Template For Programme Specification of Master degree of Anaesthesia

University: AL-AZHAR **Faculty(s)**: MEDICINE.

Programme specification

A- Basic Information

1- Programme title: **Anaesthesia & Intensive care.**

2- Programme type: Single √ Double…… Multiple……..

3- Department (s): **Anaesthesia &. Intensive care.**

Coordinators: **Dr. *Eslah Elgendy & Dr. Nagia Abd Elmoti.*** ***Faculty of medicine For Girls***

Dr.Hassanin abdel karim Hamzawy. Dr. Mona Hanem AbdelGhaffar .

Dr.Ezz ELdeen Ismail Fikry ***Faculty of medicine For boys***

4- External evaluator(s)……

5- Last date of rarogramme specifications approval: ……

B- Professional Information

1- Programme aims:

The programme should provide:

- Basic facts, theories of the anaesthesia and related subjects.
- Rotations in surgical anaesthesia, critical care medicine and pain management. Experience in those rotations must emphasize the fundamental aspects of anaesthesia, preoperative evaluation, proper diagnosis and immediate postoperative care of surgical patients, assessment and treatment of critically ill patients and those with acute and chronic pain.
- Candidate should receive training in complex technology of physics, equipment principals & clinical measurements associated with these practices.

2- Intended learning outcomes (ILOs):

A- Knowledge and understanding:

By the end of the course the candidate should be able to:

A1- Describe the anatomy related to anaesthesia.

A2- Understand the applied physiology.

A3- Understand the pharmacology related to the practice of anaesthesia.

A4- Understand the medicine related to anaesthesia.

A5- Demonstrate a working knowledge of the physics and relevant clinical measurements for different monitoring devices and anaesthesia machine.

A6- Acquire the basic skills of scientific presentation and actively participate in regular departmental scientific meetings, and quality standards of the practice.

A7- Describe the scientific bases of all forms of anaesthesia, regional analgesia, critical care and pain management.

A8- Recognize the legal and medical aspect of anaesthesia.

B- Intellectual skills:

By end of the course the candidate should be able to:

B1- Interpret and emphasize basic concepts of rotation in anaesthesia of general surgery, plastic, pediatric, obstetrics and gynecology, neurosurgery, orthopedic, ENT, ophthalmic, vascular surgery, cardiothroax, intensive care & pain management.

B2- Integrate the results of clinical and investigatory findings to formulate anesthestic plan.

B3- Formulate the management strategy for critically ill patients.

B4- predicts complications of postoperative period and formulates management strategy.

B5- Conduct a scientific research.

B6- Take professional decisions in wide range of professional situations.

C- Professional and practical skills:

By end of Course the candidate should be able to:

C1- Acquire the skills of carful preoperative assessment, consultation for interpretation of clinical data, laboratory results and the investigations.

C2- Administer competently and safely the required types of anaesthesia in all age groups for both elective and emergency situations.

C3- Demonstrate clinical and technical competence in surgical intensive care & pain management unit.

C4- Apply the principals of sterile techniques & infection control guide line.

C5- Perform and teaching of cardiac and pulmonary resuscitation.

C6- Teach junior residents the basic skills of anaesthesia.

D- General and transferable skills

By end of the course the candidate should be able to:

D1- Communicate effectively with patients and their families.

D2- Respect patient will, privacy and dignity.

D3- Communicate effectively with other health care providers and work operatively in a team and work as a team leader.

D4- Practice self appraisal and determines his learning needs.

D5- Use different sources of information to obtain data and improve professional practice.

D6- Evaluate the information to solve problems.

D7- Evaluate risks imposed during anaesthesia practice and work within limits of knowledge and experience and learn independently.

D8- Write scientific articles according to the basics of scientific research.

3- Academic standards:

3a- External references for standards (Benchmarks)

……..

……..NABS……..

……..

3b- Comparison of provision to external references.

Domain	NAQAAE	Programme
Knowledge & Understanding	**Graduate must have sufficient knowledge and understanding of:** • Basic facts, theories of the specialty and related subject fields. • Mutual relation between professional practice and effects on environment. • Fundamental of ethical and legal practice. • Basics and ethical of scientific research.	**a1, a2, a3, a4, a5** **a7** **a4** **a8** **a6**
Intellectual skills	**Graduate must be able to do the following (related to the specialty):** • Interpret, analyze the information to solve the problems. • Solve the problems that do not confirm to classic data. • Integrate different information to solve professional problems. • Conduct a scientific research or write a scientific systemic approach to a research problem. • Evaluate risks imposed during professional practices. • Plan for professional improvement. • Take professional decisions in wide range of professional situations.	**b1, b2** **b2** **b2, b3** **b5** **b4** **b6** **b6**
Professional & Practical skills	• Competent in all basic and sum of the advanced professional skills (to be determined according to the specialty board department). • Write and appraise reports. • Evaluate methods and tools use in specialty**.**	**c1, c, c5** **c3** **c3, c4**

General & transferable skills	• Communicate effectively using all methods. • Use information technology to improve his/her professional practice. • Practice self appraisal and determines his learning needs. • Share in determination of standards for evaluation of others (e.g. subordinates trainees etc..). • Use different sources of information to obtain data evaluate the information to solve problems.	**d1** **d5** **d4** **d3** **d6**

4- Curriculum Structure and Contents:

4. a- **Programme duration:** two years.

4. b- **Programme structure:**

4. b. i- No. of hours per week: Lectures 29 hr. Lab. /Exercise 25 hr. Total: 54 hr.

