MASTER (MSC) DEGREE PROGRAM AND COURSES SPECIFICATIONS FOR ORTHOPEDIC SURGERY &TRAUMATOLOGY

(According to currently applied Credit point bylaws)

ORTHOPEDIC SURGERY &TRAUMATOLOGY

Faculty of medicine

Assiut University

2022-2023/2023-2024

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Master degree of Orthopedic surgery and Traumatology

A. Basic Information

- **Program Title:** Master degree of Orthopedic surgery
- **Nature of the program:** Single.
- **Responsible Department:** Department of Orthopedic Surgery and traumatology -Faculty of Medicine- Assiut Univesity.
- **Program Academic Director (Head of the Department):** Prof. Mohammad Mostafa Mohammad El-Sharkawi

  Coordinator (s):

  - Principle coordinator: Prof. Khaled Mostafa

  - Assistant coordinator (s): Prof. Mohamed Mostafa Qotb

- **Internal evaluators:** Prof khaled Mohamed Hassan
- **External evaluator:** Prof Mohamed abdelwanes
- **Date of Approval by the Faculty of Medicine Council of Assiut University: 23 - 9 - 2014.**
- **Date of most recent approval of program specification:** 27 - 11 - 2022.
- **Total number of courses: 7 courses**

B. Professional Information

1- Program aims

1- Enable candidates to keep with national standards of Orthopedic patients' care.
2- Provide residents with fundamental knowledge of Orthopedics and Traumatology.
3- Enable candidates to start professional careers as specialists in Egypt and recognized as specialists abroad.
4- 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, anatomy , histology , physiology, biochemistry, pharmacology, pathology, microbiology and general surgery related to orthopedic surgery and traumatology.
B. Mention essential facts of clinically supportive sciences including - Basics of General Surgery, spine, sports medicine pediatrics and hand surgery related to orthopedic surgery and traumatology.
C. Demonstrate sufficient knowledge of etiology, clinical picture, diagnosis, prevention and treatment of common diseases and situations related to orthopedic surgery and traumatology.
D. Give the recent and update developments in the pathogenesis, diagnosis, prevention and treatment of common diseases related to orthopedic surgery and traumatology.
E. Mention the basic ethical and medicolegal principles relevant to the orthopedic surgery and traumatology.
F. Mention the basics of quality assurance to ensure good clinical care in the orthopedic surgery and traumatology.

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

H. State the impact of common health problems in the field of orthopedic surgery and traumatology on the society.

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 orthopedic surgery and traumatology.
B. Demonstrate an investigatory and analytic thinking approach (problem solving) to common clinical situations related to orthopedic surgery and traumatology.
C. Design and present case for common problem related to orthopedic surgery and traumatology.
D. Formulate management plans and alternative decisions in different situations in the field of the orthopedic surgery and traumatology.

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 orthopedic surgery and traumatology.
C. Carry out patient management plans for common conditions related to orthopedic surgery and traumatology.
D. Use information technology to support patient care decisions and patient education in common clinical situations related to orthopedic surgery and traumatology.

E. Perform competently non invasive and invasive procedures considered essential for the orthopedic surgery and traumatology.
F. Provide health care services aimed at preventing health problems related to orthopedic surgery and traumatology.
G. Provide patient-focused care in common conditions related to orthopedic surgery and traumatology, while working with health care professionals, including those from other disciplines

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 use logbooks).
B. Appraises evidence from scientific studies.
C. Conduct epidemiological Studies and surveys.
D. Perform data management including data entry and analysis.
E. Facilitate learning of students and other health care professionals.

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.

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 orthopedic surgery and traumatology

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 the Faculty Council on 23-9-2014. These standards were re-revised and approved without changes by the 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. Egyptian Fellowship Board
www.egyfellow.mohp.gov.eg/ZamalaFiles/10circ.pdf

5. Program Structure and Contents

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%.

D. Curriculum Structure: (Courses):

courses	Course Code			
		Lectures	training	total
First Part				
Basic science courses (8CP) **1- Course 1** **Unit 1 (Anatomy)** **Unit 2 (Histology).** **2- Course 2** **Unit 1 (Physiology)** **Unit 2 (Microbiology)** **3- Course 3 (Pharmacology)** **4- Course 4 (pathology)**	**ORT217A#** **ORT217B** **ORT206** **ORT205**	 1 1 1 1 2 2	 - - - - - -	 2 2 2 2
General clinical compulsory courses (6 points) **5- course 5 (General Surgery)** **6- Course 6 (Anaesthesia)**	 **ORT211** **ORT229**	 4 2	 - -	6
Elective courses*	2CP			
- Elective course				
Clinical training and scientific activities:				
Clinical training and scientific activities:(10 CP)			10	
Clinical training and scientific activities in Speciality course (14 CP)			14	
Total of the first part		**16**	**24**	**40**
Second Part	**Speciality courses 24 CP** **Speciality Clinical Work (log Book) 96 CP**			
Speciality Courses Course 7 Orthopedic surgery	ORT217C	24		
Training and practical activities in speciality (96 CP) (96 CP)			96	
Total of the second part		24	96	**120**
Thesis	**20 CP**			
Total of the degree	**180**			

 # Didactic (lectures, seminars, tutorial)

* 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.

Course 7 Orthopedic surgery

Modules/ Units' Titles' list	% from total Marks
1) Module 1 Trauma.	35
2) Module 2 - General Orthopaedics	20
3) Module 3 - Spine	12.5
4) Module 4 Sports Medicine - arthroscopy	7.5
5) Module 5 – Arthroplasty	7.5
6) Module 6 –Paediatrics & Deformities	7.5
7) Module 7 – Hand and Microsurgery and Oncology	10
Total No. of Modules/Units:	100%

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 :**

I-General Requirements:

- MBBCh Degree form any Egyptian Faculties of Medicine
- Equivalent Degree from medical schools abroad approved by the Ministry of Higher Education
- One year appointment within responsible department (for non Assiut University based registrars)

II-Specific Requirements:

- Fluent in English (study language)

VACATIONS AND STUDY LEAVE

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			
First Part	**Course Code**	**Written Exam**	**Oral Exam**	**Practical / Clinical Exam**	**Total**
Basic academic Courses:					
Course 1 Unit (Module) 1 Anatomy Unit (Module) 2 Histology.	**ORT217A#**	 30 30	 20 20	 - -	100
Course 2 Unit (Module) 1 (Physiology) Unit (Module) 2 (Microbiology)	**ORT217B**	 30 30	 20 20	 - -	100
Course 3 Pharmacology	**ORT206**	60	40	-	100
Course 4 Pathology	**ORT205**	60	40	-	100
General clinical courses					
Course 5 General surgery	ORT211	120	40	40	200
Course 6 Anesthesia	ORT229	60	40	-	100
Total of the first part					
Second Part					
Speciality Courses:					
Course 7 Orthopedic Surgery **Paper 1** **Paper 2** **Paper 3** **Paper 4**	**ORT217C**	 120 120 120 120	360	360	1200
Total of the degree					1900
Elective course		50	50	-	100

* 25% of the oral exam for assessment of logbook

Total degree 1900

700 marks for first part

1200 for second part

Written exam 40% (480 marks).

Clinical/practical and oral exams 60% (720 marks).

Examination system:

First part:

- Written Exam 2 hours in Anatomy and histology + oral exam.
- Written Exam 2 hours in Physiology & Microbiology) + oral exam.
- Written Exam 2 hours in Pharmacology + oral exam.
- Written Exam 2 hours in pathology+ oral exam.
- Written Exam 2 hours in General surgery+ oral+ clinical exam
- Written Exam 2 hours in Anaesthesia+ oral+ clinical exam.

Second part:

- Written exam four papers 3 hours for each oral+ clinical 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. Khaled Mostafa		9/2022
Head of the Responsible Department (Program Academic Director):	Prof. Mohammad El-Sharkawi		9/2022

Annex 1, Specifications for Courses / Modules

Annex 1: specifications for courses/

First Part

Course 1 Anatomy and Histology

Course 1 Unit (Module) 1 (Anatomy)

Name of department: **Orthopedic surgery and Traumatology.**
Faculty of medicine
Assiut University

2021-2022

1. Unit data

- **Unit Title: Anatomy**
- **Speciality: Orthopedic surgery**
- **Unit code : ORT217A#**
- **Number of credit point: Didactic 1 credit point (100 %) practical 0 credit point (0 %) total 1 credit point .**
- **Department delivering the Unit: Anatomy in conjunction with orthopedic surgery.**
- **Coordinator (s):Staff members of Anatomy Department in conjunction with Orthopedic surgery 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. Unit Aims

-The student should acquire the facts of Anatomy and embryology necessary for Orthopedic surgery.

3. Intended learning outcomes (ILOs):

A- Knowledge and understanding

ILOs	Methods of teaching/ learning	*Methods of Evaluation*
A. Describe anatomic details of: the musculoskeletal system including: - The upper limb - The lower limb - The peripheral nervous system - The spine & spinal cord	Lectures And training	-Written and oral examination - Log book
B- Mention the applied anatomy of the: musculoskeletal system Embryology of the Limbs and Spine		

B- Intellectual outcomes

ILOs	Methods of teaching/ learning	Methods of Evaluation
A-Apply the basic anatomic facts and Knowledge which are appropriate to orthopedic surgery in clinical reasoning , diagnosis and management of Musculoskeletal disorders	Didactic (lectures, seminars, tutorial)	-Written and oral examination -Log book
B- Correlate important anatomic relations with diagnosis and treatment of common Orthopedic problems		

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 conditions mentioned in A.A, A,B.	-Observation and supervision -Written and oral communication	Oral Exam Logbook Check list

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. Contents (topic s/modules/rotation
Course Matrix

Time Schedule: First Part

Topic	Covered ILOs			
	Knowledge A	Intellectual B	Practical skill C	General Skills D
- The upper limb	A	A&B	-	A-D
- The lower limb	A	A&B	-	A-D
- The peripheral nervous system	A	A&B	-	A-D
- The spine & spinal cord	A	A&B	-	A-D
- musculoskeletal system	B	A&B	-	A-D
- Embryology of the Limbs and Spine	B	A&B	-	A-D

5. Methods of teaching/learning:

1. Didactic (lectures, seminars, tutorial)
2. Observation and supervision
3. Senior staff experience

6. 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. 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: 50

8. List of references

i. Lectures notes

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

ii. Essential books

- Surgical Exposures in Orthopaedics: The Anatomic Approach (Hoppenfeld, Surgical Exposures in Orthopaedics) 4th Edition, 2009

iii. Recommended books

- Apley & Solomon's System of Orthopaedics and Trauma, 10 th edition , 2018

Roger Dee Orthopaedics and Trauma

McRai's Trauma

- Clinical Orthopaedic Examination 5th Edition By McRai's, 2004
- Campbell's Operative Orthopaedics, 14th Edition, 2020

iv. Periodicals, Web sites, … etc

Wheeless Text of Orthopedics

Orthopedics Hyperguide

Orthoteers

Online Jounrals

Pubmed

v. others: None

Course 1 Unit (Module) 2 (Histology)

Name of department: **Orthopedic surgery**
Faculty of medicine
Assiut University

2021-2022

I. Unit data

- **Unit Title: Histology**
- **Unit e code: ORT 217A#**
- **Speciality: Orthopedic surgery**
- **Number of credit point: Didactic 1 credit point (100%) practical 0(0%).total 1.**
- **Department (s) delivering the course: : Histology in conjunction with orthopedic surgery**
- **Coordinator (s): Staff members of Histology Department in conjunction with orthopedic surgery 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. Unit Aims

1. The student should acquire the histological facts necessary for orthopedic surgery in clinical reasoning, diagnosis and management of orthopedic diseases.
2. Learn the histology of different cellular elements, vascular system and nervous system.

