-neck-spine CT-brain-- spine MRI brain-spine -Lumbar puncture		
D. Perform the following non invasive/invasive therapeutic procedures -Assist staff in different neurosurgical operation - Lumbar puncture -Ventricular tapping	-Operative -Direct observation -Perform under supervision of senior staff	-Log book -Procedure presentation. -Checklist evaluation of live or recorded performance -Objective structured clinical examination
E. Prescribe the following non invasive/invasive therapeutic procedures : -Management of condition mentioned in A.A . - Lumbar puncture -Ventricular tapping	Lecture - seminar - journal club -service teaching -outpatient	Written and oral examination -Log book

	-inpatient -Operative -Direct observation -case presentation	
F. Carry out patient management plans for common conditions related to Neurosurgery**.** -Head trauma -Neural tube defect -spinal cord compression Infection of brain- spine -Brain tumor	Lecture - seminar - journal club -service teaching -outpatient -inpatient -Operative -Direct observation -case presentation	Written and oral examination Log book
G. Use information technology to support patient care decisions and patient education in common clinical situations related to Procedure presentation.		
H. Provide health care services aimed at preventing health problems related to Procedure presentation like: surgical infection of brain- spine		
I-Provide patient-focused care in common conditions related to Neurosurgery, while working with health care professionals, including those from other disciplines for the conditions mentioned above in A.A.		
J. Write competently all forms of patient charts and sheets including reports evaluating these charts and sheets (Write a consultation note, Inform patients of a diagnosis and therapeutic plan, completing and maintaining medical records).		

D- General Skills

Practice-Based Learning and Improvement

ILOs	Methods of teaching/ learning	Methods of Evaluation
A. Perform practice-based improvement activities using a systematic methodology (share in audit and risk management activities and use logbook).	-Case log -Observation and supervision -Written & oral communications	-Portfolios -Global rating -Simulation
B. Appraises evidence from scientific studies(journal club)		
C. Conduct epidemiological Studies and surveys.		
D. Perform data management including data entry and analysis using information technology to manage information, access on-line medical information; and support their own education.		
E. Facilitate learning of junior students and other health care professionals including their evaluation and assessment.		

Interpersonal and Communication Skills

ILOs	Methods of teaching/ learning	Methods of Evaluation
F. Maintain therapeutic and ethically sound relationship with patients.	-Observation & Supervision Didactic	-Simulation Record review (report)
G. Elicit information using effective nonverbal, explanatory, questioning, and writing skills.		
H. Provide information using effective nonverbal, explanatory, questioning, and writing skills.		

I. Work effectively with others as a member of a health care team or other professional group.		
J. Present a case in common conditions mentioned above in A.A.		
H. Write the following report: -Discharge report -Death report		
L. Council patients and families about the conditions mentioned above in A.A.		

Professionalism

ILOs	Methods of teaching/ learning	Methods of Evaluation
M. Demonstrate respect, compassion, and integrity; a responsiveness to the needs of patients and society	-Case log Observation and supervision Written & oral communications	1.Objective structured clinical examination 2. Patient survey 3.360o global rating
N. Demonstrate a commitment to ethical principles including provision or withholding of clinical care, confidentiality of patient information, informed consent, business practices		
O. Demonstrate sensitivity and responsiveness to patients' culture, age, gender, and disabilities		

Systems-Based Practice

ILOs	Methods of teaching/ learning	Methods of Evaluation
P. Work effectively in relevant health care delivery settings and systems including good administrative and time management.	Observation & supervision Didactic	1-Check list evaluation of live or recorded performance. 2. 360o global rating 3. Patient survey 4. portfolios
Q. Practice cost-effective health care and resource allocation that does not compromise quality of care.		
R. Assist patients in dealing with system complexities.		

4. Course contents (topic s/modules/rotation
Course Matrix

Time Schedule: Second Part

Topic	Covered ILOs			
	Knowledge	Intellectual	Practical skill	General Skills
Head trauma	A,C	A-D	A-G,I,J	A-R
-Neural tube defect	A	A-D	A-G,I,J	A-R
-Spinal cord compression	A	A-D	A-G,I,J	A-R
-Infection of brain- spine	A	A-D	A-J	A-R
The development and structure of the Central nervous system	B	A-D		-
-Epidemiology of neurosurgery related problems	B	A-D	G	B,C
-Neurosurgery related radiology	B	A-D	G	E,I
-Diagnostic procedures	B	A-D	G	E-I