4. b. ii- No. of credit hours: Compulsory Elective Optional

4. biii- No. of credit hours of basic sciences courses: No. %

4. b. iv- No. of credit hours of courses of social Sciences and humanities: No %

4. b. v- No. of credit hours of specialized courses: No %

4. b.vi- No. of credit hours of other courses: No %

4. b. vii- Practical/Field Training: ……

4. h. viii- Programme Levels (in credit-hours system):

5- Programme course:

5.1- Level/ year of programme: 1 Semester: 1 (First year).

a- Compulsory

Code No.	Course title	No of units	No. of hours/weak			Programme ILOs covered (by no.)
			Exer.	Lab.	Lect.	
	- **Physiology** - **Anatomy** - **Pharmacology** - **Medicine** - **Physics & measurements**		 4 4 		4 2 4 2 2	a2 a1 a3 a4 a5

b- Essay after first part:

Second part

Code No.	Course title	No of units	No. of hours/weak			Programme ILOs coverd (by no.)
			Exer.	Lab.	Lect.	
	- **Anesthesia** - **ICU & pain management**		**24** 9		**12+10** **6**	

6- Programme admission requirements:

يشترط فى قيد الطالب لدرجة الماجستير:

- **أن يكون حاصلا على درجة الإجازة العالية (البكالوريوس) من جامعة الأزهر أو من احدى جامعات جمهورية مصر العربيه أو على درجة معادلة من معهد علمى معترف به من الجامعة.**
- **أن لا يقل تقدير الطالب عن جيد فى الإجازة العالية (البكالوريوس) أو ان يكون حاصل على تقدير مقبول فى الاجازة العالية بشرط الحصول على دبلوم فى مجال التخصص بتقدير عام جيد على الأقل.**
- **أن يكون أمضى السنة التدريبية (الإمتياز).**
- **أن يتفرغ للدراسة لمدة سنة على الأقل مع مراعاة نظام الجامعة فى الدراسة والإمتحانات للمواد الإسلامية للدراسات العليا المقررة لغير خريجى جامعة الأزهر.**

7- Regulations for progression and programme completion:

يشترط للطالب للحصول على درجة الماجستير فى التخدير:

- **حضور المقررات الدراسية والتدريبات الإكلينيكية والعملية بصفة مرضية على ألا تقل نسبة الحضور عن 75%.**
- **أن يقوم بالعمل كطبيب مقيم أصلى أو زائر لمدة سنة على الأقل فى قسم التخصص.**

- ان يقوم بإعداد بحث يقره مجلس الجامعة بعد موافقة مجلس الكلية ينتهى بإعداده رسالة تقبلها لجنة الحكم قبل التقدم لإمتحان الجزء الثانى بشهر على الأقل.
- أن ينجح فى امتحان الجزئين الأول والثانى.

First year/ level/ semester:

الأختبارات:

1. اختبار تحريرى لمدة ثلاث ساعات فى التشريح والفسيولوجيا والفارماكولوجى + اختبار شفوى.
2. اختبار تحريرى لمدة ثلاث ساعات فى الامراض الباطنية + اختبار اكلينيكى + اختبار شفوى.
3. اختبار تحريرى لمة ثلاث ساعات فى مبادئ الفيزياء وطرق القياسات الإكلينيكية + اختبار شفوى.

Second year/ level/ semester:

الإختبارات:

1. اختباران تحريريان مدة كلا منهما ثلاث ساعات فى التخدير.
2. اختبار اكلينيكى ويشمل تقييم عمل الطالب اثناء دراسته العملية.
3. اختبار شفوى.

Evaluation of programme intended learning outcomes:

Evaluator	Tools	Sample
1- Senior student	Survey & questionnaire	50%
2- Alumni	Focus group	50%
3- Stakeholders (employers)	Round table discussion	50%
4- External evaluator(s) (external examiner(s))	Report	
5- Other		

FACULTY OF MEDICINE

MASTER IN ANESTHESIA AND INTENSIVE CARE

Program code: ATC 900

Course Specification

1- Course data:

- **Corse code:** ATC 900.
- **Course title:** anaesthesia and intensive care.
- **Academic year / Level:** Master Degree in anaesthesia & ICU. (Second part).
- **Specialization:** Anaesthesia & ICU.
- **No. of Instructional units**: Lecture: 370 hr Practical: 648 hr.

2- Course Aim:

By the end of the course the candidate will be able to:

- Achieve satisfactory levels of basic knowledge and clinical skills in all aspects of anesthesia and ICU practice.
- The program also aims to introduce the candidates to the basics of scientific research in the field of Anesthesia, intensive care unit and pain relief.
- Understand the basic facts, theories of the anaesthesia and related subjects.
- The candidate must emphasize the fundamental aspects of anasethesia, preoperative evaluation and immediate postoperative care of surgical patients, assessment and treatment of critically ill patients and those with acute and chronic pain.
- Describe the principles that govern taking decision for the suitable type of anesthesia for the patient.
- Demonstration of types, mechanism of actions, effect, clinical uses, complication and drug interaction of anesthetic drugs.
- Describe the threats to anesthesiologist, and common medical errors, which can occur during his practice with early, detection and management of any complication.
- Receive training in complex technology of physics, equipment principals & clinical measurement associated with these practices.

3- Intended learning outcomes of course (ILOs):

A- knowledge and Understanding:

By the end of the program the candidate should be able to:

A1- Recognize the detailed description of the structures of the different tissues, organs and systems of specific importance to the anesthetist as the anatomy of the airway and the spinal cord.

A2- Identify the surface landmarks of the great vessels suitable for vascular access as well as areas for regional nerve block.

A3- Distinguish between the normal and abnormal radiological features of the skull, chest and other body parts.

A4- Understand the physiological functions and mechanism of action of body systems.

A5- Understand the basic general pharmacodynamics and pharmacokinetics of drugs at all age groups.

A6- Describe the full details about the pharmacology of all anesthetic drugs including inhalational, intravenous, muscle relaxants and local anesthetics as well as sedatives and hypnotics.

A7- Identify the mechanism of action of different drugs taken by the patient and its interaction with the anesthetic drugs.

A8- Understand all medical emergencies that the anesthetist may be confronted with perioperatively or in the post operative ICU.

A9- Recognize the different physical laws and its application in anesthesia practice.

A10- Recognize different measuring systems and monitoring devices important for delivery of safe anesthesia.

A11- Recognize the full details about the anesthesia machines.

A12- Describe the scientific bases of all forms of anaesthesia, regional analgesia, critical care and pain management.

A13- Recognize how to score the traumatized patient and manage life threatening illness.