3. Intended learning outcomes (ILOs):

A- Knowledge and understanding

ILOs	**Methods of teaching/ learning**	***Methods of Evaluation***
A. Mention Principles of General histology of: - Cell structure - Epithelium - Connective tissue proper - Blood cells - Blood vascular system - Lymphatic organs	-Lectures	-Written and oral examination - Log book
B-Describe histologic Details of: - Muscular tissue - Skeletal tissue - Nervous tissue		

B- Intellectual outcomes

ILOs	**Methods of teaching/ learning**	**Methods of Evaluation**
A- Correlate macroscopic and microscopic lesions of the above mentioned structure with clinical diagnosis of common orthopedic problem	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 conditions mentioned in A.A, A,B.	-Observation and supervision -Written and oral communication	Oral Exam Logbook Check list

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. Contents (topic s/modules/rotation
Course Matrix

Time Schedule: First Part

Topic	Covered ILOs			
	Knowledge	Intellectual	Practical skill	General Skills
Principles of General histology of:				
Cell structure	**A**	**A&B**	**-**	**A-D**
- Epithelium	**A**	**A&B**	**-**	**A-D**
- Connective tissue proper	**A**	**A&B**	**-**	**A-D**
- Blood cells	**A**	**A&B**	**-**	**A-D**
Lymphatic organs	**A**	**A&B**	**-**	**A-D**
- Muscular tissue	**B**	**A&B**	**-**	**A-D**
Skeletal tissue	**B**	**A&B**	**-**	**A-D**
Nervous tissue	**B**	**A&B**	**-**	**A-D**

5. Methods of teaching/learning:

1 Didactic (lectures, seminars, tutorial)
2 Laboratory work
3 Observation and supervision

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: 50

8. List of references

i. Lectures notes Staff members print out of lectures and/or CD copies

ii. Essential books

Basic Histology 14 th edition, 2016

. Recommended books

- Apley & Solomon's System of Orthopaedics and Trauma, 10 th edition , 2018

iv. Periodicals, Web sites, … etc

Orthopedics Hyperguide

9. Signatures

Course Coordinator	
Unit 1 Coordinator: **Prof. Khaled Mostafa**	**Head of the Department:**
Date: 9/2022	**Date: 9/2022**
Unit 2 Coordinator:	**Head of the Department:**
Date: 9/2022	**Date: 9/2022**

Course 2 Physiology and Microbiology

Name of department: Orthopedic surgery
Faculty of medicine
Assiut University

2022-2023

Course 2 Unit (Module) 1 (Physiology)

1. Unit data

- **Unit Title: Physiology**
- **Unit code: ORT 217 B**
- **Speciality is Orthopedic surgery**
- **Number of credit point: Didactic 1 Credit point, (100%) practical 0 credit point (0%) total 1.**
- **Department (s) delivering the course: Physiology in conjunction with Orthopedic surgery and traumatology**
- **Coordinator (s): Staff members of Physiology Department in conjunction with Orthopedic surgery and traumatology as annually approved by both departments councils**
- **Date last reviewed: 9/2022**
- **Requirements (prerequisites) if any :**
  - **None**

2. Unit Aims

-The student should acquire the physiological Background necessary for Orthopedic surgery and traumatology in clinical reasoning, diagnosis and management of diseases.

3. Intended learning outcomes (ILOs):

A- Knowledge and understanding

ILOs	Methods of teaching/ learning	*Methods of Evaluation*
A. Mention Physiologic Principles of bone muscular tissues: -Calcium Homeostasis -Physiology of Shock	-Lectures	-Written and oral examination - Log book
B. Describe Physiologic details of: Neurophysiology -Pain Pathway		

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 Orthopedic surgery .	Didactic (lectures, seminars, tutorial)	-Written and oral examination -Log book
B. Demonstrate an investigatory and analytic thinking (problem solving) approaches to common clinical situations related to Orthopedic surgery .		

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 conditions mentioned in A.A, A,B.	-Observation and supervision -Written and oral communication	Oral Exam Logbook Check list

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

Course contents (topic s/modules/rotation
Course Matrix

Time Schedule: First Part

Topic	Covered ILOs			
	Knowledge	Intellectual	Practical skill	General Skills
Calcium Homeostasis	A	A&B	-	A-D
-Physiology of Shock	A	A&B	-	A-D
Pain Pathway	B	A&B	-	A-D

5. Methods of teaching/learning:

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

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

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

7. 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: 50

8. List of references

i. Lectures notes

- Staff members print out of lectures and/or CD copies
- Medical physiology books by Staff Members of the Department of Medical physiology -Assiut University.

ii. Essential books

- Guyton and Hall Textbook of Medical Physiology (Guyton Physiology) 13th Edition, 2015

iii. Recommended books

- Apley & Solomon's System of Orthopaedics and Trauma, 10 th edition , 2018

iv. Periodicals, Web sites, … etc

- Journal of applied physiology.

Wheeless Text of Orthopedics

Course 2 Unit 2 (Microbiology)

***Name of department*: Orthopedic surgery**

Faculty of medicine

Assiut University

2022-2023

1. Unit data

- **Unit Title: Microbiology**
- **Unit code: ORT217B**
- **Speciality: Orthopedic surgery**
- **Number of credit point: Didactic 1 Credit points (100%) practical 0 (0 %) total 1.**
- **Department (s) delivering the Unit: Microbiology in conjunction with Orthopedic surgery**
- **Coordinator (s):**

  Staff members of Microbiology Department in conjunction with Orthopedic surgery 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. Unit Aims

-The student should acquire the facts of microbiology necessary for orthopedic surgery.

3. Intended learning outcomes (ILOs):

A- Knowledge and understanding

ILOs	Methods of teaching/ learning	*Methods of Evaluation*
A. Describe Principles of Microbiology of: immunology Bone marrow transplantation Graft rejection	-Lectures -Laboratory work	-Written and oral examination -Assessment of practical skills - Log book
B- Describe details of Microbiology of : Disinfection and sterilization Anti-microbial resistance Septic & aseptic arthritis Study of specific microorganisms		

B- Intellectual outcomes

ILOs	Methods of teaching/ learning	Methods of Evaluation
A. Correlates the facts of microbiology with clinical reasoning, diagnosis and management of common diseases related to Orthopedic surgery.	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 conditions mentioned in A.A, A,B.	-Observation and supervision -Written and oral communication	Oral Exam Logbook Check list

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
Immunology	A	A	-	A-D
Bone marrow transplantation	A	A	-	A-D
Graft rejection	A	A	-	A-D
Disinfection and sterilization	B	A	-	A-D
Anti-microbial resistance	B	A	-	A-D
Septic & aseptic arthritis	B	A	-	A-D
Study of specific microorganisms	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: 50

8. List of references

i. Lectures notes

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

ii. Essential books

- Jawetz, Melnick, & Adelberg's Medical Microbiology, 28t e**,** 2019

iii. Recommended books

- Sherris Medical Microbiology, Fifth Edition, 2010
- Microbiology, 2nd edition: Books: by Richard A. Harvey, Pamela
- Appleton and Lange Review of Microbiology

iv. Periodicals, Web sites, … etc

-Journal of clinical microbiology

-Microbiology

-Journal of Medical microbiology

v. others

None

9. Signature

Course Coordinator	
Unit 1 Coordinator:	**Head of the Department:**
Date:	**Date:**
Unit 2 Coordinator: Prof. Khaled Mostafa	**Head of the Department:**
Date:	**Date:**

Course 3 (Pharmacology)

1. Course data

- **Course name: Pharmacology**
- **Course code: ORT206**
- **Speciality : Orthopedic surgery**
- **Number of hours Didactic 2 credit point , (100%) practical 0 (0%) total 2.**
- **Department (s) delivering the course: Pharmacology in conjunction with Orthopedic surgery department.**
- **Coordinator (s): Staff members of Pharmacology Department in conjunction with Orthopedic surgery 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 facts of pharmacology necessary for Orthopedic surgery in clinical reasoning, diagnosis and management of Orthopedic diseases including.