5. Course Methods of teaching/learning:

1. Didactic (lectures, seminars, tutorial)
2. Clinical rounds
3. (Service teaching) Observation
4. Perform under supervision of senior staff
5. Simulations
6. Case presentation
7. Written & oral communications
8. Seminar
9. journal club
10. Operative
11. Outpatient

12. Inpatient

6. Course Methods of teaching/learning: for students with poor achievements

1. Lectures
2. Simulations

7. Course assessment methods:

I. Assessment tools:

a. Written and oral examination
b. Clinical Examination
c. Log book

ii. Time schedule: At the end of the Second part.

iii. Marks: 1200

8. List of references

I. Lectures notes

Course notes

- Staff members print out of lectures and/or CD copies

ii. Essential books

- Hand book Of Neurosurgery - Greenberg
- The Neurosurgeon's Handbook – Oxford, 2014
- Essential Neurosurgery

iii. Recommended books

Wilkin's text book- Principle of Neurosurgery

Neurology and Neurosurgery Illustrated, 5th edition 2022

Iv. Periodicals, Web sites, … etc

-international journal J of Neurosurgery, Spine neurosurgery, pediatric Neurosurgery

9. Signature

Contributor	Name	Signature	Date
Program Principle Coordinator:	**Prof. Ahmed Alghyriany**		**9/2022**
Head of the Responsible Department (Program	**Prof. Mohamed Khallaf**		**9/2022**

Academic Director):			

ANNEX 2
Program Academic Reference Standards (ARS)

1- Graduate attributes for master degree in Neurosurgery

***The Graduate (after residence training and master degree years of study) must*:**

1- Have the capability to be a scholar, understanding and applying basics, methods and tools of scientific research and clinical audit *in neurosurgery*.

2- Appraise and utilise scientific knowledge to continuously update and improve clinical practice in related speciality.

3- Acquire sufficient medical knowledge in the basic biomedical, clinical, behavioural and clinical sciences, medical ethics and medical jurisprudence and apply such knowledge in patient care in the field of *neurosurgery*.

4- Provide patient care that is appropriate, effective and compassionate for dealing with common health problems and health promotion using evidence-based and updated information.

5- Identify and share to solve health problems in his speciality.

6- Acquire all competencies –including the use of recent technologies- that enable him to provide safe, scientific, and ethical and evidence based clinical care including update use of new technology in *neurosurgery*.

7- Demonstrate interpersonal and communication skills that ensure effective information exchange with individual patients and their families and teamwork with other health professions, the scientific community and the public.

8- Function as supervisor, and trainer in relation to colleagues, medical students and other health professions.

9- Acquire decision making capabilities in different situations related to *neurosurgery*.
10- Show responsiveness to the larger context of the health care system, including e.g. the organisation of health care, partnership with health care providers and managers, practice of cost-effective health care, health economics, and resource allocations.
11- Be aware of public health and health policy issues and share in system-based improvement of health care.
12- Show appropriate attitudes and professionalism.
13- Demonstrate skills of lifelong learning and maintenance of competence and ability for continuous medical education and learning in subsequent stages in *neurosurgery* or one of its subspecialties.

2- Competency based Standards for clinical master degree graduates

2.1- Knowledge and understanding

By the end of the program, the graduate should demonstrate satisfactory knowledge and understanding of

2-1-A- Established basic, biomedical, clinical, epidemiological and behavioral sciences related conditions, problem and topics.

2-1-B- The relation between good clinical care of common health problems in the speciality and the welfare of society.

2-1-C- Up to date and recent developments in common problems related to *neurosurgery*.

2-1-D- Ethical and medicolegal principles relevant to practice in *neurosurgery*.

2-1-E -Quality assurance principles related to the good medical practice in *neurosurgery*.

2-1-F- Ethical and scientific basics of medical research.

2.2- Intellectual skills:

By the end of the program, the graduate should be able to demonstrate the following:

2-2-A- Correlation of different relevant sciences in the problem solving and management of common diseases of *neurosurgery*.

2-2-B- Problem solving skills based on data analysis and evaluation (even in the absence of some) for common clinical situations related to *neurosurgery*.

2.2- C- Demonstrating systematic approach in studying clinical problems relevant to *neurosurgery*.

2-2-D- Making alternative decisions in different situations in *neurosurgery*.

2.3- Clinical skills

By the end of the program, the graduate should be able to

2-3-A - Provide patient care that is compassionate, appropriate, and effective for the treatment of health problems and the promotion of health.