A14- Understand the analgesic ladder, methods to assess the degree of pain sensation and define the different methods for acute and chronic pain relief.

A15- Recognize the legal and medical aspect of anaesthesia.

A16- Acquire the basic skills of scientific presentation and actively participate in regular departmental scientific meetings.

B- Intellectual skills:

By the end the program the candidate should be able to:

B1- Identify the different anatomical surface markings related to anesthesia and the different areas relevant to venous or arterial access as well as chest tube insertion.

B2- Interpret the normal anatomical structures on radiographs, CT scans and magnetic resonance images.

B3- Select the proper technique of anesthesia (general, regional or local anesthesia) and identify its related complications.

B4- Integrate the results of clinical and investigatory findings to formulate anaesthesia plan.

B5- Define the indications, contraindications, dosage and complications of drugs used for premedication, anesthesia as well as analgesics and muscle relaxants.

B6- Formulate the management strategy for critically ill patient and different emergencies.

B7- Categorize patients according to different scoring systems (as Glasgow coma scale, ASA classification, trauma scale).

B8- Describe the required preoperative investigations according to the medical status and the surgical procedure.

B9- Predict complications of postoperative period and formulate management strategy.

B10- Define the appropriate method used for maintaining a patent airway (e.g. endotracheal, laryngeal mask airway, double lumen tube....etc).

B11- Determine causes of intra/postoperative complications and their management.

B12- Interpret readings of the standard monitors attached to the patient (Pulse oximetry, non- invasive blood pressure, heart rate and capnography) as well as additional monitors as central venous pressure monitoring.

B13- Define the pathophysiology and the management of different emergencies as shock, pulmonary embolism, arrhythmias etc.

B14- Conduct a scientific research.

C- Professional and Practical Skills:

By the end of the program the candidate should be able to:

C1- Acquire the skills of carful preoperative assessment, consultation for interpretation of clinical data, laboratory results and the investigations.

C2- Administer competently and safely the required types of anaesthesia in all age groups for both elective and emergency situations.

C3- Demonstrate clinical and technical competence in surgical intensive care & pain management unit.

C4- Fulfill the preoperative sheet, choose the proper anesthetic technique and obtain the patient's consent for the anesthesia.

C5- Establish vascular access and Perform proper and safe endotracheal intubation.

C6- Apply and maintain different modes of ventilation in the operating theatre and ICU.

C7- Perform the technique of spinal, caudal and epidural anesthesia properly as well as peripheral nerve blocks.

C8- Assess and manage post operative pain in different age groups by neural blockade by different methods.

C9- Apply the principal of sterile techniques and infection control guide lines.

C10- Perform and manage cardiac and respiratory arrest (basic and advanced life support).

C12- Assess and manage fluid balance, blood transfusion and nutritional support.

D- General and Transferable Skills:

By the end of the program the candidate should be able to:

D1- Communicate effectively with patients and their families.

D2- Respect patient will, privacy and dignity.

D3- Reassure the patients and explain their condition properly to alleviate their anxiety.

D4- Communicate effectively with other health care providers and work operatively in a team and work as a team leader.

D5- Practice self appraisal and determines his learning needs.

D6- Achieve computer skills necessary to make use of medical data bases and use the internet for communication.

D7- Evaluate the information to solve problems.

D8- Evaluate risks imposed during anaesthesia practice and work within limits of knowledge and experience and learn independently.

D9- Understand different scientific methodologies and have critical reading abilities.

D10- Write scientific articles according to the basics of scientific research.

4- Course content:

Topics	Lecture	Practical
Preoperative preparation & medications.	**2**	**6**
preoperative assessment	**2**	**4**
Airway management	**2**	**12**
Inhalational anesthetics	**4**	**2**
Monitoring	**2**	**10**
IV anesthetics	**2**	**2**
Anesthesia delivery system	**2**	**8**
Anesthesia machine	**4**	**4**
Muscle relaxants	**8**	**--**
Local anesthetics	**5**	**5**
Cholinesterase inhibitors	**2**	**--**
Autonomic nervous system drugs	**8**	**--**
Regional anesthesia and nerve blocks	**8**	**20**
Peri-operative fluid management and transfusion therapy	**12**	**12**
Post anesthesia care	**2**	**16**
Operating room management and environmental therapy	**1**	**4**
Anesthetic complication	**4**	**4**
Anesthetic implications of concurrent & uncommon disease	**2**	**--**
Outpatient anesthesia	**8**	**8**
Anesthesia at remote location	**8**	**8**
anesthesia for renal and genitourinary system	**2**	**4**
Anesthesia for liver and GIT	**4**	**10**
Anesthesia for ENT	**8**	**12**
Anesthesia for orthopedic and spine surgery	**4**	**12**
Anesthesia for ophthalmic surgery	**10**	**12**
Anesthesia for trauma and emergency conditions	**16**	**20**
Anesthesia for obstetrics and gynecology	**16**	**20**
Anesthesia for patient with respiratory disease	**12**	**20**

Anesthesia for endocrine diseases	**8**	**16**
Anesthesia for elderly	**4**	**10**
Acid base balance & electrolyte balance	**16**	**25**
Anesthesia for cardiovascular surgery	**5**	**10**
Anesthesia for patient with cardiovascular diseases	**18**	**28**
Anesthesia for patients with neuromuscular diseases	**8**	**12**
Anesthesia for neurologic and psychiatric diseases	**6**	**10**
Anesthesia for thoracic surgery	**10**	**20**
Anesthesia for vascular surgery	**8**	**10**
Anesthesia for neurosurgery	**12**	**24**
Pediatric anesthesia	**15**	**15**
Anesthesia for laparoscopic & Endoscopic operations	**8**	**18**
Anesthesia for obese patient	**5**	**12**
Bariatric operations	**5**	**10**
Assessment of pain	**4**	**18**
Acute (postoperative) pain	**4**	**16**
Management of chronic pain	**4**	**16**
Mechanical ventilation	**18**	**30**
Post operative intensive care	**4**	**15**
Management of burn patient	**4**	**20**
General intensive care	**16**	**20**
Ethical and legal aspect	**3**	**2**
CPR	**14**	**28**
TOTAL	**370**	**648**

Teaching and Learning Methods:

- Lectures and tutorials.
- Practical and clinical cases.
- Workshops and simulators.
- Case study.
- Seminars & group discussion

5- Student Assessment Methods:

A- Procedure used:

- Written exam to assess knowledge and intellectual skills.
- Oral exam to assess knowledge and intellectual skills.
- Final practical exam to assess intellectual and practical skills.
- Final clinical Exam to assess intellectual and practical skills.

