

# Template For Programme Specification of Diploma 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.**  
Coordinator: **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 programme 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.
- Candidate should receive basic knowledge of physics, equipment principals & clinical measurements associated with anaesthesia and intensive care.

#### 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- Understand type of anesthesia and basic aspect of conduction of safe anesthesia & Intensive care.

A7- Recognize ethical and legal aspect of anaesthesia.

A8- Know the effect of anesthesia on the environment.

A9- Quality standard of practice.

**B- Intellectual skills:**

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

**B1-** Determine and emphasize basic concepts of rotation in anaesthesia of general surgery, obstetrics and gynecology, orthopedic, ENT, ophthalmic, urology, intensive care & pain management.

**B2-** Analyze the results of clinical and investigatory findings to formulate anesthetic plan.

**B4-** Determine complications of postoperative period and formulate management strategy and management strategy for critically ill patient

**B5-** Take 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 careful 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.

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

**C5-** Demonstrate how to perform basic and advanced basic life support, airway management and basic regional techniques.

**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-** Work as a team leader in situation comparable to his prioritize problems.

**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-** Make decisions to solve professional problems.

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

### 3- Academic standards:

#### 3a- External references for standards (Benchmarks)

.....  
 .....**NABS**.....  
 .....

#### 3b- Comparison of provision to external references.

Domain	NAQAAE	Programme
<b>Knowledge &amp; Understanding</b>	<b>Graduate must have sufficient knowledge and understanding of:</b> <ul style="list-style-type: none"> <li>• Basic facts, theories of the specialty and related subject fields.</li> <li>• Effects of specialty practice on the environment including rules for environmental conservation.</li> <li>• Fundamental of ethical and legal practice.</li> <li>• Quality standards of practice.</li> </ul>	<b>a1, a2, a3,</b>  <b>a5</b>  <b>a4</b>  <b>a5</b>
<b>Intellectual skills</b>	<b>Graduate must be able to do the following (related to the specialty):</b> <ul style="list-style-type: none"> <li>• Determine, analyze and prioritize problems.</li> <li>• Solve common problems effectively.</li> <li>• Integrate different information to solve professional problems.</li> <li>• Critically appraise researches and articles.</li> <li>• Make decisions to solve professional problems according to available data.</li> </ul>	<b>b2, b3</b>  <b>b2, b3</b>  <b>b3</b>  <b>b4</b>
<b>Professional &amp; Practical skills</b>	<ul style="list-style-type: none"> <li>• Practice basic professional skills (clinical practical &amp; procedural skills).</li> <li>• Write reports related to the profession (patient record, self appraisal audit reports, etc.....)</li> </ul>	<b>c1</b>  <b>c2, c3</b>
<b>General &amp; transferable skills</b>	<ul style="list-style-type: none"> <li>• Communicate effectively using all methods.</li> <li>• Use information technology to improve his/her professional practice.</li> </ul>	<b>d1</b>  <b>d5</b>

	<ul style="list-style-type: none"> <li>Practice self appraisal and determines his learning needs.</li> <li>Work in team.</li> <li>Manage time effectively.</li> <li>Use different sources of information to obtain data.</li> </ul>	<p><b>d4</b></p> <p><b>d4</b></p> <p><b>d4</b></p> <p><b>d5</b></p>
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#### 4- Curriculum Structure and Contents:

4. a- **Programme duration:** one year.

4. b- **Programme structure:**

4. b.i- No. of hours per week: Lectures 14 hr.                      Lab. / Exercise 13 hr.                      Total: 27 hr.

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

4. b.iii- 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.

a- Compulsory

Code No.	Course title	No of units	No. of hours/week			Programme ILOs covered (by no.)
			Exer.	Lab.	Lect.	
	- Physiology				2	a2
	- Anatomy		2		1	a1
	- Pharmacology		2		2	a2
	- Physics & measurements		1		1	a3
	- Anesthesia and ICU		8		8	a3

## 6- Programme admission requirements:

- يشترط الحصول على درجة الإجازة العالية في الطب والجراحة (البكالوريوس) من جامعة الأزهر أو من إحدى جامعات جمهورية مصر العربية أو على درجة معادلة من معهد علمي معترف به من الجامعة.
- أن يكون أمضى السنة التدريبية (الإمتياز).
- أن يتفرغ للدراسة لمدة سنة على الأقل مع مراعاة نظام الجامعة في الدراسة والإمتحانات للمواد الإسلامية للدراسات العليا المقررة لغير خريجي جامعة الأزهر.