2-3-B- Demonstrate patient care skills relevant to *neurosurgery* for patients with common diseases and problems.

2-3- C- Write and evaluate reports for situations related to the field of *neurosurgery*.

2.4- General skills

By the end of the program, the graduate should be able to

- ***Competency-based outcomes for Practice-based Learning and Improvement***

2-4-A- Demonstrate practice-based learning and improvement skills that involves investigation and evaluation of their own patient care, appraisal and assimilation of scientific evidence,, improvements in patient care and risk management.

2-4-B- Use all information sources and technology to improve his practice.

2-4-C- Demonstrate skills of teaching and evaluating others.

- ***Competency-based objectives for Interpersonal and Communication Skills***

2-4-D- Demonstrate interpersonal and communication skills that result in effective information exchange and teaming with patients, their families, and other health professionals.

- ***Competency-based objectives for Professionalism***

2-4-E- Demonstrate professionalism behaviors, as manifested through a commitment to carrying out professional responsibilities, adherence to ethical principles, and sensitivity to a diverse patient population.

- ***Competency-based objectives for Systems-based Practice***

2-4-F- Demonstrate an awareness of and responsiveness to the larger context and system of health care and the ability to effectively use system resources to provide care that is of optimal value.

2-4-g- Demonstrate skills of effective time management.

2-4-H- Demonstrate skills of self and continuous learning.

Annex 3, Methods of teaching/learning

Annex 3, Methods of teaching/learning

	Patient care	**Medical knowledge**	**Practice-based learning/ Improvement**	**Interpersonal and communication skills**	**Professionalism**	**Systems-based practice**
Didactic (lectures, seminars, tutorial)	X	X		X	X	X
journal club,	X	X	X			
Educational prescription	X	X	X	X	X	X
Present a case (true or simulated) in a grand round	X	X	X	X	X	
Observation and supervision	X		X	X	X	X
conferences		X	X	X		X
Written assignments	X	X	X	X	X	X
Oral assignments	X	X	X	X	X	X

Teaching methods for knowledge

- ❖ Didactic (lectures, seminars, tutorial)
- ❖ journal club
- ❖ Critically appraised topic
- ❖ Educational prescription (a structured technique for following up on clinical questions that arise during rounds and other venues).
- ❖ Present a case (true or simulated) in a grand round
- ❖ Others

Teaching methods for patient care

- ❖ Observation and supervision /Completed tasks procedure/case logs
- ❖ On-the-job" training without structured teaching is not sufficient for this skill (checklists).
- ❖ Simulation is increasingly used as an effective method for skill/ teamwork training.

Teaching methods for other skills

- ❖ Written communication (e.g., orders, progress note, transfer note, discharge summary, operative reports, and diagnostic reports).
- ❖ Oral communication (e.g., presentations, transfer of care, interactions with patients, families, colleagues, members of the health care team) and/or non verbal skills (e.g., listening, team skills)
- ❖ Professionalism, including medical ethics, may be included as a theme throughout the program curriculum that includes both didactic and experiential components (e.g., may be integrated into already existing small group discussions of vignettes or case studies and role plays, computer-based modules) and may be modeled by the faculty in clinical practice and discussed with the resident as issues arise during their clinical practice.

Annex 4, Assessment methods

Annex 4, ILOs evaluation methods for Master Degree students.

Method	Practical skills	K	Intellectual	General skills			
	Patient care	K	I	Practice-based learning/ Improvement	Interpersonal and communication skills	Professionalism	Systems-based practice
Record review	X	X	X		X	X	X
Checklist	X				X		
Global rating	X	X	X	X	X	X	X
Simulations	X	X	X	X	X	X	
Portfolios	X	X	X	X	X		
Standardized oral examination	X	X	X	X	X		X
Written examination	X	X	X	X			X
Procedure/ case log	X	X					
OSCE	X	X	X	X	X	X	X

Annex 4, Glossary of Master Degree doctors assessment methods

- Record Review – Abstraction of information from patient records, such as medications or tests ordered and comparison of findings against accepted patient care standards.

- Chart Stimulated Recall – Uses the MSc doctor's patient records in an oral examination to assess clinical decision-making.

- Mini clinical evaluation: Evaluation of Live/Recorded Performance (single event) – A single resident interaction with a patient is evaluated using a checklist. The encounter may be videotaped for later evaluation.