B- Schedule:

- Final written Examination.
- Final oral Examination.
- Final clinical Examination.
- Final practical Exam.

C- Weighing of assessments:

- **Final written Exam:**	
• **first paper :**	**300 Marks**
• **second paper :**	**300 Marks**
- **Final oral Examination:**	**300 Marks**
- **Final clinical and practical examination:**	**500 Marks**
Total	**1400 Marks**

6- List of References:

A- Course Notes:

- Lecture.

B- Required text Books:

- Basics of Anesthesia: by Stoelting RK and Miller RD, 5th edition, Churcill Livingstone.
- Lee's Synopsis of Anesthesia by: Davies NJH, Cashman JN, 13th edition, Elsevier Butterworth Heinemann.

C- Recommended Books:

- Anesthesia by Miller RD 6th edition, Elsevier Churcill Livingstone, New York, 2005.
- Stoelting's Anesthesia and Co-existing disease, 5th edition, By: Hines RL, Marschall KE, 2008, Elsevier Churcill Livingstone.
- Paul L Marino: The ICU Book (3rd Edition, 2007).
- Basic physics & measurement in anesthesia.

D- periodicals Web Sites, ... etc:

- British Journal of Anaesthesia.
- ASA Refresher Course Lectures.
- Anesthesiology.
- Anesthesia Analgesia.
- Egyptian journal of anesthesia.
- www.anaesthesiauk.com/default.aspx.
- www.pharmacology2000.com/physics/Chemistry_Physics/physics1.htm
- www.freshgasflow.com/index.html.

Course Coordinator

1- Prof. Eslah Elgendy
2- Prof. Nagia Abd-Elmoeti

Head of the department
Prof. Mervat Saeed.

Date 20 / 4 / 2013

Master course matrix

Units	A															
	Knowledge and Understanding															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Anesthesia		*	*			*	*	*	*	*	*	*	*	*	*	
Physics& measurements									*	*	*					
Pharmacology					*	*	*							*		
Anatomy	*	*	*									*				
Physiology	*			*				*								
Medicine								*					*		*	
Essey																*

Units	B													
	Intellectual Skills													
	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Anesthesia		*	*			*	*	*	*	*	*	*	*	
Physics& measurements			*						*		*	*		
Pharmacology					*									
Anatomy	*	*	*							*	*			
Physiology				*		*	*	*					*	
Medicine		*		*		*	*	*	*				*	
Essey														*

Units	C											D									
	Professional and Practical skills											General transferable									
	1	2	3	4	5	6	7	8	9	10	11	1	2	3	4	5	6	7	8	9	10
Anesthesia	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
Physics					*			*													
Pharmacology			*					*													
Anatomy				*	*		*	*													
Physiology	*			*																	
Medicine	*	*	*	*		*		*		*	*						*	*	*	*	*
Essey																				*	*

Course Specification

1- Course data:

- **Corse code:** ATC 901.
- **Course title:** PHYSICS AND MEASURMENTS**.**
- **Academic year / Level:** Master Degree in anaesthesia & ICU (first part).
- **Specialization:** Anaesthesia & ICU.
- **No. of Instructional Units:** **Lecture:** 48 Hours **Practical: ……..**

2- Course Aim:

By the end of the course, the candidate should become fully acquainted with the physical principles related to anaesthesia, recognize how to deal with different equipments efficiently and safely and to perform and make how to use basic monitoring in OR. And ICU for the safe management of patient and use of various types of essential clinical measurements in order to avoid hazards that may affect patient safety.

3- Intended Learning Outcomes of Course (ILOs):

A- Knowledge and Understanding:

By the end of the course, the candidate should be able to:

A1- Understand basic physics for anasethesia.
A2- Recognize apparatus and safety features.
A3- Assess the safety measures that should be followed during practice.
A4- Identify the principles of different clinical measurements.

B- Intellectual Skills:

By the end of the course, the candidate should be able to:

B1- Analysis of the data obtained from monitors.
B2- Interpretation of values gained from different monitors.
B3- Detection of any anaesthetic system failure.

C- Professional skills:

By the end of the course the candidate should be able to:

C1- Evaluate anesthetic equipment status.
C2- Define the appropriate equipment.
C3- Use the measuring system for observing the patient.
C4- Perform blood gas analysis, CVP, PAWP insertion.
C5- Check proper performance of anesthetic machine and different equipments.
C6- Deal with alarming of anesthetic machine and different apparatus.

D- General skills:

By the end of the course the candidate should be able to:

D1- Communicate with each other and interact effectively with the patients using appropriate anesthetic sets, then write a report about the calibration, integrity of these sets and complications and discuss with staff members.

D2- Recognize and accept the limitation in their knowledge and clinical skills.

C3- Use computer data base and other computer skills**.**

C4- Work together to check anesthetic equipments integrity and discuss their point of view.

D5- Organize thinking and precision in talking decisions.