## 7- Regulations for progression and programme completion:

First year/ level/ semester:

يشترط للطالب للحصول على درجة الدبلوم في التخدير:

- حضور المقررات الدراسية والتدريبات الإكلينيكية والعملية بصفة مرضية على ألا تقل نسبة الحضور عن 60%.
- أن يجتاز الإختبارات المقررة.

### الأختبارات:

1. اختباران تحريريان مدة كلا منهما ثلاث ساعات في التخدير.
2. اختبار تحريري لمدة ثلاث ساعات في التشريح والفسيولوجيا والفارماكولوجي فيما له علاقة بالتخصص.
3. اختبار إكلينيكي في التخدير.
4. اختبار شفوي في التخدير.
5. اختبار شفوي في التشريح فيما له علاقة بالتخصص.
6. اختبار شفوي في الفيسيولوجيا فيما له علاقة بالتخصص.
7. اختبار شفوي في الفارماكولوجي فيما له علاقة بالتخصص.
8. اختبار شفوي في الفيزياء والقياسات فيما له علاقة بالتخصص.

## 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		
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**FACULTY OF MEDICINE**  
**DIPLOMA IN ANESTHESIA AND INTENSIVE CARE**

**Program code: ATC 700**

# Course Specification

## 1- Course data:

- **Course code:** ATC 700 Course.
- **Title:** ANAESTHESIA AND INTENSIVE CARE.
- **Academic year / Level:** Diploma degree in anaesthesia & ICU.
- **Specialization:** Anaesthesia & ICU.
- **No. of Instructional Units:** Lecture: 384 hours.      Practical: 384 hours.

## 2- Course Aim

**By the end of the program, the candidates should be competent and safe anesthetist & able to provide:**

- Scientific knowledge essential for the professional practice of Anesthesiology and intensive care according to the international standards.
- Skills necessary for proper diagnosis and management of patients in the field of anesthesiology and surgical Intensive Care including diagnostic, problem solving, decision making and anesthetic skills.
- Conduct anesthesia for different common operations, safely and efficiently, to patients with different common medical problems.
- Avoid, suspect, anticipate and manage different complications that may occur peri-operatively.
- Manage of patient intra-operatively, post-operatively and control safely of post-operative pain.
- Resuscitate and manage critically ill patients safely and effectively.
- The candidates should be oriented with basic and general physics and measurement of anaesthesia and recognize how to deal with anaesthetic apparatus and equipments.

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

### A- Knowledge and understanding:

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

**A1-** Describe the anatomy & physiology related to anaesthesia.

**A2-** Understand the pharmacological basis related to anaesthesia.

**A3-** Understand the types of anaesthesia and basic aspects of conduction of safe anaesthesia & management in intensive care.

- A4-** Understand the mechanisms of action of different anaesthetics & Co-adjuvant drugs.
- A5-** Know the complication of anaesthesia, how to anticipate & how to avoid and manage.
- A6-** Understand the types and techniques of anaesthesia needed for all diseases.
- A7-** Demonstrate a working knowledge of the physics and relevant clinical measurements for different monitoring devices and anaesthesia machine.
- A8-** Identify the mechanism of action of different drugs taken by the patient and its interaction with the anesthetic drugs.
- A9-** Understand all medical emergencies that the anesthetist may be confronted with peri-operatively or in the post operative ICU.
- A10-** Recognize how to score the traumatized patient and manage life threatening illness.
- A11-** Recognize the ethical and legal aspect of anaesthesia practice.

## **B- Intellectual skills**

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

- B1-** Analyze the results of clinical and investigatory findings to formulate anaesthesia plan.
- B2-** Identify and manage problems under general anaesthesia.
- B3-** Determine complications of postoperative period and formulate management strategy and management of critically ill patients.
- B4-** Select the proper technique of anesthesia (general, regional or local anesthesia) and identify its related complications.
- B5-** Formulate the management strategy for critically ill patient and different emergencies.
- B6-** 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.
- B7-** Define the pathophysiology and the management of different emergencies as shock, pulmonary embolism, arrhythmias..... etc.
- B8-** Make decision to solve professional problems according to available data.
- B9-** Interpret data with his capability and know how to take a decision for need of support.