3. Intended learning outcomes (ILOs):

A- Knowledge and understanding

ILOs	Methods of teaching/ learning	*Methods of Evaluation*
A. Mention *principles of pharmacology of:* - Drugs used in the treatment of rheumatoid arthritis -Drugs used in the treatment of osteoporosis -Antibiotics	-Lectures and training	-Written and oral examination - Log book
B. Describe *details of pharmacology of:* Non-Steroidal Anti-Inflammatory Drugs -Opioid analgesics -Corticosteroids		

B- Intellectual outcomes

ILOs	Methods of teaching/ learning	Methods of Evaluation
A. Apply the facts of pharmacology which are appropriate to Orthopedic surgery in clinical reasoning	Didactic (lectures, seminars, tutorial)	-Written and oral examination -Log book

C- Practical skills

Practical: 0 hours

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 conditions mentioned in A.A, A,B.	-Observation and supervision -Written and oral communication	Oral Exam Logbook Check list

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

Course contents (topic s/modules/rotation
Course Matrix

Time Schedule: First Part

Topic	Covered ILOs			
	Knowledge	Intellectual	Practical skill	General Skills
- Drugs used in the treatment of rheumatoid arthritis	A	A	-	A-D
-Drugs used in the treatment of osteoporosis	A	A	-	A-D
Antibiotics	A	A	-	A-D
Opioid analgesics	B	A	-	A-D
-Corticosteroids	B	A	-	A-D

5. Course Methods of teaching/learning:

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

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

Extra Didactic (lectures, seminars, tutorial) 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

Roger Dee Orthopaedics and Trauma

iii. Recommended books

- Campbell's Operative Orthopaedics, 14th Edition, 2020

iv. Periodicals, Web sites, … etc

- Orthoteers
- Online Jounrals
- Pubmed

v. others

None

9. Signature

Course Coordinator	
Coordinator:	**Head of the Department:**
Date:	**Date:**

Course 4 Pathology

Name of department: **ORTHOPEDIC SURGERY**

Faculty of medicine, Assiut University

2021-2022

1. Course data

- **Course Title: Pathology**
- **Course code: ORT205**
- **Speciality is ORTHOPEDIC SURGERY**
- **Number of hours Didactic 2, (100%) practical 0 (0%), total 2.**
- **Department (s) delivering the course: Pathology in conjunction with ORTHOPEDIC SURGERY**
- **Coordinator (s): Staff members of Pathology Department in conjunction ORTHOPEDIC SURGERY 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 ORTHOPEDIC SURGERY

3. Intended learning outcomes (ILOs):

A- Knowledge and understanding

ILOs	Methods of teaching/ learning	*Methods of Evaluation*
A. Mention Principles of General Pathology of: The nervous system Tumours Bone Healing TB	-Lectures and training	-Written and oral examination - Log book
B-Describe Pathologic Details of: - The musculo-skeletal System		

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 The musculo-skeletal System	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 conditions mentioned in A.A, A,B.	-Observation and supervision -Written and oral communication	Oral Exam Logbook Check list

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**
Principles of General Pathology of:				
The nervous system	**A**	**A**	**-**	**A-D**
Tumours	**A**	**A**	**-**	**A-D**
Bone Healing	**A**	**A**	**-**	**A-D**
TB	**A**	**A**	**-**	**A-D**
Pathologic Details of:				
The musculo-skeletal System	**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

- Robbins Basic Pathology. 10th Edition 2017
- **iii. Recommended books**

Roger Dee Orthopaedics and Trauma

Human pathology

iv. Periodicals, Web sites, … etc

Orthopedics Hyperguide

Orthoteers

Online Journals

Pubmed

v. others

None

Course Coordinator	
Coordinator:	**Head of the Department**
Date	**Date:**

Course 5 General surgery

1. Course data

- **Course Title:** General surgery
- **Course code:** **ORT 211**
- **Speciality is Orthopedic surgery**
- **Number of hours** **Didactic 4 credit point (40 %) practical 6 credit point (60%) total 10.**
- **Department (s) delivering the course: GENERAL SURGERY in conjunction with Orthopedic surgery**
- **Coordinator (s): Staff members of GENERAL SURGERY Department in conjunction with Orthopedic surgery 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 basic Knowledge and surgical skills necessary for orthopedic surgery in clinical reasoning, diagnosis and management of orthopedic diseases and trauma

3. 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: Wound healing & management Major trauma and the multiply injured patient Fluid, electrolyte & acid-base imbalance Haemorrhage & blood transfusion Haemostasis Shock Surgical infections	-Lectures	-Written and oral examination - Log book
B. Mention the current and updated principles of: basics of general Surgery		
C. State update and evidence based Knowledge of Major trauma and the multiply injured patient		
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 relevant to 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. Correlate the facts of basic of General surgery which are appropriate to Orthopedic surgery in clinical reasoning, diagnosis and management of orthopedic related problems	Didactic (lectures, seminars, tutorial)	-Written and oral examination -Log book
B. Apply clinically supportive sciences which are appropriate to the areas of orthopedic surgery.		

C- Practical skills

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 Attend surgical rounds & operating lists.	Written and oral examination Log book
B- Prescribe and perform the following non invasive/invasive therapeutic procedures: <u>Prescribe and perform under supervision:</u> Operation for multiple injured patients		
C-Carry out patient management plans for the following problems List: - Electrolyte Imbalance -shock- Hemorrhage -Surgical infection -Multiple Injured patient		

D- General Skills

Practice-Based Learning and Improvement

ILOs	Methods of teaching/ learning	Methods of Evaluation
A. Perform data management including data entry and analysis.	-Observation and supervision -Written and oral communication	Log book

Interpersonal and Communication Skills

ILOs	Methods of teaching/ learning	Methods of Evaluation
B. Elicit information using effective nonverbal, explanatory, questioning, and writing skills.	-Observation and supervision -Written and oral communication	Log book
C. Write a report in common condition mentioned in A.A		

Professionalism

ILOs	Methods of teaching/ learning	Methods of Evaluation
D. Demonstrate respect, compassion, and integrity; a responsiveness to the needs of patients and society	-Observation -Senior staff experience	Logbook

Systems-Based Practice

ILOs	Methods of teaching/ learning	Methods of Evaluation
E. Work effectively in relevant health care delivery settings and systems.	Observation -Senior staff experience	Logbook

Course contents (topic s/modules/rotation
Course Matrix

Time Schedule: First Part

Topic	Covered ILOs			
	Knowledge	Intellectual	Practical skill	General Skills
multiply injured patient	A,C,D-H	A&B	A-C	A-E
Fluid, electrolyte & acid-base imbalance	A, D-H	A&B	A-C	A-E
Haemorrhage & blood transfusion	A, D-H	A&B	A-C	A-E
Haemostasis	A, D-H	A&B	A-C	A-E
Shock	A, D-H	A&B	A-C	A-E
Surgical infections	A, D-H	A&B	A-C	A-E
- Basics of general Surgery	A, D-H	A&B	A-C	A-E

5. Course Methods of teaching/learning:

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

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

Extra Didactic (lectures, seminars, tutorial) 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: 200

8. List of references

i. Lectures notes

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

ii. Essential books

Kaser eleiney text book-Rafik text book

iii. Recommended books

- Apley & Solomon's System of Orthopaedics and Trauma, 10 th edition , 2018
- Roger Dee Orthopedics and Trauma
- McRai's Trauma

iv. Periodicals, Web sites, … etc

Wheeless Text of Orthopedics

Orthopedics Hyperguide

Orthoteers

Online Jounrals

9. Signature

Course Coordinator	
Coordinator:	**Head of the Department:**
Date:	**Date:**

Course 6 Anesthesia

1. Course data

- **Course Title:** Anaesthesia
- **Course code: ORT 229**
- **Speciality is Orthopedic surgery**
- **Number of hours Didactic 2 credit point (33.3 %) practical 4 credit point (66.7%) total 6.**
- **Department (s) delivering the course: Anaesthesia and post operative intensive care in conjunction with Orthopedic surgery**
- **Coordinator (s): Staff members of Anaesthesia and post operative intensive care Department in conjunction with Orthopedic surgery 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 basic Knowledge and skills of Anesthesia necessary for orthopedic surgery in clinical reasoning, diagnosis and management of orthopedic diseases and trauma

3. 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: 1-Cardiopulmonary resuscitation 2) Principles of Anesthesia for Orthopedic Surgery 3) Principles of Anesthesia for Trauma Patients 4) Postoperative complications 5) ICU care of poly traumatized patient 6) ICU management of shocked patient	-Lectures	-Written and oral examination - Log book
B. Mention the current and updated principles of: -Fluid, electrolyte & acid-base imbalance · Hemorrhage & blood transfusion · Shock. · Principles of preoperative		

Patient preparation. · Principles of Postoperative patient care and acute pain management. · Hemodynamic Monitoring		
C. State update and evidence based Knowledge of Principles of preoperative Patient preparation. Principles of Postoperative patient care and acute pain management.		
D. Memorize the facts and principles of the relevant basic and clinically supportive sciences related to Anesthesia		
E. Mention the basic ethical and medicolegal principles relevant to trauma.		
F. Mention the basics of quality assurance to ensure good clinical care in Anesthesia		
G. Mention the ethical and scientific principles of medical research.		
H. State the impact of common health problems in the field of Anesthesia on the society.		

B- Intellectual outcomes

ILOs	Methods of teaching/ learning	Methods of Evaluation
A. Correlate the facts of basic of General surgery which are appropriate to Orthopedic surgery in clinical reasoning, diagnosis and management of orthopedic related problems	Didactic (lectures, seminars, tutorial)	-Written and oral examination -Log book
B. Apply clinically supportive sciences which are appropriate to the areas of orthopedic surgery.		

C- Practical skills

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 -Direct observation -case presentation Attend operating lists.	Written and oral examination Log book
B- Prescribe and perform the following non invasive/invasive therapeutic procedures: <u>Prescribe and perform under supervision:</u> a-Airway management b. Arterial blood gases c. Local anesthetic techniques((local IV, axillary, brachial plexus block) d. Central venous catheter insertion e. Hemodynamic Monitoring f. Endotracheal intubation		
C-Carry out patient management plans for the following problems List: -Shock -Hemorrhage -Sepsis syndrome -Multiple Injured patients -Postoperative patient care and acute pain management. -Vascular injury		

D- General Skills

Practice-Based Learning and Improvement

ILOs	Methods of teaching/ learning	Methods of Evaluation
A. Perform data management including data entry and analysis.	-Observation and supervision -Written and oral communication	Log book

Interpersonal and Communication Skills

ILOs	Methods of teaching/ learning	Methods of Evaluation
B. Elicit information using effective nonverbal, explanatory, questioning, and writing skills.	-Observation and supervision -Written and oral communication	Log book
C. Write a report in common condition mentioned in A.A		

Professionalism

ILOs	Methods of teaching/ learning	Methods of Evaluation
D. Demonstrate respect, compassion, and integrity; a responsiveness to the needs of patients and society	-Observation -Senior staff experience	Logbook

Systems-Based Practice

ILOs	Methods of teaching/ learning	Methods of Evaluation
E. Work effectively in relevant health care delivery settings and systems.	Observation -Senior staff experience	Logbook

Course contents (topic s/modules/rotation
Course Matrix

Time Schedule: First Part

Topic	Covered ILOs			
	Knowledge	Intellectual	Practical skill	General Skills
Cardiopulmonary resuscitation	A,D-H	A&B	A-C	A-E
Principles of Anesthesia for Orthopedic Surgery	A, D-H	A&B	A-C	A-E
Principles of Anesthesia for Trauma Patients	A, D-H	A&B	A-C	A-E
Postoperative complications	A, D-H	A&B	A-C	A-E
ICU care of poly multiply injured patient of poly traumatized patient	A,D-H	A&B	A-C	A-E
ICU management of shocked patient	A, D-H	A&B	A-C	A-E
Shock	B, D-H	A&B	A-C	A-E
-Hemorrhage	B, D-H	A&B	A-C	A-E
-Sepsis syndrome	B, D-H	A&B	A-C	A-E
-Multiple Injured patients	B, D-H	A&B	A-C	A-E
-Postoperative patient care	B,C, D-H	A&B	A-C	A-E
acute pain management.	B,C, D-H	A&B	A-C	A-E