4- Course content:

Topics	No. of Hours	
	Lectures	Practical
SI units (basic – derived)	1	--
Gas diffusion & solubility of gas and liquids	2	
Behavior of gases & Gas laws	2	
Flow, Viscosity, Density, Surface tension, Osmosis	3	
Pressure gauges & pressure regulators	3	
Anesthetic breathing systems	2	
Safety measures in anesthetic machine	1	
Nuclear physics	2	
Ultrasound	2	
Electricity(principles, electronics, pace maker, defibrillator, electrocution)	2	
Heat & Temperature	2	
Humidity & Nebulizers	2	
Vaporizers	2	
Ventilators	2	
Respiratory functions	2	
Pollution in OR & Scavenging systems	2	
Fires & explosions	1	
Measurement of arterial blood pressure	1	
Measurement of CVP	1	
Measurement of pulmonary artery pressure	1	
Measurement of neuromuscular blockade	2	
Uptake & Distribution of inhalational anesthetics	1	
Measurement of humidity	1	
Measurement of CO2, capnography	1	
Measurement of O2, pulse oximeter	1	
Measurement of cardiac output	1	

Measurement of temperature	**1**	
Measurement of osmosis	**1**	
Flow meters	**1**	
Mass spectrometer	**1**	
Analysis of gas mixture	**1**	
TOTAL	**48**	

5- Teaching and learning method:

- **Lectures.**
- **Discussion sessions**
- **Practical**
- **Field study**

6- Student Assessment

a- Procedures used:

- Written exam: to assess knowledge and intellectual skills.
- Oral exam: to assess knowledge and intellectual skills.
- Practical exam: too assess practical and intellectual skills.

b- Schedule:

- Written exam to assess knowledge
- And intellectual skills.
- Oral exam assess knowledge and intellectual skills**.**
- Practical exam: too assess practical and intellectual skills.

c- Weighing of assessment:

- Final written exam 70 marks
- Final oral exam 70 marks

Total 140 marks

7- List of text books and References:

a- Course notes: -

- **Lectures**

b- Required text books:

- Basic Physics and Measurement in Anesthesia. By Kenny, Gavin, Davis, Paui D. Published by Butterworth- ileinemann Publishers, 5th-edition, 2003.
- Fundamental
- Principles and Practice of Anaesthesia by Peter Hutton, Griselda Cooper, Francis M James, John F. Butterworth IV. Published by Informal Health Care, 2002.
- Miller's Anesthesia
- By Ronald Miller. Published by Churchill Livingstone; 6th edition, 2004.

- Basic physics & measurement in anesthesia; Davis P.D., Parbrook G. D. and Kenny C.N., 4th edition, Bu erworth Heirmann, 1995.

c- **Recommended Books:**

- Understabding Anesthesia Equipment by Jerry A. Dorsch, Susan E. Dorsch. Published by Lippincott Williams & Wilkins, 5th edition, 2007.
- Physics Applied To Anaesthesia By D.W. HILL, London. Published by Butterworth. 3rd ed, 1976.

d- Periodicals, Web Sites:

- www.anaesthesiauk.com/default.aspx
  www.pharmacology2000.com/physics1Chemistry_Physics/physics'.htm
  www.freshgasflow.com/index.html

Course Coordinator
Pr-of:Eslah-Elgendy-
Prof. Nagia Abd-Elmoeti

Head of the department

Prof. Mervat Saeed

Date: 20 / 4 / 2013

Anatomy Course Specification

1- Course data:

- **Title:** Anatomy course for the Master Degree in Anesthesia & ICU.
- **Course Code:** Anat. 902.
- **Course Title:** Anatomy course for the Master Degree in Anesthesia & ICU.(first part).
- **Academic year/ level:** Master Degree in Anesthesia & ICU.
- **Specification:** Anesthesia & ICU.
- **No. of instructional units:** **Lecture: 48 Hours** **Practical: ------**

2- Course Aim:

By the end of the course, the candidate should be able to:

- Demonstration the knowledge principles in the field of Anatomy.
- Demonstrate an understanding of the principles in the field of Anatomy and how to practice in anesthesia.
- Describe the principles that govern taking decision for the suitable type of anesthesia for the patient according anatomy.
- Demonstration of relation between understanding the anatomy and explanation for effect of anesthetic e.g. spinal, epidural, local anesthesia and pain management.
- Describe the threats to anesthetist, which can occur during this practice, if the patient with abnormal anatomical feature.

3- Intended learning outcomes of the course (ILOs) :

A- Knowledge e and understanding:

By the end of the program the candidate should be able to:

A1- Describe the detailed anatomy of cranial nerves, spinal nerves, plexuses, autonomic nerves and gangilea.

A2- Demonstrate the anatomy of relevant structures (respiratory airways, the heart, the vertebral canal, thoracic inlet, diaphragm, intercostals spaces, abdominal wall, cubital fossa and great veins of the neck).

A3- List the, content of vertebral canal and branches of common nerves and plexus.

A4- Predict the possible deformity that may result from injury to a given nerves.

A5- Mention and explain the peripheral nerves; spinal nerves, cervical plexus, brachial plexus, thoracic nerves, lumber plexus, define the formation, branches, surface marking of each plexus.

A6- Illustrate pain pathways.

A7- Demonstrate zone of Interest; Thoracic Inlet, diaphragm, intercostal Spaces, abdominal wall, ante-cubital fossa, great vessels of neck.

A8- Recognize different land marks needed by anesthetist for regional blocks and other Intervention.

B- Intellectual skills:

By the end of the course the candidate should be able to

B1- Correlate between the medical condition of the patient and the surgery that will be operated and think about the Anesthetic plan.

B2- Interpret the advantages and disadvantages of different types of anesthesia.

B3- Analyze anatomical data to prepare patient for different interventions.

B4- Identify and solve problems related to interventions such as nerve blocks (e.g., anatomical structures that may be encountered in various approaches used in anesthesia).

B5- Correlate the facts of anatomy with clinical reasoning diagnosis and management of common diseases related to anaesthesia and ICU.

C- Professional skills:

By the end of the course, the candidate should be able to:

C1- Define the appropriate anatomy for the patient.

C2- Insertion of IV, arterial line and CVP efficiently.

C3- Perform Regional anesthesia (e.g. Spinal, Epidural, Local intravenous anesthesia peripheral nerve blocks).

C4- Identify any relevant structures (e.g. nerves) in a diagram, photograph of a dissected region, a plastic model, a dissected specimen or museum jar.

C5- Identify any relevant structure in a normal X- Ray, CT image.

C6- Use information technology to support decision in common situations related to anatomy of upper respiratory tract, chest, great vessels and nerves.