- Standardized Patients (SP) – Simulated patients are trained to respond in a manner similar to real patients. The standardized patient can be trained to rate MSc doctor's performance on checklists and provide feedback for history taking, physical examination, and communication skills. Physicians may also rate the MSc doctor's performance.

- Objective Structured Clinical Examination (OSCE) – A series of stations with standardized tasks for the MSc doctors to perform. Standardized patients and other assessment methods often are combined in an OSCE. An observer or the standardized patient may evaluate the MSc doctors.

- Procedure or Case Logs – MSc doctors prepare summaries of clinical experiences including clinical data. Logs are useful to document educational experiences and deficiencies.

- PSQs – Patients fill out Patient Survey questionnaires (PSQs) evaluating the quality of care provided by a MSc doctors.

- Case /problems – assess use of knowledge in diagnosing or treating patients or evaluate procedural skills.
- Models: are simulations using mannequins or various anatomic structures to assess procedural skills and interpret clinical findings. Both are useful to assess practice performance and provide constructive feedback.
- 360 Global Rating Evaluations – MSc doctors, faculty, nurses, clerks, and other clinical staff evaluate MSc doctors from different perspectives using similar rating forms.
- Portfolios – A portfolio is a set of project reports that are prepared by the MSc doctors to document projects completed during the MSc study years. For each type of project standards of performance are set. Example projects are summarizing the research literature for selecting a treatment option, implementing a quality improvement program, revising a medical student clerkship elective, and creating a computer program to track patient care and outcomes.
- Examination MCQ – A standardized examination using multiple-choice questions (MCQ). The in-training examination and written board examinations are examples.
- Examination Oral – Uses structured realistic cases and patient case protocols in an oral examination to assess clinical decision-making.
- Procedure or Case Logs – MSc doctors prepare summaries of clinical experiences including clinical data. Logs are useful to document educational experiences and deficiencies.
- PSQs – Patients fill out Patient Survey questionnaires (PSQs) evaluating the quality of care provided by MSc doctors.

Annex 5, Program evaluation tools

By whom	Method	sample
Quality Assurance Unit	Reports Field visits	#
External Evaluator (s):According to department council External Examiner (s): According to department council	Reports Field visits	#
Stakeholders	Reports Field visits questionnaires	#
Senior students	questionnaires	#
Alumni	questionnaires	#

Annex 6, Program Correlations:

مصفوفة توافق المعايير القومية القياسية العامة لبرامج الماجستير مع المعايير الأكاديمية المعتمدة من كلية الطب □ جامعة أسيوط لدرجة الماجستير في جراحة المخ و الأعصاب

I- General Academic Reference Standards (GARS) versus Program ARS

1- Graduate attributes

Faculty ARS	NAQAAE General ARS for postgraduate programs
1- Have the capability to be a scholar, understanding and applying basics, methods and tools of scientific research and clinical audit in *neurosurgery*.	1- إجادة تطبيق أساسيات و منهجيات البحث العلمي واستخدام أدواته المختلفة
2- Appraise and utilise scientific knowledge to continuously update and improve clinical practice in *neurosurgery*.	2-تطبيق المنهج التحليلي واستخدامه في مجال التخصص
3- Acquire sufficient medical knowledge in the basic biomedical, clinical, behavioural and clinical sciences, medical ethics and medical jurisprudence and apply such knowledge in patient care in *neurosurgery*.	3-تطبيق المعارف المتخصصة و دمجها مع المعارف ذات العلاقة في ممارسته المهنية
4- Provide patient care that is appropriate, effective and compassionate for dealing with common health problems and health promotion using evidence-based and update information.	4-إظهار وعيا بالمشاكل الجارية و الرؤى الحديثة في مجال التخصص
5- Identify and share to solve health problems in *neurosurgery*.	5-تحديد المشكلات المهنية و إيجاد حلولا لها
6- Acquire all competencies that enable him to provide safe, scientific, ethical and evidence based clinical care including update use of new technology in *neurosurgery*.	6-إتقان نطاق مناسب من المهارات المهنية المتخصصة، واستخدام الوسائل التكنولوجيةالمناسبة بما يخدم ممارسته المهنية