5. Course Methods of teaching/learning:

1. Didactic (lectures, seminars, tutorial)
2. Observation
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

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

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

ii. Essential books

- Morgan and Mikhail's Clinical Anesthesiology, 5th edition , 2013.

iii. Recommended books

- Miller R.D., Cucchiara RF et al, (2010): Anesthesia, 5th edition, vol(1).

iv. Periodicals, Web sites, … etc

- British journal of anesthesia

9. Signature

Course Coordinator	
Coordinator:	**Head of the Department:**
Date:	**Date:**

Second Part

Course 7 orthopedic surgery

Name of department: Orthopedic surgery
Faculty of medicine, Assiut University
2021-2023

1. Course data

- **Course Title:** Orthopedic surgery and traumatology.
- **Course code:** ORT217 C
- **Speciality :** Orthopedic Surgery
- **Department (s) delivering the course:** Department of Orthopedic surgery and traumatology - Faculty of Medicine-Assiut University.
- **Coordinator (s):**

- Principle coordinator: Prof. Khaled Mostafa
- Assistant coordinator (s): Prof. Mohamed Mostafa Qotb
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.**

This course consists of 7 Units (Modules)

- UNIT (Module) 1 Trauma
- Unit (Module) 2 General orthopaedics
- Unit (Module) 3 Spine

- Unit (Module) 4 Sports Medicine - arthroscopy
- Unit (Module) 5 Arthroplasty
- Unit (Module) 6 Paediatrics & Deformities
- Unit (Module) 7 Hand, microsurgery and orthopaedic oncology

- **Unit Coordinator (s):**

Unit	Principle Coordinator	Assistant coordinators
1- Unit (Module) 1 Trauma	Prof: Osama Farouk	Dr :Hatem Galal Zaki
2- Unit (Module) 2 General orthopaedics	Prof Mohammad Gamal	Prof. Prof Faisal Fahmy
3- Unit (Module) 3 Spine	Prof Essam El Sherif	Dr. Mohamad El-Sharkawi
4- Unit (Module) 4 Sports Medicine - arthroscopy **&**	Prof Maher El Assal	Prof Hesham el Kady
5- Unit (Module) 5 Arthroplasty	Prof Ahmed Abdel Aal	Dr Yasser Imam
6- Unit (Module) 6 Paediatrics & Deformities	Prof Kamal El Gaafary	
7-Unit (Module) 7 Hand, microsurgery and orthopaedic oncology	Prof Tarek el Gammal	Dr Amr Elsayed

2. Course aims

1. To enable candidates to keep with national standards of Orthopedic patients' care by teaching high level of clinical skills, bedside care skills, in addition to update medical knowledge as well as clinical, surgical experience and competence in the area of Orthopedics and Traumatology `and their subspecialties.
2. Provide residents with fundamental knowledge of Orthopedics and Traumatology.
3. To introduce candidates to the basics of scientific medical research.

3. Course intended learning outcomes (ILOs):

Unit (Module) 1 Trauma

A- Knowledge and understanding

ILOs	Methods of teaching/ learning	*Methods of Evaluation*
A. Describe the etiology, clinical picture, diagnosis and management of the following clinical conditions: • Principles of Soft tissue coverage for Open Fractures and wound Defects • Principles of Vascular repair and Reconstruction • Full Knowledge of ATLS Protocols • Biomechanics of fractures and fixation • Classification of fractures and soft tissue injuries • Principles of non operative fracture treatment • Principles of internal fixation • Principles of external fixation • Mechanism of bone and soft tissue healing • Principles and indications for amputations • Complications of fractures • Causes of pathological fractures	Didactic; -Lectures -Clinical rounds -Seminars -Clinical rotations (service teaching)	-OSCE at the end of each year -log book & portfolio - MCQ examination at the second year -Oral and written exam

• Periprothetic fractures		
B. Mention the current and updated principles of following: Poly trauma • Anatomy of the Spine Lower and Upper limbs, Pelvis and Acetabulum. • Physiology of Polytrauma, Hemorrhage and Shock, Fluid and Electrolyte imbalance and Metabolic Response to trauma		
C. State update and evidence based Knowledge of • Biomechanics of fractures and fixation • Classification of fractures and soft tissue injuries • Principles of non operative fracture treatment • Principles of internal fixation • Principles of external fixation		
D. Memorize the facts and principles of the relevant basic and clinically supportive sciences related to Trauma		
E. Mention the basic ethical and medicolegal principles relevant to trauma.		
F. Mention the basics of quality assurance to ensure good clinical care in trauma		
G. Mention the ethical and scientific principles of medical research.		
H. State the impact of common health problems in the field of trauma 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 Orthopedic surgery and traumatology.	Clinical rounds Senior staff experience	Procedure/case presentation Log book
B. Demonstrate an investigatory and analytic thinking (problem solving) approaches to common clinical situations related to Orthopedic surgery and traumatology..		
C. Design and present cases , seminars in common problem		
D-Formulate management plans and alternative decisions in different situations in the field of the Orthopedic surgery and traumatology..		

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.	-Didactic; -Lectures -Clinical rounds -Seminars -Clinical rotations (service teaching)	OSCE at the end of each year -log book & portfolio - One MCQ examination at the

		second half of the second year and another one in the third year
B. Order, perform and interpret the following non invasive/invasive diagnostic procedures -Routine appropriate Lab investigations related to conditions mentioned in A.A -X rays. -CT - MRI	Clinical round with senior staff Observation Post graduate teaching Hand on workshops	-Procedure presentation - Log book - Chick list
C. Carry out patient management plans for common conditions related to Orthopedic surgery and traumatology Perform: 1. Primary emergency management according to ATLS protocols for Polytrauma patients 2. Primary and Surgical management of open fractures 3. Perform Primary Non-operative and operative management of : mentioned Fractures of the Upper Limb and Lower Limb & in Fractures of the Pelvis and Acetabulum 4. Manage and Assist and Perform Minor emergency managements in mentioned Fr Spine 5. Manage Paediatric Fractures.	Clinical round with senior staff	
D. Use information technology to support patient care decisions and patient education in common clinical situations related to Orthopedic surgery and traumatology		

E-Provide health care services aimed at preventing health problems related to Orthopedic surgery and traumatology		
F-Provide patient-focused care in common conditions related to Orthopedic surgery and traumatology , while working with health care professionals, including those from other disciplines like: Conditions mentioned 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 communication	Procedure/case presentation -Log book and Portfolios
B. Appraises evidence from scientific studies(journal club)	-Journal clubs - Discussions in seminars and clinical rounds	
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.	Clinical rounds Senior staff experience	

Interpersonal and Communication Skills

ILOs	Methods of teaching/ learning	Methods of Evaluation
F. Maintain therapeutic and ethically sound relationship with patients.	Simulations Clinical round Seminars Lectures Case presentation Hand on workshops	Global rating Procedure/case presentation Log book Portfolios Chick list and
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 problems related to Orthopedic surgery and traumatology.	Clinical round Seminars	Clinical Exam
K. Write a report : -Patients medical report -Death report	Senior staff experience	Chick list
L. Council patients and families about: -common orthopedic and trauma diseases	Clinical round with senior staff	

Professionalism

ILOs	Methods of teaching/ learning	Methods of Evaluation
M. Demonstrate respect, compassion, and integrity; a responsiveness to the needs of patients and society	Observation Senior staff experience Case taking	1. Objective structured clinical examination 2. Patient survey
N. Demonstrate a commitment to ethical principles including provision or withholding of clinical care, confidentiality of patient information, informed consent, business practices		1. 360o global rating
O. Demonstrate sensitivity and responsiveness to patients' culture, age, gender, and disabilities		1. Objective structured clinical examination 2. 360o global rating

Systems-Based Practice

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

Unit (Module) 2 General orthopedic

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: 1. Rheumatological Disease 2. Bone and soft tissue infections: Common Ortho Organisms	Didactic; -Lectures -Clinical rounds -Seminars -Clinical rotations (service teaching)	-OSCE at the end of each year -log book & portfolio - MCQ examination at the second year -Oral and written exam
B. Mention principles of following: 1. Bone, tendon, Cartilage, Muscle Structure 2. Bone healing and musculoskeletal tissue repair 3. Biomechanics and Principles of Deformity Correction 4. Bone Atrophy disease		
C. State update and evidence based Knowledge of Bone and soft tissue infections: Common Ortho Organisms - Bone Atrophy disease		
D. Memorize the facts and principles of the relevant basic and clinically supportive sciences related to orthopedic surgery.		
E. Mention the basic ethical and medicolegal principles relevant to orthopedic surgery.		
F. Mention the basics of quality assurance to ensure good clinical care in orthopedic surgery.		
G. Mention the ethical and scientific principles of medical research.		
H. State the impact of common health problems in the field of orthopedic 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 orthopedic surgery.	Clinical rounds Senior staff experience	Procedure/case presentation Log book
B. Demonstrate an investigatory and analytic thinking (problem solving) approaches to common clinical situations related to orthopedic 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 orthopedic 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.	-Didactic; -Lectures -Clinical rounds -Seminars -Clinical rotations (service teaching)	OSCE at the end of each year -log book & portfolio - One MCQ examination at the second half of the second year and another one in the third year
B. Order the following non invasive/invasive diagnostic procedures -Routine appropriate Lab investigations related to conditions mentioned in A.A -X ray . -CT. -MRI.	Clinical round with senior staff Observation Post graduate teaching Hand on workshops	-Procedure presentation - Log book - Chick list
C. Interpret the diagnostic procedures mentioned above	Clinical round with senior staff	Procedure presentation - Log book - Chick list

D. Perform the following non invasive and invasive Diagnostic and therapeutic procedures. Operative management of the conditions mentioned in A.A. -	Clinical round with senior staff -Perform under supervision of senior staff	Procedure presentation - Log book - Chick list
E. Prescribe the following non invasive/invasive therapeutic procedures : -Prescribe proper treatment for conditions mentioned in A.A.	Clinical round with senior staff	- Procedure presentation - Log book - Chick list
F. Carry out patient management plans for common conditions related to ORTHOPEDIC SURGERY.	Clinical round with senior staff	
G. Use information technology to support patient care decisions and patient education in common clinical situations related to ORTHOPEDIC SURGERY .		
H-Provide health care services aimed at preventing health problems related to ORTHOPEDIC SURGERY		
I-Provide patient-focused care in common conditions related to ORTHOPEDIC SURGERY , while working with health care professionals, including those from other disciplines like: Conditions mentioned 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(audit, logbook)	-Case log -Observation and supervision -Written & oral communication	Procedure/case presentation -Log book and Portfolios
B. Appraises evidence from scientific studies(journal club)	-Journal clubs - Discussions in seminars and clinical rounds	
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.	Clinical rounds Senior staff experience	