D- General skills:

By the end of the course the candidate should able to:

D1- Communicate with each other and interact effectively with patient prepared for surgery for proper anatomic evaluation.

D2- Evaluate the patient prepared for regional anesthesia, patient with difficult intubation in accordance with scientific guidelines.

D3- Use computer data base and other computer skills.

D4- Communicate with anatomy department and work as a team.

D5- Do literature search on the internet.

4- Course content:

	Topics	Hours
1	The respiratory pathway (nose, mouth, pharynx, larynx, ……)	3
2	Pharynx, nasopharynx and the muscle of the pharynx.	3
3	The heart & Lung	4
4	The vertebral canal & its content and vertebral column	4
5	The spinal cord & spinal canal	3
6	The cervical plexus and brachial plexus	2
7	The thoracic nerves , Lumbar plexus & Sacral plexus	3
8	The autonomic nervous system	5
9	The cranial nerves	4
10	The anatomy of pain pathway	3
11	The thoracic inlet, intercostals spaces & diaphragm	4
12	The cubital fossa	1
13	The great veins of the neck	3
14	The abdominal wall	1
15	Muscles of the back	1
16	Main nerves of the upper & lower limbs	4
	Total	48

5- Teaching and Learning methods:

a- Lectures.

b- Book of Professor Dr. Hassan Nasshet in different parts of anatomy.

6- Assessment methods:

- **Written exam: 30 Marks**
- **Oral exam: 30 Marks**

Total 60 Marks

7- List of text book and references:

- Gray Anatomy, the Anatomical basis of Clinical Practice by Susan Standring; 19th edition, 2005, Elsevier Inc.
- Gray Anatomy for students by Drake Vogel & Mitchell; 1st edition, 2004, Churchill Livingstone.

Course coordinator:

1- Prof. Eslah Elgendy

2- Prof. Nagia Abd Elmoetie.

Heed of the department

Prof. Mervat Saeed.

Date: 20 / 4 / 2013.

Pharmacology Course Specification

1- Course Data:

- **Course Code**: Phar. 903.
- **Course Title**: Pharmacology.
- **Academic year/ Level**: Master degree in Anesthesia & ICU, (first part).
- **Specialization**: Anesthesia & ICU.
- **Lecture:** 96 Hours.
- **Practical**: 96 Hour.

2- Course Aim:

By the end of the course the candidate will be able to:

- Demonstration of knowledge of pharmacokinetics & dynamics.
- Demonstrate and understanding of the principles and practice of pharmacology.
- Describe the principles that govern taking decision for the suitable types of drugs for the patient.
- Identify the mechanism of actions, effect, clinical uses, complication, side effects and drug interaction of drugs frequently used in anaesthesia.

3- Intended Learning Outcomes (IL0s):

A- Knowledge and understanding:

By the end of the course the candidate will be able to:

A1- Describe principles of pharmacokinetics & dynamics of drugs, mechanism of actions, effect, clinical uses, complication, side effects and drug interaction of drugs.

A2- Demonstrate how to evaluate the suitable type of drugs for the patients and describe the principles of action.

A3- Define the pharmacodynamics; mechanism of action, Drug receptor interaction, adverse drug reaction, factors modifying drug action.

A4- Explain the pharmacokinetics: the drug absorption, distribution, biotransformation or metabolism, clearance, drug interaction.

A5- Predict interaction between anaesthetics and different pharmacotherapies.

B- Intellectual skills:

By the end of the course the candidate will be able to:

B1- Correlate between the medical condition of the patient and the drug that will be used for treatment.

B2- Integrate the effect of drug on the patient.

B3- Interpret the advantages and disadvantages of different types of drug therapy.

B4- Calculate the appropriate dosing of drugs according to the different characteristics of patients.

B5- Identify the different agent used in general and local anaesthesia.

B6- Correlate the facts of pharmacology with clinical reasoning diagnosis and management of common diseases related to anaesthesia and ICU.

C- Professional skills:

By the end of the course the candidate will be able to:

C1- Report the different drug adverse reactions and toxicities.

C2- Apply the basic principles of the management of different adverse drug reactions and toxicities.

C3- Prescribe the different pharmacotherapies in endocrinal emergencies & shock.

C4- Avoid or manage drug interactions and adverse effects during anesthesia.

C5- Perform management using the adjusted doses efficiently.

C6- Prescribe the different pharmacotherapies of basic & advanced life support.

D- General skills:

By the end of the course the candidate will be able to:

D1- Communicate effectively with other health care professionals to maximize patient benefits and minimize the risk of errors.

D2- Practice self appraisal and determined his learning needs.

D3- Use different sources of information to obtain data.

D4- Work together to correlate suitable treatment of patient and discuss their point of view for treatment.

4- Course content

Topics	No of hours	
	Lecture	Practical
Introduction Pharmacokinetics & pharmacodynamics	**2**	**2**
Autonomic nervous system	**5**	**5**
IV induction anaesthesia inhalational anaesthatics	**5**	**5**
Neuromuscular blocking drugs	**4**	**4**

Antcholinesterases	**2**	**2**
Local anesthetics	**4**	**4**
Drug dosage in the ICU	**4**	**4**
Common drug toxicities and management	**3**	**3**
Basic principle of clinical pharmacology	**2**	**2**
Electrolytes and acid base balance	**6**	**6**
Endocrinal emergencies	**4**	**4**
Drug therapy of heart failure	**5**	**5**
Drug therapy of ischemic heart diseases	**5**	**5**
Drug therapy of dysrhythmias	**5**	**5**
Drug therapy of hypertension	**5**	**5**
CNS pharmacology: - **Sedative & Hypnotics** - **Anxiolytics** - **Narcotic analgesics** - **Non narcotic analgesics** - **anticonvulsants** - **anti parkinsonism** - **antipsychotics** - **CNS stimulant**	**10**	**10**
Diuretics	**2**	**2**
Drug therapy of shock	**3**	**3**
Drug therapy of diabetes mellitus	**2**	**2**
Drug therapy of bronchial asthma	**2**	**2**
Drug therapy of endocrine diseases	**2**	**2**
Antiemetic drugs	**1**	**1**