## **C- Professional and practical skills**

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

- C1-** Acquire the skills of careful preoperative assessment, consultation for interpretation of clinical data, laboratory results and the investigations.
- C2-** Administer competently and safely the required types of anaesthesia.
- C3-** Maintain patent airway with different available techniques.
- C4-** Perform common regional and local anesthetic techniques properly and safely.
- C5-** Demonstrate how to perform basic life support, airway management.
- C6-** Apply the principal of sterile techniques and infection control guide lines.



**C7-** Assess and manage post operative pain in different age groups by neural blockade by different methods.

**C8-** Assess and manage fluid balance, blood transfusion and nutritional support.

**A- 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-** Work as team.

**D4-** Learn solving of problems.

**D5-**

**D6-** Evaluate risks imposed during anaesthesia practice and work within limits of knowledge and experience and learn independently.

**D7-** Approach medico legal problems.

**4- Course content:**

<b>Topics</b>	<b>Lecture</b>	<b>Practical</b>
<b>Preoperative preparation &amp; medications.</b>	<b>8</b>	<b>8</b>
<b>Preoperative assessment &amp; Medications.</b>	<b>7</b>	<b>7</b>
<b>Airway management</b>	<b>10</b>	<b>10</b>
<b>Vascular access: venous &amp; arterial cannulation, central line</b>	<b>8</b>	<b>8</b>
<b>Inhalational anesthetics</b>	<b>4</b>	<b>4</b>
<b>Patient monitoring</b>	<b>10</b>	<b>10</b>
<b>IV anesthetics</b>	<b>4</b>	<b>4</b>
<b>Anesthesia delivery system</b>	<b>6</b>	<b>6</b>
<b>Respiratory physiology and respiratory functions during anesthesia</b>	<b>10</b>	<b>10</b>
<b>Neuromuscular physiology &amp; Muscle relaxants</b>	<b>20</b>	<b>20</b>
<b>Local anesthetics</b>		
<b>Cholinesterase inhibitors</b>		
<b>Autonomic nervous system drugs</b>		
<b>Regional anesthesia and nerve blocks</b>	<b>15</b>	<b>15</b>
<b>Peri-operative fluid management and transfusion therapy</b>	<b>20</b>	<b>20</b>
<b>Post anesthesia care</b>	<b>6</b>	<b>6</b>
<b>Operating room management and environmental safety</b>	<b>2</b>	<b>2</b>
<b>Anesthetic complication</b>	<b>6</b>	<b>6</b>
<b>Anesthetic implications of concurrent &amp; uncommon disease</b>	<b>6</b>	<b>6</b>
<b>Outpatient anesthesia</b>	<b>6</b>	<b>6</b>
<b>Anesthesia at remote location</b>	<b>6</b>	<b>6</b>
<b>Renal physiology and anesthesia for renal and</b>	<b>10</b>	<b>10</b>

genitourinary system		
Anesthesia for liver and GIT	10	10
Anesthesia for ENT	10	10
Anesthesia for orthopedic surgery	12	12
Anesthesia for trauma and emergency conditions	15	15
Anesthesia for obstetrics and gynecology	15	15
Anesthesia for patient with respiratory disease	10	10
Anesthesia for endocrine diseases	10	10
Anesthesia for elderly	10	10
Acid base balance & electrolyte balance	15	15
Anesthesia for patient with cardiovascular diseases	12	12
Anesthesia for vascular surgery	8	10
Cerebral physiology and anesthesia for neurosurgery (control ICP, craniotomy, shunt op and head trauma)	10	10
Pediatric anesthesia	12	12
Assessment of pain	4	4
Acute (postoperative) pain	4	4
Management of chronic pain	4	4
Mechanical ventilation	10	10
Post operative intensive care	10	10
Management of burn patient	10	10
General intensive care	10	10
Ethical and legal aspect	4	4
CPR	15	15
<b>TOTAL</b>	<b>384</b>	<b>384</b>

### **5- Teaching and Learning Methods:**

- Lectures and tutorials.
- Practical and clinical cases.
- Workshops and simulators.
- Case study

### **6- 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 examination 1 <sup>st</sup> & 2 <sup>nd</sup> papers:	200 Marks
- Final oral examination:	200 Marks
- Final clinical examination:	100 Marks
- Final clinical and practical examination:	150 Marks

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**Total**

**650 Marks**

**7- List of References:**

**A- Course Notes:**

- Lecture.