Interpersonal and Communication Skills

ILOs	Methods of teaching/ learning	Methods of Evaluation
F. Maintain therapeutic and ethically sound relationship with patients.	Simulations Clinical round Seminars Lectures Case presentation Hand on workshops	Global rating Procedure/case presentation Log book Portfolios Chick list and
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 problems related to ORTHOPEDIC SURGERY.	Clinical round Seminars	Clinical Exam
K. Write a report : -Patients medical report -discharge report -Death report	Senior staff experience	Chick list
L. Council patients and families about: -general orthopedic diseases.	Clinical round with senior staff	

Professionalism

ILOs	Methods of teaching/ learning	Methods of Evaluation
M. Demonstrate respect, compassion, and integrity; a responsiveness to the needs of patients and society	Observation Senior staff experience Case taking	1. Objective structured clinical examination 2. Patient survey
N. Demonstrate a commitment to ethical principles including provision or withholding of clinical care, confidentiality of patient information, informed consent, business practices		1. 360o global rating
O. Demonstrate sensitivity and responsiveness to patients' culture, age, gender, and disabilities		1. Objective structured clinical examination 2. 360o global rating

Systems-Based Practice

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

Unit 3 Spine

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: - Rheumatoid arthritis of the spine - Torticollis - Tumors of the spine - Lumbar disc diseases - Lumbar canal stenosis - Spinal infections specially Pott's disease - Ankylosing spondylitis - Kyphosis - Scoliosis	Didactic; Lectures Clinical rounds Seminars Clinical rotations (service teaching	Written Exam Oral exam
B. Mention the principles of: Anatomy and development of spine Surgical approach of different region of spine - Degenerative cervical spine disorders & CDP Spondylolisthesis Analgesic drugs Drug treatment of metabolic bone diseases Antibiotics		
C. State update and evidence based Knowledge of - Rheumatoid arthritis of the spine - Torticollis - Tumors of the spine - Lumbar disc diseases		
D. Memorize the facts and principles of the relevant basic and clinically supportive sciences related to Spine		
E. Mention the basic ethical and medicolegal		

principles relevant to spine		
F. Mention the basics of quality assurance to ensure good clinical care in spine		
G. Mention the ethical and scientific principles of medical research		
H. State the impact of common health problems in spine 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 spine	Clinical rounds Senior staff experience	Portfolios Procedure/case presentation Log book
B. Demonstrate an investigatory and analytic thinking (problem solving) approaches to common clinical situations related to spine		
C. Design and present cases , seminars in common problem		
D-Formulate management plans and alternative decisions in different situations in the field of the spine		

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.	Lectures Clinical rounds Seminars Clinical round with senior staff Observation Post graduate teaching Hands on workshops Case Presentation	Clinical Exam. Checklist Logbook and portfolio Procedure presentation
B. Order the following non invasive and invasive diagnostic procedures All necessary radiological investigations for the mentioned Problems e.g X rays , CT, MRI , bone scan and bone mineral density Bone mineral profile interpret X rays Bone mineral profile		
C. Interpret the following non invasive/invasive diagnostic procedures ▪ All necessary radiological investigations for the mentioned Problems in A.A e.g Xrays , CT, MRI . ▪ Diagnostic arthroscopy		
D. Perform the following non invasive/invasive therapeutic procedures Perform and assist in surgeries of previously mentioned conditions.	Assisting senior staff in operations	Oral Exam Procedure presentation - Log book - Chick list
E. Prescribe the following non invasive and		

invasive therapeutic procedures : - Perform and assist in surgeries of previously mentioned conditions.		
F. Carry out patient management plans for common conditions related to spine		
G. Use information technology to support patient care decisions and patient education in common clinical situations related to spine.		
H. Provide health care services aimed at preventing health problems related to spine like: -Advanced spine tumors and deformities through early detection Spine infections		
I. Provide patient-focused care in common conditions related to spine., while working with health care professionals, including those from other disciplines like in: Chronic bone pains Metabolic bone disease		

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)	Simulations Clinical round Seminars Lectures Case presentation Hand on workshops	Global rating Portfolios Procedure/case presentation Log book Chick list
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.	Simulations Clinical round Seminars Lectures Case presentation Hand on workshops	Global rating Log book Chick list
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 related to Spine		
K. Write a report in: -Patient post operative report -Discharge report		
L. Council patients and families about: -Sequelae of operative and non-operative manage-ment. -Explain perioperative process, likely outcome and time to recovery to patients, and check understanding. - Lifestyle modification.		

Professionalism

ILOs	Methods of teaching/ learning	Methods of Evaluation
M. Demonstrate respect, compassion, and integrity; a responsiveness to the needs of patients and society	Observation Senior staff experience Case taking	1. Objective structured clinical examination 2. Patient survey
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 Senior staff experience	-360o global rating -Log book Senior staff opinion
Q. Practice cost-effective health care and resource allocation that does not compromise quality of care.		1. Check list evaluation of live or recorded performance
R. Assist patients in dealing with system complexities.		1. 360o global rating 2. Patient survey

Unit 4 Sport Medicine and Arthroscopy

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: ▪ Congenital discoid meniscus ▪ Chondromalacia patellae ▪ Osteochondritis dissecans ▪ Osgood-shlatter disease ▪ Knee deformities ▪ Osteoarthritis of the Knee ▪ Meniscal injuries ▪ Knee Ligament injuries ▪ Rotator cuff tears ▪ Biceps tendon lesions ▪ Shoulder instability ▪ Frozen shoulder ▪ Femro-acetabular impingement syndrome	Didactic; Lectures Clinical rounds Seminars Clinical rotations (service teaching	Written Exam Oral exam
B. Mention the principles of: ▪ Anatomic structure of knee and shoulders ▪ Biomechanics of knee and shoulders		
C. State update and evidence based Knowledge of ▪ Osteoarthritis of the Knee ▪ Meniscal injuries ▪ Knee Ligament injuries ▪ Knee deformities		
D. Memorize the facts and principles of the relevant basic and clinically supportive sciences related to Sport Medicine and Arthroscopy.		
E. Mention the basic ethical and medicolegal		

principles revenant to Sport Medicine and Arthroscopy		
F. Mention the basics of quality assurance to ensure good clinical care in Sport Medicine and Arthroscopy.		
G. Mention the ethical and scientific principles of medical research		
H. State the impact of common health problems in Sport Medicine and Arthroscopy 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 Sport Medicine and Arthroscopy	Clinical rounds Senior staff experience	Portfolios Procedure/case presentation Log book
B. Demonstrate an investigatory and analytic thinking (problem solving) approaches to common clinical situations related to Sport Medicine and Arthroscopy.		
C. Design and present cases , seminars in common problem		
D-Formulate management plans and alternative decisions in different situations in the field of the Sport Medicine and Arthroscopy.		

Practical skills (Patient Care)

ILOs	Methods of teaching/ learning	Methods of Evaluation
A. Obtain proper history and examine patients in caring and respectful behaviors.	Lectures Clinical rounds Seminars Clinical round with senior staff Observation Post graduate teaching Hands on workshops Case Presentation	Clinical Exam. Checklist Logbook and portfolio Procedure presentation
B. Order the following non invasive and invasive diagnostic procedures ▪ X RAYS for the mentioned Problems in A.A	Clinical round with senior staff Lectures, Courses Hand on workshops Perform under supervision of senior staff	Oral Exam Procedure presentation - Log book - Chick list
C. Interpret the following non invasive/invasive diagnostic procedures ▪ All necessary radiological investigations for the		

mentioned Problems in A.A e.g Xrays , CT, MRI . ▪ Diagnostic arthroscopy		
D. Perform the following non invasive/invasive therapeutic procedures Therapeutic arthroscopy under supervision	Assisting senior staff in operations	Oral Exam Procedure presentation - Log book - Chick list
E. Prescribe the following non invasive and invasive therapeutic procedures : -Therapeutic arthroscopy under supervision		
F. Carry out patient management plans for common conditions related to Sport Medicine and Arthroscopy.		
G. Use information technology to support patient care decisions and patient education in common clinical situations related to Sport Medicine and Arthroscopy.		
H. Provide health care services aimed at preventing health problems related to Sport Medicine and Arthroscopy like: ▪ Advanced arthritis through early minimally invasive interventions ▪ Postoperative stiffness and wasting around joints		
I.Provide patient-focused care in common conditions related to Sport Medicine and Arthroscopy, while working with health care professionals, including those from other disciplines like in: ▪ Postoperative rehabilitation		

C- 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)	Simulations Clinical round Seminars Lectures Case presentation Hand on workshops	Global rating Portfolios Procedure/case presentation Log book Chick list
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.	Simulations Clinical round Seminars Lectures Case presentation Hand on workshops	Global rating Log book Chick list
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 related to Sport Medicine and Arthroscopy.		
K. Write a report in: -Result of arthroscopy. -Patient surgical report -Discharge report		
L. Council patients and families about: -Sequelae of operative and non-operative manage-ment . -Explain perioperative process, likely outcome and time to recovery to patients, and check understanding. - Lifestyle modification.		