Proton pump inhibitors	**1**	**1**
Drug interaction	**6**	**6**
Drugs used in ICU	**6**	**6**
TOTAL	**96**	**96**

5- Teaching and learning Methods:

- **Lectures**

6- Student Assessment

a- Procedures used:

- Written exam to assess knowledge and intellectual skills.
- Oral exam assess knowledge and intellectual skills.

b- Schedule:

- Written exam to assess knowledge and intellectual skills.
- Oral exam assess knowledge and intellectual skills**.**

c- Weighing of assessment:

- Final written exam 70 marks
- Final oral exam 70 marks

Total 140 marks

7- List of text books and References:

a- Course Notes:

- **Lecture Notes by professors of Pharmacology department.**

b- Required Books:

- Goodman and Gilman's Manual of Pharmacology and Therapeutics. Ed. Laurence L. Brunton; Keith L. Parker; irrac Gravy- Hill, 2008.
- Basic and Clinical Pharmacology 10th Edition. Ed:Bertram G. Katzung; Appleton & Lange , 2007.
- Principles of Pharmacology. The patophysiologic basis of drug therapy. Eds. Golan et al. 2nd edition. 2008. Lippincott.

c- Periodicals

- British J. of pharmacology.
- American J. of pharmacology
- Lancet J.
- JAMA J. –
- Web Sites: Pubmed: http**://**wwwmcbLnimmih.gov/PubMed.....etc

Course Coordinator

1- Prof. Eslah ElgendY
2- Prof. Nagia Abd-Elmoeti

Head of the department
Prof. Mervat Saeed

Date: 20 / 4 /2013

Physiology Course Specification

1- Course Data:

- **Course Code:** Phys. 904.
- **Course Title:** Medical physiology.
- **Academic year/ Level:** Master degree in anesthesia and ICU. (First year).
- **Specialization:** Anesthesia and ICU.
- **Lecture:** 96 Hours. **Practical:** ……

2- Course Aim:

By the end of this course the candidate should be able to:

- Oriented with the physiology of CNS & circulation especially that concerned with Pain & analgesic management & altered physiologic function.
- Regulation of arterial blood presser, the different types of shock and their management.
- Have enough Knowledge about control of respiration and acid base balance.
- Have adequate information about the nerve conduction and muscle contraction.

3- Intended Learning Outcomes (ILOs):

A- Knowledge and Understanding:

By the end of the course the candidate should be able to:

A1- Recognize and understand the function of different body systems and understand mechanisms involved in its regulation.

A2- Identify how these functions are altered in different diseases.

A3- Describe the physiology of important phenomena in the body that concerned with anesthesia practice as coagulation, pain control of arterial blood pressure and changes in hemorrhage & shock.

A4- Identity physiological conditions and describes their nature.

B- Intellectual Skills:

By the end of the course the candidate should be able to:

B1- Analyze the given information.

B2- Think and expect the outcome of disturbed function.

B3- Evaluate normal physiological principles with the mechanisms and pathogenesis of the disease.

B4- Assess of the hemodynamic stability of the patient intra operatively.

B5- Describe the physiology of respiration especially acid base balance, hypoxia and cyanosis.

C- Professional Skills:

By the end of the course, the candidate should be able to:

C1- Apply of professional skills in the field of anaesthesia and ICU.

C2- Write medical report.

D- General Skills:

By the end of the course, the candidate should be able to:

D1- Communicate with members of physiology department and other departments.

D2- Appreciate and apply physiological skills in intra operative patient.

4- Course Content

	Topics	Hours
1	**Respiratory physiology:** - Mechanism of breathing & pulmonary function tests. - Gas transport between lung & tissues. - Regulation of respiration. - Hypoxia, cyanosis, periodic, breathing & dyspnea	**10**
2	**Cardiovascular physiology:** - Cardiac output & its regulation - Arterial blood pressure & its regulation - Special circulation (cerebral, coronary, pulmonary and capillary) - Hemorrhage and shock	**10**
3	**Blood& blood coagulation**	**8**
4	**Renal physiology and Acid base balance.**	**10**
5	**Autonomic nervous system and adrenal medulla**	**8**
6	**Nerve impulse and Neuromuscular physiology:** - Membrane potentials & excitability changes - Conduction of action potential - Neuromuscular transmission - Effect of skeletal muscle denervation	**10**
7	**Liver function and GIT**	**1**
8	**Deglutition and vomiting**	**1**
9	**Endocrine and metabolism**	**5**
10	**Thermoregulation**	**5**
11	**Body fluid compartment**	**4**
12	**Physiological changes associated with pregnancy. pediatric & elderly patients**	**6**
13	**Physiology of Pain and analgesic system**	**6**

14	**Cerebral physiology:** - Chemical transmission - Pain sensation - Muscle tone - Sleep & Electrical activity of the brain	**12**
	Total	**96**

5- Teaching and learning methods:

- Lectures
- Human physiology for medical students. Dr. Magdy Sabry.

6- Student Assessment:

- **Written exam:** to assess knowledge and intellectual skills.
- **Oral exam:** to assess knowledge and intellectual skills.

Assessment Schedule:

Final written Exam Final Oral Examination:

Final written exam	60	Mark
Final oral exam	60	Mark
Total	120	Mark

7- List of references:

a- Course Notes specific for each lecturer.

b- Essential Books (Text Books):

- Review of medical physiology By: William F. Ganong.
- Text Book of medical physiology By: Guyton.
- Physiology from cell to system by L. Sherwood**.**

c- Periodicals:

- American journal of physiology
- Journal of applied physiology

Course Coordinator

1- Prof. Eslah Elgendy — **Head of the department**

2- Prof. Nagia Abd-Elmoeti — **Prof. Mervat Saeed**

Date: 20 / 4 / 2013

Internal Medicine Course Specification

1- Course Data

- **Course Code:** Med. 905**.**
- **Course Title:** Internal medicine Course for the Master degree in Anesthesia & ICU. (First part).
- **Academic year level:** Master degree in Anesthesia & ICU.
- **Specification:** Anesthesia & ICU**.**
- **No. of instructional units:** **Lecture:** 43 Hours **Practical:** 96 Hours

2- Course Aim

By the end of the course, the candidate should be able to:

- Understand the scientific principles underlying health and disease.
- Provide an appropriate background covering the common and important emergencies and diseases.
- Prepare candidate for independent and lifelong learning by encouraging self-directed study.
- Enable the development and application of appropriate professional attitudes, communication and problem solving skills.