**B- Required text Books:**

- Basics of Anesthesia: by Stoelting RK and Miller RD, 5th edition, Churchill 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 Churchill Livingstone, New York, 2005.
- Stoelting's Anesthesia and Co-existing disease, 5th edition, By: Hines RL, Marschall KE, 2008, Elsevier Churchill Livingstone.

**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](http://www.anaesthesiauk.com/default.aspx).
- [www.pharmacology2000.com/physics/Chemistry\\_Physics/physics1.htm](http://www.pharmacology2000.com/physics/Chemistry_Physics/physics1.htm)
- [www.freshgasflow.com/index.html](http://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											B									
	Knowledge and Understanding											Intellectual Skills									
	1	2	3	4	5	6	7	8	9	10	11	1	2	3	4	5	6	7	8	9	
Anesthesia	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Physics			*				*					*			*		*				
Pharmacology		*		*		*		*		*		*	*	*	*	*		*	*		
Anatomy	*		*			*						*			*		*				
Physiology	*				*		*			*		*	*	*		*		*	*		

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

# Physics Course Specification

## 1- Course data:

- **Course code:** ATC 701.
- **Course title:** PHYSICS AND MEASUREMENTS.
- **Academic year / Level:** Diploma Degree in anaesthesia & ICU.
- **Specialization:** Anaesthesia & ICU.
- **No. of Instructional Units:**     **Lecture:** 48 Hours             **Practical:** 48 Hours

## 2- Course Aim:

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

- Demonstrate knowledge of application of the principals and the medical sciences in the field of anaesthesia.
- Demonstrate and understand the principles of anaesthesia.
- Describe the principles that govern monitoring devices in anaesthesia and ICU.

## 3- Intended Learning Outcomes of Course (ILOs):

### A- Knowledge and Understanding:

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

- A1-** Recognize physical principles of machines, equipments and tools used in anesthetic practice.
- A2-** Assess the safety measures that should be followed during practice.
- A3-** 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-** Detection of any anaesthetic system failure.
- B3-** correlates the facts of physics and measurements with clinical reasoning, diagnosis and management of diseases related to anaesthesia and ICU.

### 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- Deal with computer systems.

D2- Communicate with each other and interact effectively with the patients using appropriate anesthetic sets, and then write a report about the calibration, integrity of these sets and complications.

D3- Plan for test the anesthetic equipments in accordance with standard scientific guidelines.

D4- Work in a team and solve problems.

D5- Organize thinking and precision in talking decisions.

**4- Course content:**

Topics	No. of Hours	
	Lectures	Practical
SI units (basic – derived) Behavior of gases & Gas laws	4	2
Gas diffusion & solubility of gas and liquids Uptake & Distribution of inhalational anesthetics	4	4
Flow, Viscosity, Density, Surface tension, Osmosis	2	2
Pressure gauges & pressure regulators	2	2
Anesthetic breathing systems	2	2
Safety measures in anesthetic machine	2	2
Electricity( principles, electronics, pace maker, defibrillator, electrocution)	2	2
Heat & Temperature	2	2
Humidity & Nebulizers	2	2
Vaporizers	2	2
Ventilators	2	2
Respiratory functions	2	3
Pollution in OR & Scavenging systems	2	2
Fires & explosions	2	2
Measurement of arterial blood pressure	2	2
Measurement of CVP	2	2
Measurement of humidity	2	2
Measurement of CO <sub>2</sub> , capnography	1	2

Measurement of O <sub>2</sub> , pulse oximetry	1	2
Measurement of cardiac output	2	3
Measurement of temperature	2	2
Measurement of osmosis	2	1
Flow meters	1	1
Mass spectrometer	1	--
<b>TOTAL</b>	<b>48</b>	<b>48</b>

### 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.

#### b- Schedule:

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

#### c- Weighing of assessment:

- Final written exam    50 marks
- Final oral exam        50 marks

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**Total        100 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, Paul D. Published by Butterworth- Ilesch Publishers, 5th-edition, 2003.
- Fundamental Principles and Practice of Anaesthesia by Peter Hutton, Griselda Cooper, Francis M James, John F. Butterworth IV. Published by Informa Health Care, 2002.
- Miller's Anesthesia by Ronald Miller. Published by Churchill Livingstone; 6th edition, 2004.