7- Demonstrate interpersonal and communication skills that ensure effective information exchange with individual patients and their families and teamwork with other health professions, the scientific community and the public. 8- Function as supervisor, and trainer in relation to colleagues, medical students and other health professions.	7–التواصل بفاعلية و القدرة على قيادة فرق العمل
9- Acquire decision making capabilities in different situations related to *neurosurgery*.	8–اتخاذ القرار في سياقات مهنية مختلفة
10- Show responsiveness to the larger context of the health care system, including e.g. the organisation of health care, partnership with health care providers and managers, practice of cost-effective health care, health economics, and resource allocations.	9– توظيف الموارد المتاحة بما يحقق أعلي استفادة و الحفاظ عليها
11- Be aware of public health and health policy issues and share in system-based improvement of health care.	10–إظهار الوعي بدوره في تنمية المجتمع و الحفاظ على البيئة في ضوء المتغيرات العالمية و الإقليمية
12- Show appropriate attitudes and professionalism.	11–التصرف بما يعكس الالتزام بالنزاهة و المصداقية و الالتزام بقواعد المهنة
13- Demonstrate skills of lifelong learning and maintenance of competence and ability for continuous medical education and learning in subsequent stages in *neurosurgery* or one of its subspecialties.	12–تنمية ذاته أكاديميا و مهنيا و قادرا علي التعلم المستمر

2. Academic standard

Faculty ARS	NAQAAE General ARS for postgraduate programs
2.1.A -Established basic, biomedical, clinical, epidemiological and behavioral sciences related conditions, problems and topics.	2-1-أ-النظريات و الأساسيات المتعلقة بمجال التعلم وكذا في المجالات ذات العلاقة.
2.1.B- The relation between good clinical care of common health problems in *neurosurgery* and the welfare of society.	2-1-ب-التأثير المتبادل بين الممارسة المهنية وانعكاسها علي البيئة.
2.1. C- Up to date and recent developments in common problems related to *neurosurgery*.	2-1-ج-التطورات العلمية في مجال التخصص.
2.1. D- Ethical and medicolegal principles relevant to practice in the *neurosurgery*.	2-1-د-المبادئ الأخلاقية و القانونية للممارسة المهنية في مجال التخصص.
2.1. E-Quality assurance principles related to the good medical practice in *neurosurgery*.	2-1-هـ- مبادئ و أساسيات الجودة في الممارسة المهنية في مجال التخصص
2.1. F- Ethical and scientific basics of medical research.	2-1-و- أساسيات وأخلاقيات البحث العلمي
2.2. A-Correlation of different relevant sciences in the problem solving and management of common diseases of *neurosurgery*. 2.2. B- Problem solving skills based on data analysis and evaluation (even in the absence of some) for common clinical situations related to *neurosurgery*.	2-2-أ- تحليل و تقييم المعلومات في مجال التخصص والقياس عليها لحل المشاكل

2.2. B- Problem solving skills based on data analysis and evaluation (even in the absence of some) for common clinical situations related to *neurosurgery*.	2-2-ب- حل المشاكل المتخصصة مع عدم توافر بعض المعطيات
2.2. A-Correlation of different relevant sciences in the problem solving and management of common diseases of *neurosurgery*.	2-2-ج- الربط بين المعارف المختلفة لحل المشاكل المهنية
2.2. C- Demonstrating systematic approach in studying clinical problems relevant to the *neurosurgery*.	2-2-د- إجراء دراسة بحثية و /أو كتابة دراسة علمية منهجية حول مشكلة بحثية
2.4.A-Demonstrate practice-based learning and Improvement skills that involves investigation and evaluation of their own patient care, appraisal and assimilation of scientific evidence, improvements in patient care and risk management	2-2هـ- تقييم المخاطر في الممارسات المهنية في مجال التخصص
2.4.A-Demonstrate practice-based learning and Improvement skills that involves investigation and evaluation of their own patient care, appraisal and assimilation of scientific evidence, improvements in patient care and risk management	2-2-و- التخطيط لتطوير الأداء في مجال التخصص
2.2.D- Making alternative decisions in different situations in the field of *neurosurgery*..	2-2-ز- اتخاذ القرارات المهنية في سياقات مهنية متنوعة
2.3.A- provide patient care that is compassionate, appropriate, and effective for the treatment of health problems and the promotion of health. 2.3.B- Demonstrate patient care skills relevant to *neurosurgery* for patients with common diseases and problems.	2-3-أ- إتقان المهارات المهنية الأساسية و الحديثة في مجال التخصص