Professionalism

ILOs	Methods of teaching/ learning	Methods of Evaluation
M. Demonstrate respect, compassion, and integrity; a responsiveness to the needs of patients and society	Observation Senior staff experience Case taking	1. Objective structured clinical examination 2. Patient survey
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 Senior staff experience	-360o global rating -Log book Senior staff opinion
Q. Practice cost-effective health care and resource allocation that does not compromise quality of care.		1. Check list evaluation of live or recorded performance
R. Assist patients in dealing with system complexities.		1. 360o global rating 2. Patient survey

Unit (Module) 5 Arthroplasty

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: ▪ -Osteoarthritis and -degenerative diseases of the joints ▪ Femro-acetabular impingement syndrome ▪ Metabolic bone diseases ▪ Different forms of Arthritis	Didactic; Lectures Clinical rounds Seminars Clinical rotations (service teaching	Written Exam Oral exam
B-Mention the principles of: ▪ Anatomic details of: ▪ Hip , knee, shoulder and elbow joints ▪ Biomechanics of hip joint ▪ Biomechanics of knee ▪ Biomaterials		
C. State update and evidence based Knowledge of ▪ Osteoarthritis and -degenerative diseases of the joints		
D. Memorize the facts and principles of the relevant basic and clinically supportive sciences related to Arthroplasty.		
E. Mention the basic ethical and medicolegal principles revenant to Arthroplasty.		
F. Mention the basics of quality assurance to ensure good clinical care in Arthroplasty.		
G. Mention the ethical and scientific principles of medical research		
H. State the impact of common health problems in Arthroplasty 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 Arthroplasty.	Clinical rounds Senior staff experience	Portfolios Procedure/case presentation Log book
B. Demonstrate an investigatory and analytic thinking (problem solving) approaches to common clinical situations related to Arthroplasty		
C. Design and present cases , seminars in common problem		
D-Formulate management plans and alternative decisions in different situations in the field of Arthroplasty		

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.	Lectures Clinical rounds Seminars Clinical round with senior staff Observation Post graduate teaching Hands on workshops Case Presentation	Clinical Exam. Checklist Logbook and portfolio Procedure presentation
B. Order the following non invasive and invasive diagnostic procedures: ▪ All necessary radiological and hematological investigations for the mentioned Problems e.g X rays , CT, MRI ,	Clinical round with senior staff Lectures, Courses Hand on workshops Perform under supervision of senior staff	Oral Exam Procedure presentation - Log book - Chick list
C. Interpret the following non invasive and invasive diagnostic procedures ▪ All necessary radiological and hematological investigations mentioned above.		
D. Perform the following non invasive and invasive therapeutic procedures	Assisting senior staff in	Oral Exam Procedure

-Assist IN Surgeries of Joint Arthroplasty including: 1. Hemi-arthroplasty of the hip 2. Bipolar prosthesis 3. Total hip replacement 4. Total knee replacement 5. Revision hip Arthroplasty	operations	presentation - Log book - Chick list
E. Prescribe the non invasive and invasive therapeutic procedures as mentioned above in C.D		
F.Carry out patient management plans for common conditions related to Arthroplasty as Joint replacement in : Dysplastic hips Protrusio Rheumatoid hips Post acetabular and trochantric fractures Chronic renal failure Hemophilia and sickle cell anaemia Arthrodesed and ankylotic hips Infected hip replacement		
G. Use information technology to support patient care decisions and patient education in common clinical situations related to Arthroplasty		
H. Provide health care services aimed at preventing health problems related to Arthroplasty like: ▪ Dislocation and infection of replaced joints		
I.Provide patient-focused care in common conditions related to Arthroplasty , while working with health care professionals, including those from other disciplines like in: ▪ -Postoperative rehabilitation ▪ Management of any septic focus preoperatively		

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)	Simulations Clinical round Seminars Lectures Case presentation Hand on workshops	Global rating Portfolios Procedure/case presentation Log book Chick list
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.	Simulations Clinical round Seminars Lectures Case presentation Hand on workshops	Global rating Log book Chick list
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 related to Arthroplasty.		
K. Write a report : -Post operative report -Discharge report		
L. Council patients and families about: -Sequelae of operative and non-operative manage-ment . -Explain perioperative process, likely outcome and time to recovery to patients, and check understanding. - Lifestyle modification.		

Professionalism

ILOs	Methods of teaching/ learning	Methods of Evaluation
M. Demonstrate respect, compassion, and integrity; a responsiveness to the needs of patients and society	Observation Senior staff experience Case taking	1. Objective structured clinical examination 2. Patient survey
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 Senior staff experience	-360o global rating -Log book Senior staff opinion
Q. Practice cost-effective health care and resource allocation that does not compromise quality of care.		1. Check list evaluation of live or recorded performance
R. Assist patients in dealing with system complexities.		1. 360o global rating 2. Patient survey

Unit (Module) 6 Ortho Paediatrics and Deformities

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: **1.** Skeletal Deformities -congenital high scapula -congenital anomalies of the hand -congenital absent radius -congenital radioulnar synostosis -medlung's deformity -congenital dislocation of the hip -Congenital club foot -metatarsus adductus -Hallux valgus -congenital coxa vara -Congenital pseudoarthrosis tibia -congenital abscent tibia -congenital dislocation patella -Congenital vertical talus -klippel Feil syndrome -polydactly -congenital hyperlaxity syndromes -arthrogryposis Multiplex congenital **2.** Developmental disorder: -osteogenesis imperfecta -chondro-osteodystrophy -osteopetrosis -multiple exostosis	Didactic; Lectures Clinical rounds Seminars Clinical rotations (service teaching.	Written Exam Oral exam

-achondroplasia **3.** Leg Length Discripancy **4.** Malunion **5.** Nonunion		
B. Mention the principles of: ▪ Development of bone ▪ Normal gait ▪ Biomechanics of foot		
C. State update and evidence based Knowledge of - Congenital club foot Malunion Nonunion		
D. Memorize the facts and principles of the relevant basic and clinically supportive sciences related to Ortho Paediatrics and Deformities.		
E. Mention the basic ethical and medicolegal principles revenant to Ortho Paediatrics and Deformities.		
F. Mention the basics of quality assurance to ensure good clinical care in Ortho Paediatrics and Deformities.		
G. Mention the ethical and scientific principles of medical research		
H. State the impact of common health problems in Ortho Paediatrics and Deformities on the society.		

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 Ortho Paediatrics and Deformities.	Clinical rounds Senior staff experience	Portfolios Procedure/case presentation Log book
B. Demonstrate an investigatory and analytic thinking (problem solving) approaches to common clinical situations related to Ortho Paediatrics and Deformities.		
C. Design and present cases , seminars in common problem		
D-Formulate management plans and alternative decisions in different situations in the field of Ortho Paediatrics and Deformities.		

Practical skills (Patient Care)

ILOs	Methods of teaching/ learning	Methods of Evaluation
A. Obtain proper history and examine patients in caring and respectful behaviors.	Lectures Clinical rounds Seminars Clinical round with senior staff Observation Post graduate teaching Hands on workshops Case Presentation	Clinical Exam. Checklist Logbook and portfolio Procedure presentation
B. Order the following non invasive and invasive diagnostic procedures: ▪ All necessary radiological investigations for the mentioned Problems e.g X rays , CT, MRI ,		
C. Interpret the following non invasive and invasive diagnostic procedures ▪ All necessary radiological investigations mentioned above.		
D. Perform the following non invasive and invasive therapeutic procedures Correction of skeletal deformities	Assisting senior staff in operations	Oral Exam Procedure presentation - Log book - Chick list
E. Prescribe non invasive and invasive therapeutic	Lectures, Courses	Exam Procedure

procedures as mentioned in C.D	Assisting senior staff in operations	presentation - Log book - Chick list
F. Carry out patient management plans for common conditions related to Ortho Paediatrics and Deformities As in conditions mentioned in A.A.		
G. Use information technology to support patient care decisions and patient education in common clinical situations related to Ortho Paediatrics and Deformities.		
H. Provide health care services aimed at preventing health problems related to Ortho Paediatrics and Deformities like: ▪ Progression of deformities through early correction		
I.Provide patient-focused care in common conditions related to Ortho Paediatrics and Deformities , while working with health care professionals, including those from other disciplines like in: ▪ -Postoperative rehabilitation		

B- 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)	Simulations Clinical round Seminars Lectures Case presentation Hand on workshops	Global rating Portfolios Procedure/case presentation Log book Chick list
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.	Simulations Clinical round Seminars Lectures Case presentation Hand on workshops	Global rating Log book Chick list
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 related to Ortho Paediatrics and Deformities		
K. Write a report : -Post operative report -Discharge report		
L. Council patients and families about: -Sequelae of operative and non-operative manage-ment for the conditions mentioned above in A.A. - Congenital disorders		

Professionalism

ILOs	Methods of teaching/ learning	Methods of Evaluation
M. Demonstrate respect, compassion, and integrity; a responsiveness to the needs of patients and society	Observation Senior staff experience Case taking	1. Objective structured clinical examination 2. Patient survey
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 Senior staff experience	-360o global rating -Log book Senior staff opinion
Q. Practice cost-effective health care and resource allocation that does not compromise quality of care.		1. Check list evaluation of live or recorded performance
R. Assist patients in dealing with system complexities.		1. 360o global rating 2. Patient survey

Unit (Module) 7 Hand and microsurgery and oncology

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: 1. Tumors -Benign Bone Tumors -Malignant primary Bone Tumors -Secondary bone Tumors 2. Trauma -Brachial plexus injuries -Nerve injuries -Tendon injuries -Traumatic Amputation	Didactic; Lectures Clinical rounds Seminars Clinical rotations (service teaching.	Written Exam Oral exam
B. Mention the principles of: ▪ Vascular repair ▪ Coverage for Soft tissue defects and Flaps ▪ Anatomic details of The hand, the microvascular and neuro anatomy of the upper and lower limbs		
C. State update and evidence based Knowledge of ▪ -Trauma		
D. Memorize the facts and principles of the relevant basic and clinically supportive sciences related to Hand and microsurgery and oncology.		
E. Mention the basic ethical and medicolegal principles relevant to Hand and microsurgery and oncology.		
F. Mention the basics of quality assurance to ensure good clinical care in Hand and microsurgery and oncology.		
G. Mention the ethical and scientific principles of medical research		
H. State the impact of common health problems in Hand and microsurgery and oncology 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 Hand and microsurgery and oncology	Clinical rounds Senior staff experience	Portfolios Procedure/case presentation Log book
B. Demonstrate an investigatory and analytic thinking (problem solving) approaches to common clinical situations related to Hand and microsurgery and oncology		
C. Design and present cases , seminars in common problem		
D-Formulate management plans and alternative decisions in different situations in the field of Hand and microsurgery and oncology		

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.	Lectures Clinical rounds Seminars Clinical round with senior staff Observation Post graduate teaching Hands on workshops Case Presentation	Clinical Exam. Checklist Logbook and portfolio Procedure presentation
B. Order the following non invasive and invasive diagnostic procedures: All necessary radiological and hematological investigations for the mentioned Problems e.g X rays , CT, MRI , bone scan , biopsy		
C. Interpret the following non invasive and invasive diagnostic procedures ▪ All necessary radiological investigations mentioned above.		
D. Perform the following non invasive and invasive therapeutic procedures: <u>Assist in operative management:</u> 1. Take bone biopsies 2. Limb salvage resection 3. Vascularized fibular grafting	Assisting senior staff in operations	Oral Exam Procedure presentation - Log book - Chick list