3- Intended Learning Outcomes (IL0s):

A- Knowledge and understanding:

By the end of the course, the candidate will be able to:

A1- Describe the etiology and mechanisms of disease.

A2- Recognize causes of disease and the associated risk factors and disease prevention.

A3- Describe the clinical symptoms and signs of the common and most important diseases.

A4- Define problems and reach a differential diagnosis.

A5- Describe all forms of appropriate therapy for a given diagnosis (drug therapy and non-pharmacological treatments).

A6- Demonstrate an understanding of mode of action of frequently prescribed drug and their known side effects.

A7- Report the psychological consequences of illness for the patient, family and society.

B- Intellectual skills:

By the end of the course the candidate will be able to:

B1- Interpret the most important symptoms and signs of disease.

B2- Select appropriate investigations and interpret the results.

B3- Formulate appropriate management plan for individual patients presenting with the most common diseases.

B4- Make decisions regarding the common clinical situations using appropriate problem solving skills.

B5- Communicate effectively with patients and their family.

C- Professional skills:

By the end of the course the candidate will be able to:

C1- Construct a proper history for the patient.

C2- Perform an adequate clinical examination for the patient and identify any abnormalities.

C3- Interpret the patient data (history and examination) in an organized and informative manner.

C4- Perform clinical procedures.

C5- Recognize and carry out the treatment of the emergency situations.

D- General and transferable skills:

By the end of the course the candidate will be able to:

D1- Have the ability to explore both disease and illness with patients, and meet their communication needs and those of their relatives through the acquisition of effective Comprehensive Clinical Method.

D2- Work within the organizational, interpersonal and inter professional dynamics of the clinical team.

D3- Make judgment about their strengths and take responsibility for continuing learning, personal support and professional development.

4- Course content:

Topics	No. of hours	
	Lecture	**Practical**
CVS:		
- Coronary artery disease.	**2**	**4**
- Congestive heart failure.	**2**	**4**
- Infective endocarditis.	**2**	**4**
- Cardoimyopathies.	**2**	**4**
- Hypertension.	**2**	**--**
- Arrhythmias & dysrhythmias.	**2**	**3**
- Dyslipidemia.	**1**	**--**
- Rheumatic heart disease &Rheumatic activity	**--**	**2**
Respiratory system:		
- Asthma & COPD.	**2**	**4**
- Suppurative lung disease & Bronchiectasis.	**2**	**4**
- Pleural effusion & pneumothorax.	**1**	**2**
- Interstitial lung disease	**1**	**2**
- Pulmonary embolism & DVT	**2**	**4**

- Pulmonary hypertension	**1**	**1**
- Tuberculosis	**1**	**1**
- Respiratory failure & Mechanical ventilation	**--**	**6**
- Upper and lower respiratory tract infection	**--**	**2**
Liver disease &Encephalopathy	**2**	**2**
Acute liver disease & ascites and jaundice.	**--**	**2**
Peptic ulceration & Gastritis	**1**	**--**
CNS:		
- Ataxias.	**1**	**2**
- Extrapyramidal syndromes.	**1**	**2**
- Seizures.	**2**	**2**
- CNS infections.	**--**	**2**
Blood:		
- Bleeding disorder (Hemophilia & purpura).	**1**	**1**
- Thrombophilias (Congenital & Acquired).	**1**	**1**
- Transfusion reaction.	**1**	**1**
- Anemia &Hemolytic diseases.	**1**	**1**
Endocrine system:		
- DM.	**1**	**2**
- Diabetic complications.	**1**	**2**
- Hypoglycemia.	**½**	**--**
- Hypo – hypercalcemia.	**½**	**--**
- Adrenocortical insufficiency.	**1**	**2**
- Thyroid dysfunction.	**1**	**2**
Urinary system:		
- Acute renal failure.	**1**	**2**
- Chronic renal failure.	**--**	**2**
- Urinary tract infection.	**1**	**--**
- Glomerulonephritis & acute nephritic syndrome.	**1**	**2**
- Nephrotic syndrome.	**1**	**2**
- Acid base balance	**1**	**2**
Mediastinal syndrome	**--**	**2**
Myopathies & other muscle disease	**1**	**5**
Myasthenia gravis.	**1**	**3**
Sepsis, shock, DIC & ARDS.	**1**	**6**
Total	**48**	**90**

5- Teaching and learning methods:

- **Lectures**
- **Clinical rounds**
- **Small group discussion**

6- Student assessment:

a- Procedures used:

- Written exam to assess knowledge and intellectual skills.
- Oral exam assess knowledge and intellectual skills.
- Practical exam.

d- Schedule:

- Written exam to assess knowledge and intellectual skills.
- Oral exam assess knowledge and intellectual skills**.**
- Practical exam

e- Weighing of assessment:

- Final written exam	80 marks
- Final oral exam	80 marks
Total	**160 marks**

7- List of text books and References:

a- Course Notes:

- Lectures.

b- Required Books:

- Davidson's text book of medicine.
- Current textbook of medicine.
- Kumar textbook of medicine.

c- Recommended books:

- Cecil Textbook of medicine.
- Harrison textbook of medicine.

d- Periodicals Web sites.

- http://emedicine.medscape.com
- http://casesblog.blogspot.com/2006/08/whats-new-in-general-internal-medicine.html.
- http://www.e-meducation.org/links/internal-medicine/
  http://meded.ucsd.edu/clinicalmed/extremities.htm.

Course Coordinator

1- Prof. Eslah ElgendY
2- Prof. Nagia Abd-Elmoeti

Head of the department
Prof. Mervat Saeed

Date: 20 /4 / 2013.