2.3.C- Write and evaluate reports for Situation related to *neurosurgery*.	2-3-ب- كتابة و تقييم التقارير المهنية
2.3.A- provide patient care that is compassionate, appropriate, and effective for the treatment of health problems and the promotion of health. 2.3.B- Demonstrate patient care skills relevant to that speciality for patients with common diseases and problems.	2-3-ج- تقييم الطرق و الأدوات القائمة في مجال التخصص
2.4.D- Demonstrate interpersonal and communication skills that result in effective information exchange and teaming with patients, their families, and other health professionals.	2-4-أ-التواصل الفعال بأنواعه المختلفة
2.4.A-Demonstrate practice-based learning and improvement skills investigation and that involves evaluation of their own patient care, appraisal and assimilation of scientific evidence, improvements in patient care and risk management 2.4.B- Use all information sources and technology to improve his practice.	2-4-ب- استخدام تكنولوجيا المعلومات بما يخدم الممارسة المهنية

2.4.A-Demonstrate practice-based learning and improvement skills that involves investigation and evaluation of their own patient care, appraisal and assimilation of scientific evidence, improvements in patient care and risk management 2.4.B- Use all information sources and technology to improve his practice. 2.4.E-Demonstrate professionalism behavior, as manifested through a commitment to carrying out professional responsibilities, adherence to ethical principles, and sensitivity to a diverse patient population.	2-4-ج- التقييم الذاتي وتحديد احتياجاته التعلمية الشخصية
2.4.A-Demonstrate practice-based learning and improvement skills that involves investigation and evaluation of their own patient care, appraisal and assimilation of scientific evidence, , improvements in patient care and risk management.	2-4-د- استخدام المصادر المختلفة للحصول على المعلومات و المعارف
2.4. C- Demonstrate skills of teaching and evaluating others.	2-4-هـ- وضع قواعد ومؤشرات تقييم أداء الآخرين
2.4. F- Demonstrate an awareness of and responsiveness to the larger context and system of health care and the ability to effectively use system resources to provide care that is of optimal value.	2-4-و- العمل في فريق ، وقيادة فرق في سياقات مهنية مختلفة
2.4.G- Demonstrate skills of effective time management.	2-4-ز- إدارة الوقت بكفاءة
2.4.H- Demonstrate skills of self and continuous learning.	2-4-ح- التعلم الذاتي و المستمر

Comparison between ARS and ILOS for master degree in Neurosurgery

(ARS)	(ILOs)
2-1- Knowledge and understanding **2-1-A-** Established basic, biomedical, clinical, epidemiological and behavioral sciences related conditions, problem and topics.	***2-1- Knowledge and understanding*** **2-1-A**- Explain the essential facts and principles of relevant basic sciences including, Neuroanatomy, Histology of nervous system, Neuro-Physiology , Neuro-Pathology, and related to Neurosurgery. **2-1-B-** Mention essential facts of clinically supportive sciences including Basics of General surgery and neurological diseases related to neurosurgery. **2-1-C-** Demonstrate sufficient knowledge of etiology, clinical picture, diagnosis, prevention and treatment of the common diseases and situations related to neurosurgery.
2-1-B The relation between good clinical care of common health problem in the neurosurgery.and the welfare of society.	**2-1-H-** State the impact of common health problems in the field of neurosurgery. on the society and how good clinical practice improve these problems.
2-1-C- Up to date and recent developments in common problems related to the field of neurosurgery..	**2-1-C-** Demonstrate sufficient knowledge of etiology, clinical picture, diagnosis, prevention and treatment of the common diseases and situations related to neurosurgery.. **2-1-D-** Give the recent and update developments in the pathogenesis, diagnosis, prevention and treatment of common diseases related to neurosurgery
2-1-D- Ethical and medicolegal Principles relevant to practice in the neurosurgery field.	**2-1-E-** Mention the basic ethical and medicolegal principles that should be applied in practice and are relevant to the field of neurosurgery.

2-1-E-Quality assurance principles related to the good medical practice in the neurosurgery field.	**2-1-F-** Mention the basics and standards of quality assurance to ensure good clinical practice in the field of neurosurgery.
2-1-F- Ethical and scientific basics of medical research.	**2-1-G-** Mention the ethical and scientific principles of medical research methodology**.**
***2-2- Intellectual skills*:** **2-2-A-**Correlation of different relevant sciences in the problem solving and management of common diseases of the neurosurgery.	***2-2- Intellectual skills:*** **2-2-A-** Correlate the facts of relevant basic and clinically supportive sciences with clinical reasoning, diagnosis and management of common diseases of the neurosurgery.
2-2-B-Problem solving skills based on data analysis and evaluation (even in the absence of some) for common clinical situations related to neurosurgery.	**2-2-B-** Demonstrate an investigatory and analytic thinking approach (problem solving) to common clinical situations related to neurosurgery.
2-2-C- Demonstrating systematic approach in studding clinical problems relevant to the neurosurgery field.	**2-2-C-** Design and /or present a case or review (through seminars/journal clubs.) in one or more of common clinical problems relevant to the neurosurgery field.
2-2-D Making alternative decisions in different situations in the field of the neurosurgery	**2-2-D-** Formulate management plans and alternative decisions in different situations in the field of the neurosurgery