4. Re-implantation 5. Soft tissue coverage		
E. Prescribe non invasive and invasive therapeutic procedures as mentioned above in C.D	Lectures, Courses Assisting senior staff in operations	Exam Procedure presentation - Log book - Chick list
F. Carry out patient management plans for common conditions related to Hand and microsurgery and oncology As in conditions mentioned in A.A.		
G. Use information technology to support patient care decisions and patient education in common clinical situations related to Hand and microsurgery and oncology		
H. Provide health care services aimed at preventing health problems related to Hand and microsurgery and oncology.		
I. Provide patient-focused care in common conditions related to Hand and microsurgery and oncology. , while working with health care professionals, including those from other disciplines like in: ▪ Postoperative rehabilitation ▪ Pre and postoperative radio and chemotherapy		

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)	Simulations Clinical round Seminars Lectures Case presentation Hand on workshops	Global rating Portfolios Procedure/case presentation Log book Chick list
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.	Simulations Clinical round Seminars Lectures Case presentation Hand on workshops	Global rating Log book Chick list
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 related to Hand and microsurgery and oncology.		
K. Write a report : -Discharge 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	Observation Senior staff experience Case taking	1. Objective structured clinical examination 2. Patient survey
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 Senior staff experience	-360o global rating -Log book Senior staff opinion
Q. Practice cost-effective health care and resource allocation that does not compromise quality of care.		1. Check list evaluation of live or recorded performance

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

Time Schedule: First Part/ Second part

Topic	Covered ILOs			
	Knowledge A	Intellectual B	Practical skill C	General Skills D
Unit 1 Trauma				
Principles of Soft tissue coverage for Open Fractures and wound Defects	**A, D-H**	**A-D**	**A-F**	**A-R**
Principles of Vascular repair and Reconstruction	**A, D-H**	**A-D**	**A-F**	**A-R**
Full Knowledge of ATLS Protocols	**A, D-H**	**A-D**	**A-F**	**A-R**
Biomechanics of fractures and fixation	**A,C, D-H**	**C**	**B,D**	**B,E**
Classification of fractures and soft tissue injuries	**A,C, D-H**	**C**	**A-F**	**A-R**
Principles of non operative fracture treatment	**A,C, D-H**	**A-D**	**A-F**	**A-R**
Principles of internal fixation	**A,C, D-H**	**A-D**	**A-F**	**A-R**
Principles of external fixation	**A,C, D-H**	**A-D**	**A-F**	**A-R**
Mechanism of bone and soft tissue healing	**A, D-H**	**C**	**A-F**	**A-R**
Principles and indications for amputations	**A, D-H**	**A-D**	**A-F**	**A-R**
Complications of fractures	**A, D-H**	**A-D**	**A-F**	**A-R**
Causes of pathological fractures	**A**	**A-D**	**A-F**	**A-R**
Periprothetic fractures	**A**	**A-D**	**A-F**	**A-R**
Anatomy of the Spine Lower and Upper limbs, Pelvis and Acetabulum	**B**	**A**	-	-

Physiology of Polytrauma, Hemorrhage and Shock, Fluid and Electrolyte imbalance and Metabolic Response to trauma	**B**	**A**	**-**	**-**
Unit 2 GENERAL ORTHOPEDIC				
Rheumatological Disease	**A,D-H**	**A-D**	**A-J**	**A-R**
Bone and soft tissue infections: Common Ortho Organisms	**A,C, D-H**	**A-D**	**A-J**	**A-R**
Bone, tendon, Cartilage, Muscle Structure	**B, D-H**	**A-D**	**A-J**	**A-R**
Bone healing and musculoskeletal tissue repair	**B**	**A-D**	**A-J**	**A-R**
Biomechanics and Principles of	**B**	**C**	**G**	**B,E**
Deformity Correction	**B, D-H**	**A-D**	**A-J**	**A-R**
Bone Atrophy disease	**B,C**	**A-D**	**A-J**	**A-R**
Unit 3 Spine				
- Rheumatoid arthritis of the spine	**A,C-H**	**A-D**	**A-G,I**	**A-R**
- Torticollis	**A,C-H**	**A-D**	**A-G**	**A-R**
- Tumors of the spine	**A,C-H**	**A-D**	**A-H**	**A-R**
- Lumbar disc diseases	**A,C-H**	**A-D**	**A-G**	**A-R**
- Lumbar canal stenosis	**A,D-H**	**A-D**	**A-G**	**A-R**
- Spinal infections specially Pott's disease	**A,D-H**	**A-D**	**A-G**	**A-R**
- Ankylosing spondylitis	**A,D-H**	**A-D**	**A-G**	**A-R**
- Kyphosis	**A,D-H**	**A-D**	**A-G**	**A-R**
- Scoliosis	**A,D-H**	**A-D**	**A-G**	**A-R**
Anatomy and development of spine	**B,D-H**	**A-D**	**-**	**A-G,M-R**
Surgical approach of different region of spine	**B,D-H**	**A-D**	**-**	**A-R**

- Degenerative cervical spine disorders & CDP	**B,D-H**	**A-D**	**A-G,I**	**A-R**
Spondylolisthesis	**B,D-H**	**A-D**	**A-G,I**	**A-R**
Analgesic drugs	**B,D-H**	**A-D**	**F**	**A,B**
Drug treatment of metabolic bone diseases	**B,D-H**	**A-D**	**F**	**A,B**
Antibiotics	**B,D-H**		**F**	**A,B**
Unit 4 Sport Medicine and Arthroscopy				
▪ Congenital discoid meniscus	**A,D-H**	**A-D**	**A,C-I**	**A-R**
▪ Chondromalacia patellae	**A,D-H**	**A-D**	**A-I**	**A-R**
▪ Osteochondritis dissecans	**A,D-H**	**A-D**	**A-I**	**A-R**
▪ Osgood-shlatter disease	**A,D-H**	**A-D**	**A,B-G,I**	**A-R**
▪ Knee deformities	**A,C,D-H**	**A-D**	**A-I**	**A-R**
▪ Osteoarthritis of the Knee	**A,C,D-H**	**A-D**	**A-I**	**A-R**
▪ Meniscal injuries	**A,C,D-H**	**A-D**	**A,C-I**	**A-R**
▪ Knee Ligament injuries	**A,C,D-H**	**A-D**	**A-I**	**A-R**
▪ Rotator cuff tears	**A,D-H**	**A-D**	**A-I**	**A-R**
▪ Biceps tendon lesions	**A,D-H**	**A-D**	**A,C-G,I**	**A-R**
▪ Shoulder instability	**A,D-H**	**A-D**	**A-I**	**A-R**
▪ Frozen shoulder	**A,D-H**	**A-D**	**A,C-G,I**	**A-R**
▪ Femro-acetabular impingement syndrome	**A,D-H**	**A-D**	**A-I**	**A-R**
▪ Anatomic structure of knee and shoulders	**B,D-H**	**A,C**	**-**	**B,E**
▪ Biomechanics of knee and shoulders	**B,D-H**	**A,C**	**-**	**B,E**
Unit 5 Arthroplasty				
▪ Osteoarthritis and - degenerative diseases of the joints	**A,C-H**	**A-D**	**A-I**	**A-R**
▪ Femro-acetabular impingement syndrome	**A,D-H**	**A-D**	**A-C,E,G-I**	**A-R**

▪ Metabolic bone diseases	**A,D-H**	**A-D**	**A-I**	**A-R**
Different forms of Arthritis	**A,C-H**	**A-D**	**A-I**	**A-R**
▪ Anatomic details of:				
▪ Hip , knee, shoulder and elbow joints	**B,D-G**	**A-D**	**-**	**B-E**
▪ Biomechanics of hip joint	**B,D-G**	**A-D**	**-**	**B-E**
▪ Biomechanics of knee	**B,D-G**	**A-D**	**-**	**B-E**
▪ Biomaterials	**B,D-G**	**A-D**	**G**	**B-E**
Unit 6				
1-Skeletal Deformities				
-congenital high scapula	**A,D-H**	**A-D**	**A-I**	**B-E**
-congenital anomalies of the hand	**A,D-H**	**A-D**	**A-I**	**B-E**
-congenital absent radius	**A,D-H**	**A-D**	**A-I**	**B-E**
-congenital radioulnar synostosis	**A,D-H**	**A-D**	**A-I**	**B-E**
-medlung's deformity	**A,D-H**	**A-D**	**A-I**	**B-E**
-congenital dislocation of the hip	**A,D-H**	**A-D**	**A-I**	**B-E**
-Congenital club foot	**A,C,D-H**	**A-D**	**A-I**	**B-E**
-metatarsus adductus	**A,D-H**	**A-D**	**A-I**	**B-E**
-Hallux valgus	**A,D-H**	**A-D**	**A-I**	**B-E**
-congenital coxa vara	**A,D-H**	**A-D**	**A-I**	**B-E**
-Congenital pseudoarthrosis tibia	**A,D-H**	**A-D**	**A-I**	**B-E**
-congenital abscent tibia	**A,D-H**	**A-D**	**A-I**	**B-E**
-congenital dislocation patella	**A,D-H**	**A-D**	**A-I**	**B-E**
-Congenital vertical talus	**A,D-H**	**A-D**	**A-I**	**B-E**
-klippel Feil syndrome	**A,D-H**	**A-D**	**A-I**	**B-E**
-polydactly	**A,D-H**	**A-D**	**A-I**	**B-E**
-congenital hyperlaxity syndromes	**A,D-H**	**A-D**	**A-I**	**B-E**

-arthrogryposis Multiplex congenital	**A,D-H**	**A-D**	**A-I**	**B-E**
2-Developmental disorder:	**A,D-H**	**A-D**	**A-I**	**B-E**
-osteogenesis imperfecta	**A,D-H**	**A-D**	**A-I**	**B-E**
-chondro-osteodystrophy	**A,D-H**	**A-D**	**A-I**	**B-E**
-osteopetrosis	**A,D-H**	**A-D**	**A-I**	**B-E**
-multiple exostosis	**A,D-H**	**A-D**	**A-I**	**B-E**
achondroplasia	**A,D-H**	**A-D**	**A-I**	**B-E**
3-Leg Length Discripancy	**A,D-H**	**A-D**	**A-I**	**B-E**
4-Malunion	**A,C,D-H**	**A-D**	**A-I**	**B-E**
5-Nonunion	**A,C,D-H**	**A-D**	**A-I**	**B-E**
▪ Development of bone	**B,D-H**	**A-D**	**A-I**	**B-E**
▪ Normal gait	**B,D-H**	**A-D**	**A-I**	**B-E**
Biomechanics of foot	**B,D-H**	**A-D**	**-**	**B-E**
Unit 7				
3. Tumors				
-Benign Bone Tumors	**A,D-H**	**A-D**	**A-I**	**A-R**
-Malignant primary Bone Tumors	**A,D-H**	**A-D**	**A-I**	**A-R**
-Secondary bone Tumors	**A,D-H**	**A-D**	**A-I**	**A-R**
4. Trauma				
-Brachial plexus injuries	**A,C-H**	**A-D**	**A-I**	**A-R**
Nerve injuries	**A,C-H**	**A-D**	**A-I**	**A-R**
-Tendon injuries	**A,C-H**	**A-D**	**A-I**	**A-R**
-Traumatic Amputation	**A,C-H**	**A-D**	**A-I**	**A-R**
▪ Vascular repair	**B,D-H**	**A-D**	**A-I**	**A-R**
▪ Coverage for Soft tissue defects and Flaps	**B,D-H**	**A-D**	**A-I**	**A-R**
▪ Anatomic details of The hand, the microvascular and neuro anatomy of the upper and lower limbs	**B,D-H**	**A-D**	**A-I**	**A-R**