#### c- Recommended Books:

- Understanding 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](http://www.anaesthesiauk.com/default.aspx)
- [www.pharmacology2000.com/physics1Chemistry\\_Physics/physics'.htm](http://www.pharmacology2000.com/physics1Chemistry_Physics/physics'.htm)
- [www.freshgasflow.com/index.html](http://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:

- **Course Code:** Anat. 702.
- **Course Title:** Anatomy course for the Master Degree in Anesthesia & ICU.
- **Academic year/ level:** Diploma Degree in Anesthesia & ICU.
- **Specification:** Anesthesia & ICU.
- **No. of instructional units:**      **Lecture: 48 Hours**                      **Practical: 96 Hours**

## 2- Course Aim:

**By the end of the course, the candidate should be able to:** refresh candidate knowledge in gross anatomy of upper airway, bronchial tree and lung, the heart, the nerves and the vertebral canal in addition to other regions of special interest.

## 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 anatomy of cranial nerves, spinal nerves, plexuses, autonomic nerves.
- 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-** Identify 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.

### B- Intellectual skills:

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

- B1-** Analyze anatomical data to prepare patient for different interventions.
- B2-** Correlate between the medical condition of the patient and the surgery that will be operated and think about the Anesthetic plan.
- B3-** Integrate the anesthetics on the patients intra operatively and post operatively.
- 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).

**C- Professional skills:**

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

- C1-** Identify any relevant structures (e.g. nerves) in a diagram, photograph of a dissected region, a plastic model, a dissected specimen or museum jar.
- C2-** Identify any relevant structure in a normal X- Ray, CT image.
- C3-** Define the appropriate anatomy for the patient.
- C4-** Perform Regional anesthesia (e.g. Spinal, Epidural, Local intravenous anesthesia peripheral nerve blocks).

**D- General skills:**

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

- D1-** Communicate effectively with anatomy department and work as a team.
- D2-** Do literature search on the internet.

**4- Course content:**

	<b>Topics</b>	<b>Hours</b>	<b>Practical</b>
<b>1</b>	<b>The respiratory pathway (nose, mouth, pharynx, larynx, ...)</b>	<b>4</b>	<b>8</b>
<b>2</b>	<b>The heart &amp; Lung</b>	<b>5</b>	<b>10</b>
<b>3</b>	<b>The vertebral canal &amp; its content</b>	<b>5</b>	<b>10</b>
<b>4</b>	<b>The spinal cord &amp; spinal canal</b>	<b>4</b>	<b>8</b>
<b>5</b>	<b>The cervical plexus and brachial plexus</b>	<b>4</b>	<b>8</b>
<b>6</b>	<b>The thoracic nerves, Lumbar plexus &amp; Sacral plexus</b>	<b>4</b>	<b>8</b>
<b>7</b>	<b>The autonomic nervous system</b>	<b>5</b>	<b>10</b>
<b>8</b>	<b>The cranial nerves &amp; The anatomy of pain pathway</b>	<b>5</b>	<b>10</b>
<b>9</b>	<b>The thoracic inlet, intercostals spaces &amp; diaphragm</b>	<b>4</b>	<b>8</b>
<b>10</b>	<b>The cubital fossa</b>	<b>2</b>	<b>4</b>
<b>11</b>	<b>The abdominal wall</b>	<b>3</b>	<b>6</b>
<b>12</b>	<b>Great veins of the neck</b>	<b>4</b>	<b>8</b>
	<b>Total</b>	<b>48</b>	<b>96</b>

**5- Teaching and Learning methods:**

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

**6- Assessment methods:**

- Written exam:	50 Marks
- <u>Oral exam:</u>	<u>50 Marks</u>
<b>Total</b>	<b>100 Marks</b>

**7- List of text book and references:**

- Gray's Anatomy, the Anatomical basis of Clinical Practice by Susan Standring; 19th edition, 2005, Elsevier Inc.
- Gray's Anatomy for students by Drake Vogel & Mitchell; 1<sup>st</sup> 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. 703.
- **Course Title:** Pharmacology.
- **Academic year/ Level:** Diploma degree in Anesthesia & ICU.
- **Specialization:** Anesthesia & ICU.
- **Lecture:** 96 Hours.      **Practical:** 96 Hour.

## 2- Course Aim:

The aim of this course is to provide the candidate with an understanding the pharmacology of the drugs frequently used by the anesthesiologist, including mechanisms of action, adverse effects, dosing, Drugs interactions and the use in specific patient population.