continuous (ARS)	continuous (ILOs)
2-3- Clinical skills:	***2/3/1/Practical skills (Patient Care :)***
2-3-A- Provide patient care that is compassionate, appropriate, and effective for the treatment of health problems and the promotion of health.	**2-3-1-A-** Obtain proper history and examine patients in caring and respectful behaviors.
	2-3-1-B- Make informed decisions about diagnostic and therapeutic interventions based on patient information and preferences, up-to-date scientific evidence, and clinical judgment for common conditions related to neurosurgery.
2-3-B- Demonstrate patient care skills relevant to that neurosurgery for patients with common diseases and problems.	**2-3-1-C-** Carry out patient management plans for common conditions related to neurosurgery.
	2-3-1-D- Use information technology to support patient care decisions and patient education in common clinical situations related to neurosurgery.
	2-3-1-E- Perform competently non invasive and invasive procedures considered essential for the neurosurgery.
	2-3-1-F- Provide health care services aimed at preventing health problems related to neurosurgery.
	2-3-1-G- Provide patient-focused care in common conditions related to neurosurgery. , while working with health care professionals, including those from other disciplines.

2-3-C- Write and evaluate reports for situations related to the field of neurosurgery.	**-3-1-H** Write competently all forms of patient charts and sheets including reports evaluating these charts and sheets. (Write a consultation note, Inform patients of a diagnosis and therapeutic plan, completing and maintaining medical records).
2-4- General skills **2-4-A-** Demonstrate practice-based learning and improvement skills that involves investigation and evaluation of their own patient care, appraisal and assimilation of scientific evidence, improvements in patient care and risk management	***2/3/2 General skills*** **2-3-2-A-** Perform practice-based improvement activities using a systematic methodology (share in audits and risk management activities and use logbooks). **2-3-2-B-** Appraises evidence from scientific studies. **2-3-2-C-** Conduct epidemiological studies and surveys.
2-4-B- Use all information sources and technology to improve his practice.	**2-3-2-C-** Conduct epidemiological studies and surveys. **2-3-2-D**.Perform data management including data entry and analysis and using information technology to manage information, access on-line medical information; and support their own education.
2-4-C- Demonstrate skills of teaching and evaluating others.	**2-3-2-E-** Facilitate learning of students other health care professionals including their evaluation and assessment.
2-4-D- Demonstrate interpersonal and communication skills that result in effective information exchange and teaming with patients, their families, and other health professionals.	**2-3-2-F-** Maintain therapeutic and ethically sound relationship with patients. **2-3-2-G-** Elicit information using effective nonverbal, explanatory, questioning, and writing skills. **2-3-2-H-** Provide information using effective nonverbal, explanatory, questioning, and writing skills. **2-3-2-I-** Work effectively with others as a member of a health care team or other professional group.

2-4-E-Demonstrate professionalism behaviors, as manifested through a commitment to carrying out professional responsibilities, adherence to ethical principles, and sensitivity to a diverse patient population.	**2-3-2-J-** Demonstrate respect, compassion, and integrity; a responsiveness to the needs of patients and society. **2-3-2-K**- Demonstrate a commitment to ethical principles including provision or withholding of clinical care, confidentiality of patient information, informed consent, business practices. **2-3-2-L**-Demonstrate sensitivity and responsiveness to patients' culture, age, gender, and disabilities.
2-4-F- Demonstrate an awareness of and responsiveness to the larger context and system of health care and the ability to effectively use system resources to provide care that is of optimal value.	**2-3-2-M**-Work effectively in relevant health care delivery settings and systems including good administrative and time management **2-3-2-N-** Practice cost-effective health care and resource allocation that does not compromise quality of care. **2-3-2-O**- Assist patients in dealing with system complexities.
2-4-G- Demonstrate skills of effective time management	**2-3-2-M**-Work effectively in relevant health care delivery settings and systems including good administrative and time management
2-4-H- Demonstrate skills of self and continuous learning.	**2-3-2-A-** Perform practice-based improvement activities using a systematic methodology (share in audits and risk management activities and use logbooks).