5. Course Methods of teaching/learning:

1) Didactic ; Lectures
2) Clinical rounds
3) Seminars Clinical rotations
4) (service teaching) Observation
5) Post graduate teaching
6) Hand on workshops
7) Perform under supervision of senior staff
8) Simulations
9) Case presentation
10) Case Taking

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:

1. Clinical examination
2. Written and oral examination
3. Chick list
4. log book & portfolio
5. Procedure/case presentation
6. One MCQ examination in the second year and one in the third year
7. Objective structured clinical examination
8. Check list evaluation of live or recorded performance
9. Patient survey
10. 360o global rating

ii. Time schedule: At the end of second part

iii. Marks: 1200

8. List of references

i. Lectures notes

ii. Essential books

- Apley & Solomon's System of Orthopaedics and Trauma, 10 th edition , 2018

  Roger Dee Orthopaedics and Trauma

  McRai's Trauma

- Clinical Orthopaedic Examination 5th Edition By McRai's, 2004

iii. Recommended books

- Surgical Exposures in Orthopaedics: The Anatomic Approach (Hoppenfeld, Surgical Exposures in Orthopaedics) 4th Edition, 2009

iv. Periodicals, Web sites, … etc

- Wheeless Text of Orthopedics
- Orthopedics Hyperguide
- Orthoteers
- Online Journals
- Pubmed

9. Signatures

Course Coordinator:	**Head of the Department:**
Date:	**Date:**

ANNEX 2
Program Academic Reference Standards (ARS)

1- Graduate attributes for master degree in orthopedic surgery

***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* orthopedic surgery.

2- Appraise and utilise scientific knowledge to continuously update and improve clinical practice in orthopedic surgery.

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 orthopedic surgery.

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 orthopedic surgery.

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 orthopedic surgery.

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 orthopedic surgery 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 orthopedic surgery.

2-1-D- Ethical and medicolegal principles relevant to practice in orthopedic surgery.

2-1-E -Quality assurance principles related to the good medical practice in orthopedic surgery.

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 orthopedic surgery

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

2.2- C- Demonstrating systematic approach in studying clinical problems relevant to orthopedic surgery.

2-2-D- Making alternative decisions in different situations in orthopedic surgery.

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 orthopedic surgery for patients with common diseases and problems.

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

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 2, 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 العظام

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 orthopaedic surgery.	1- إجادة تطبيق أساسيات و منهجيات البحث العلمي و استخدام أدواته المختلفة
2- Appraise and utilise scientific knowledge to continuously update and improve clinical practice in orthopaedic surgery.	2-تطبيق المنهج التحليلي و استخدامه 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 orthopaedic surgery.	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 orthopaedic surgery.	5-تحديد المشكلات المهنية و إيجاد حلو لا 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 orthopaedic surgery.	6-إتقان نطاق مناسب من المهارات المهنية المتخصصة، و استخدام 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 orthopaedic surgery.	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 orthopaedic or one of its subspecialties. surgery	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 orthopedic surgery 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 orthopedic surgery.	2-1-ج-التطورات العلمية في مجال التخصص.
2.1. D- Ethical and medicolegal principles relevant to practice in the orthopedic surgery.	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 orthopedic surgery .	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 orthopedic surgery. 2.2. B- Problem solving skills based on data analysis and evaluation (even in the absence of some) for common clinical situations related to orthopedic surgery.	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 orthopedic surgery.	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 orthopedic surgery.	2-2-ج- الربط بين المعارف المختلفة لحل المشاكل المهنية
2.2. C- Demonstrating systematic approach in studying clinical problems relevant to the orthopedic surgery.	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 orthopedic surgery.	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 orthopaedic surgery 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 orthopedic surgery	2-3-ب- كتابة و تقييم التقارير المهنية
2.3.A- provide patient care that is	2-3-ج- تقييم الطرق و الأدوات القائمة في

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.	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 that investigation and evaluation involves 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, ,	2-4-د- استخدام المصادر المختلفة للحصول على المعلومات و المعارف

improvements in patient care and risk management.	
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 Orthopedic Surgery

(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, , Physiology, Microbiology , anatomy , histology , Pathology, pharmacology related to orthopedic surgery. **2-1-B-** Mention essential facts of clinically supportive sciences including Basics of general surgery and Anesthesia related to orthopedic surgery. **2-1-C-** Demonstrate sufficient knowledge of etiology, clinical picture, diagnosis, prevention and treatment of the common diseases and situations related to orthopedic surgery.
2-1-B The relation between good clinical care of common health problem in the orthopedic surgery and the welfare of society.	**2-1-H-** State the impact of common health problems in the field of orthopedic surgery 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 orthopedic surgery.	**2-1-C-** Demonstrate sufficient knowledge of etiology, clinical picture, diagnosis, prevention and treatment of the common diseases and situations related to orthopedic surgery. **2-1-D-** Give the recent and update developments in the pathogenesis, diagnosis, prevention and treatment of common diseases related to orthopedic surgery.

2-1-D- Ethical and medicolegal Principles relevant to practice in orthopedic surgery.	**2-1-E-** Mention the basic ethical and medicolegal principles that should be applied in practice and are relevant to the field of orthopedic surgery.
2-1-E-Quality assurance principles related to the good medical practice in orthopedic surgery field.	**2-1-F-** Mention the basics and standards of quality assurance to ensure good clinical practice in the field of orthopedic surgery.
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 orthopedic surgery.	***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 orthopedic surgery.
2-2-B-Problem solving skills based on data analysis and evaluation (even in the absence of some) for common clinical situations related to orthopedic surgery.	**2-2-B-** Demonstrate an investigatory and analytic thinking approach (problem solving) to common clinical situations related to orthopedic surgery.
2-2-C- Demonstrating systematic approach in studding clinical problems relevant to the orthopedic surgery.	**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 orthopedic surgery. field.
2-2-D Making alternative decisions in different situations in the field of orthopedic surgery.	**2-2-D-** Formulate management plans and alternative decisions in different situations in the field of orthopedic surgery.

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-B- Demonstrate patient care skills relevant to orthopedic surgery for patients with common diseases and problems.	**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 orthopedic surgery.
	2-3-1-C- Carry out patient management plans for common conditions related to orthopedic surgery
	2-3-1-D- Use information technology to support patient care decisions and patient education in common clinical situations related to orthopedic surgery.
	2-3-1-E- Perform competently noninvasive and invasive procedures considered essential for the orthopedic surgery.
	2-3-1-F- Provide health care services aimed at preventing health problems related to orthopedic surgery.
	2-3-1-G- Provide patient-focused care in common conditions related to orthopedic surgery, 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 orthopedic surgery.	**-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
Course 1 : Anatomy and Histology	✓							
Course 2 : Physiology and Microbiology	✓							
Course 3 : Pharmacology	✓							
Course 4 : Pathology	✓							
Course 5 General Surgery)	✓	✓	✓	✓	✓	✓	✓	✓
Course 6 Anesthesia	✓	✓	✓	✓	✓	✓	✓	✓
Course 7 : Orthopedic surgery	✓	✓	✓	✓	✓	✓	✓	✓

Intellectual

Course	Program covered ILOs			
	2/2/A	2/2/B	2/2/C	2/2/D
Course 1 : Anatomy and Histology	✓			
Course 2 : Physiology and Microbiology	✓	✓		
Course 3 : Pharmacology	✓			
Course 4 : Pathology	✓			
Course 5 General Surgery)	✓	✓	✓	✓
Course 6 Anesthesia	✓	✓	✓	✓
Course 7 : Orthopedic surgery	✓	✓	✓	✓

Practical Skills (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
Course 1 : Anatomy and Histology								
Course 2 : Physiology and Microbiology								
Course 3 : Pharmacology								
Course 4 : Pathology								
Course 5 General Surgery)	✓	✓	✓		✓			
Course 6 Anesthesia	✓	✓	✓		✓			
Course 7 : Orthopedic surgery	✓	✓	✓	✓	✓	✓	✓	✓

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
Course 1 : Anatomy and Histology				✓				✓
Course 2 : Physiology and Microbiology				✓				✓
Course 3 : Pharmacology				✓				✓
Course 4 : Pathology				✓				✓
Course 5 General Surgery)				✓			✓	
Course 6 Anesthesia				✓			✓	
Course 7 : Orthopedic surgery	✓	✓	✓	✓	✓	✓	✓	✓

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
Course 1 : Anatomy and Histology			✓		✓		
Course 2 : Physiology and Microbiology			✓		✓		
Course 3 : Pharmacology			✓		✓		
Course 4 : Pathology			✓		✓		
Course 5 General Surgery)		✓			✓		
Course 6 Anesthesia		✓			✓		
Course 7 : Orthopedic surgery	✓	✓	✓	✓	✓	✓	✓

Annex 7, Additional information:

Department information:

- Different units in the orthopedic department include:
  - Trauma reception for patient & CPR Unit.
  - Operative theater of the trauma unit working 24 hours.
  - The inpatient ward of the trauma unit besides a trauma ICU and intermediate care unit .
  - Outpatients clinic that receives 150 patients/day and working 6days /week. (new patients, follow up post discharge patients)
  - Orthopedic Department ward.
  - Orthopedic department operative theaters that have operating rooms working 6 days/week.
  - Micro surgery operative theater.
  - Septic Unit that have separate ward accommodates and separate operative theater.
  - Radiology section.
  - Scientific Library (Orthopedics Text Books and periodicals), MD, MSc thesis,
  - Seminar room with data show
  - Electronic Library of Scientific Seminars, case presentations.

Department quality control insurance for completing the program:

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

(End of the program specifications)