## 3- Intended Learning Outcomes (ILOs):

### A- Knowledge and understanding:

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

- A1-** Identify the basic pharmacokinetics principles affecting drug actions.
- A2-** Discuss the different clinical pharmacology principles that should be applied in selecting drugs.
- A3-** Demonstrate of knowledge of pharmacodynamics & kinetics.
- A4-** Demonstrate and understanding of the principles and practice of pharmacology and drug interaction.

### B- Intellectual skills:

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

- B1-** Calculate the appropriate dosing of drugs according to the different characteristics of patients.
- B2-** Evaluate the different agent used in general and local anaesthesia.
- B3-** Identify the problem implied on the patient due the drug used.
- B4-** Interpret the advantages and disadvantages of different types of drug therapy.
- B5-** Obtain and record a comprehensive drug history of the patient.

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

**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-** Select plan of management for the patients with certain diseases in accordance with the standard scientific guidelines.

**D3-** Recognize and accept the limitation in their knowledge and clinical skills.

**D4-** Write an essay about patients with medical problems and trial of solving.

**4- Course content**

<b>Topics</b>	<b>No of hours</b>	
	<b>Lecture</b>	<b>Practical</b>
<b>Introduction Pharmacokinetics &amp; pharmacodynamics</b>	<b>2</b>	<b>2</b>
<b>Autonomic nervous system</b>	<b>5</b>	<b>5</b>
<b>IV induction anaesthesia inhalational anaesthetics</b>	<b>5</b>	<b>5</b>
<b>Neuromuscular blocking drugs</b>	<b>4</b>	<b>4</b>
<b>Anticholinesterases</b>	<b>2</b>	<b>2</b>
<b>Local anesthetics</b>	<b>4</b>	<b>4</b>
<b>Drug dosage in the ICU</b>	<b>10</b>	<b>10</b>
<b>Common drug toxicities and management</b>	<b>4</b>	<b>4</b>
<b>Basic principle of clinical pharmacology</b>	<b>2</b>	<b>2</b>

Electrolytes and acid base balance	6	6
Endocrinal emergencies	5	5
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	8	8
Diuretics	3	3
Drug therapy of shock	6	6
Drug therapy of diabetes mellitus	4	4
Drug therapy of bronchial asthma	3	3
Drug therapy of epilepsy	3	3
Antiemetic drugs	2	2
<b>TOTAL</b>	<b>96</b>	<b>96</b>

### 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	50 marks
- Final oral exam	50 marks
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<b>Total</b>	<b>100 marks</b>

**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 pathophysiologic 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://www.ncbi.nlm.nih.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. 704.
- **Course Title:** Medical physiology.
- **Academic year/ Level:** Diploma degree in anesthesia and ICU.
- **Specialization:** Anesthesia and ICU.
- **Lecture:** 96 Hours.                      **Practical:** .....

## 2- Course Aim:

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

- Know the function of the normal body systems under normal condition.
- Understand the mechanisms of related diseases or related functions.

## 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-** Determine and identify 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.

### B- Intellectual Skills:

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

- B1-** Analyze the given information.
- B2-** Evaluate and expect the outcome of disturbed function.
- B3-** Assess the hemodynamic stability of the patient intra operatively.
- B5-** Recognize 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- Apply physiological skills in intra operative patient.

**4- Course Content**

	<b>Topics</b>	<b>Hours</b>
1	<b>Respiratory physiology and respiratory functions, control of respiration.</b>	<b>10</b>
2	<b>Cardiovascular physiology: cardiac output, arterial blood pressure, circulation, hemorrhage and shock</b>	<b>10</b>
3	<b>Blood&amp; blood coagulation</b>	<b>9</b>
4	<b>Renal physiology and Acid base balance.</b>	<b>10</b>
5	<b>Autonomic nervous system</b>	<b>9</b>
6	<b>Nerve impulse and Neuromuscular physiology</b>	<b>12</b>
7	<b>Liver function</b>	<b>4</b>
8	<b>Deglutition and vomiting</b>	<b>2</b>
9	<b>Thermoregulation</b>	<b>6</b>
10	<b>Physiological changes associated with pregnancy. pediatric &amp; elderly patients</b>	<b>6</b>
11	<b>Physiology of Pain</b>	<b>6</b>
12	<b>Cerebral physiology and cerebral blood flow</b>	<b>12</b>
	<b>Total</b>	<b>96</b>

**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	50	Mark
Final oral exam	50	Mark

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**Total** 100 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**

**2- Prof. Nagia Abd-Elmoeti**

**Head of the department**

**Prof. Mervat Saeed**

**Date: 20 / 4 / 2013**