III-Program matrix
Knowledge and Understanding

Course	Program covered ILOs							
	2/1/A	2/1/B	2/1/C	2/1/D	2/1/E	2/1/F	2/1/G	2/1/H
Course1: **Neuroanatomy**	✓							
Course 2: **Histology of Nervous system**	✓							
Course 3:**Neuro-Physiology**	✓							
course 4 : **Neuro-pathology**	✓							
Course 5:General Surgery	✓	✓	✓	✓	✓	✓	✓	✓
Course6: Neurological diseases	✓	✓	✓	✓	✓	✓	✓	✓
Course 7 : Neurosurgery	✓	✓	✓	✓	✓	✓	✓	✓

Intellectual

Course	Program covered ILOs			
	2/2/A	2/2/B	2/2/C	2/2/D
Course1: **Neuroanatomy**	✓			
Course 2: **Histology of Nervous system**	✓			
Course 3:**Neuro- Physiology**	✓			
course 4 : **Neuro-pathology**	✓			
Course 5:General Surgery	✓	✓	✓	✓
Course6: Neurological diseases	✓	✓	✓	✓
Course 7 : Neurosurgery	✓	✓	✓	✓

Patient care

Course	Program covered ILOs							
	2/3/1/A	2/3/1/B	2/3/1/C	2/3/1/D	2/3/1/E	2/3/1/F	2/3/1/G	2/3/1/H
Course1: **Neuroanatomy**								
Course 2: **Histology of Nervous system**								
Course 3:**Neuro-Physiology**								
course 4 : **Neuro-pathology**								
Course 5:General Surgery	✓	✓	✓	✓	✓	✓	✓	
Course6: Neurological diseases	✓	✓	✓	✓	✓	✓	✓	
Course 7 : Neurosurgery	✓	✓	✓	✓	✓	✓	✓	✓

General Skills

Course	Program covered ILOs							
	2/3/2 /A	2/3/2 /B	2/3/2 /C	2/3/2 /D	2/3/2 /E	2/3/2 /F	2/3/2 /G	2/3/2 /H
Course1: **Neuroanatomy**				✓				✓
Course 2: **Histology of Nervous system**				✓				✓
Course 3:**Neuro-Physiology**				✓				✓
course 4 : **Neuro-pathology**				✓				✓
course 5 : General surgery	✓	✓	✓	✓	✓	✓	✓	✓
Course 6 : Neurology	✓	✓	✓	✓	✓	✓	✓	✓
Course 7 : Neurosurgery And Surgical pathology	✓	✓	✓	✓	✓	✓	✓	✓

General Skills

Course	Program covered ILOs						
	2/3/2/ I	2/3/2/ J	2/3/2/ K	2/3/2/ L	2/3/2/ M	2/3/2/ N	2/3/2/ O
Course1: **Neuroanatomy**			✓		✓		
Course 2: **Histology of Nervous system**			✓		✓		
Course 3:**Neuro-Physiology**			✓		✓		
course 4 : **Neuro-pathology**			✓		✓		
course 5 : General surgery		✓			✓		
Course 6 : Neurology	✓	✓	✓	✓	✓	✓	✓
Course 7 : Neurosurgery And Surgical pathology	✓	✓	✓	✓	✓	✓	✓

Annex 7, Additional information:

Department information:

Department of Neurosurgery
Faculty of medicine
Assiut University

Staff members:

M.Khallaf (Professor, Chief)
A.Mousa (Professor Emeritus)
R.ALKhayat (Professor Emeritus)
A.ELGheriany (Professor Emeritus)
R.Nouby (Professor Emeritus)
M.Hassan (Professor)
A.Abukresha (Assistant Professor)
M.ELsayed (Assistant Professor)
H.Hassan (Assistant Professor)
Wael M. Ali (Assistant Professor)
Abdelhakeem Abdelsattar (Assistant Professor)
Ahmed Shanawany (Assistant Professor)
Ahmed Abdallah Ismail (Assistant Professor)
Mohamed Ragaey (Assistant Professor)
Farrag Mohamed Farrag (Lecturer)
Ismail Taha (Lecturer)
Ali Abdelaleem (Lecturer)
Shady Abdelraheem (Lecturer)

Department quality control insurance for completing the program:

- Evaluation by the Department head and stuff members.
- Regular assessments.
- Log book monitoring.
- Recent equipments and Specialized Units.

(End of the program specifications)