Peer Revision

Reviewers	University	Date of Revision
- Prof. Dawlat Salem	Cairo	10/12/2011
- Prof. Ahmad K. Mansur	Mansura	28/11/2011

Program Specification of MD degree in Anesthesia and intensive care

Sohag University **Faculty of Medicine**

A. Basic Information

1. Program title: MD degree in anesthesia and intensive care
2. Program type: Single
3. Faculty: Faculty of Medicine
4. Department: Anesthesia and Intensive Care Unit
5. Coordinator : Dr. Islam Mokhtar Ahmed
6. Assistant Coordinator: Dr. Khaled Mohamed Abd-Elaal
7. External evaluator :Prof / Mohamed Almaz
8. Last date of program specifications approval: Faculty council No. "317", decree No. "1533" dated 17/12/2018.

B. Professional Information

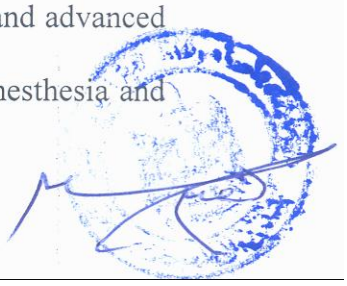
1- Program aims

The aim of this program is to provide the postgraduate with the advanced medical knowledge and skills essential for the mastery of practice of the specialty and necessary for further training and practice in the field of Anesthesiology and Intensive Care through providing:

1. Recent scientific knowledge essential for the mastery of practice of Anesthesiology and intensive care according to the international standards.
2. Skills necessary for proper diagnosis and management of patients in the field of anesthesiology and intensive care including diagnostic, problem solving, decision making and operative skills.
3. Ethical principles related to the practice of this highly sensitive specialty.
4. Active participation in community needs assessment and problems identification.
5. Maintenance of learning abilities necessary for continuous medical education.
6. Upgrading research interest and abilities.

2- Attributes of the student:

1. Efficient in carrying out the basics and methodologies of scientific research.
2. The continuous working to add new knowledge in the field of anesthesia and surgical intensive care.
3. Applying the analytical course and critical appraisal of the knowledge in his specialty and related fields.
4. Merging the anesthetic and intensive care knowledge with the other related knowledge with conclusion and developing the relationships in between them.
5. Showing a deep awareness with the ongoing problems, theories, and advanced sciences in the specialty of anesthesia and intensive care.
6. Determination of the professional problems in the specialty of anesthesia and intensive care and creating solutions for them.
7. Efficient in carrying out the professional skills in his specialty.



Program Specification of MD degree in Anesthesia and intensive care

Sohag University **Faculty of Medicine**

A. Basic Information

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2. The continuous working to add new knowledge in the field of anesthesia and surgical intensive care.
3. Applying the analytical course and critical appraisal of the knowledge in his specialty and related fields.
4. Merging the anesthetic and intensive care knowledge with the other related knowledge with conclusion and developing the relationships in between them.
5. Showing a deep awareness with the ongoing problems, theories, and advanced sciences in the specialty of anesthesia and intensive care.
6. Determination of the professional problems in the specialty of anesthesia and intensive care and creating solutions for them.
7. Efficient in carrying out the professional skills in his specialty.

8. Using advanced suitable technologies which serves his practice.
9. Efficient communication and leadership of team work in his specialty.
10. Decision making through the available information.
11. Using the available resources efficiently and working to find new resources.
12. Awareness with his role in the development of the society and preserve environment.
13. Behaving in a way which reflects his credibility, accountability, and responsibility.
14. Keeping continuous self development and transfer his experiences and knowledge to others.

3- <u>Intended learning outcomes (ILOs)</u>

a) **Knowledge and understanding**

By the end of the study of doctoral program in Anesthesia and Surgical intensive care the Graduate should be able to:

a1. Demonstrate the recent advances in preoperative patient evaluation.
a2. Mention and explain recent pre anesthetic medications.
a3. Define the recent patient monitoring during anesthesia and in surgical intensive care.
a4. Mention the recent advances in breathing system and resuscitation system.
a5. Illustrate the essential features of anesthesia machine.
a6. Demonstrate the recent knowledge in airway management.
a7. Explain and define recent types, classification, and mechanism of action of, reversal of block, pharmacodynamics & pharmacokinetics of anesthetic drugs.
a8. Describe the recent advances of regional Anesthesia.
a9. Define the recent advances in cardiopulmonary bypass
a10. Describe the recent advances in mechanical ventilation..
a11. Illustrate the recent impact of anesthesia for patient with variable general diseases.
a12. Enumerate recent advances in management of anesthetic complication.
a13. Define the types and techniques of anesthesia needed for all diseases.
a14. Mention etiology of electrolyte disturbance (e.g. hyper &hyponatremia, hyper & hypokalemia…), how to diagnose it and anesthetic management.
a15. Mention the fluid management, evaluation of intravascular volume, perioperative fluid therapy and blood transfusion.
a16. Define the recent management of the trauma patient under anesthesia and in surgical intensive care.
a17. Demonstrate recent knowledge of Cardiopulmonary Resuscitation (CPR).
a18. Define the recent principles of management of ICU cases.
a19. List the clinical picture and differential diagnosis of intensive care patients
a20. List Principles, methodologies, tools and ethics of scientific research, biostatistics and computer
a21. Mention the principles and fundamentals of ethics and legal aspects of professional practice in the field of Anesthesia and Surgical intensive care
a22. Enumerate the principles and fundamentals of quality assurance of professional practice in the field of Anesthesia and Surgical intensive care
a23. Enumerate the effect of professional practice on the environment and the methods of environmental development and maintenance.

b) Intellectual skills

By the end of the study of doctoral program in anesthesia and intensive care unit the Graduate should be able to:

b1. Interpret data acquired through history taking to reach a Proper selection for of anesthesia.
b2. Select from different diagnostic alternatives the ones that help reaching a final diagnosis for anesthesia and intensive care unit problems.
b3. Conduct research studies that add to knowledge.
b4. Formulate scientific papers in the area of anesthesia and intensive care unit
b5. Assess risk in professional practices in the field of anesthesia and intensive care unit
b6. Plan to improve performance in the field of anesthesia and intensive care unit
b7. Identify anesthesia and intensive care unit problems and find solutions..
b8. Have the ability to innovate non traditional solutions to anesthesia and intensive care unit problems.
b9. Mange Scientific discussion based on scientific evidences and proofs.
b10. Criticize researches related to anesthesia and intensive care unit

c) Professional and practical skills

By the end of the study of doctoral program in Anesthesia and Intensive Care Unit the Graduate should be able to:

c1. Master the basic and modern professional skills in the area of Anesthesia and Intensive Care Unit
c2. Write and evaluate medical reports.
c3. Evaluate and develop methods and tools existing in the area of Anesthesia and Intensive Care Unit.
c4. Use of technological methods to serve the professional practice.
c5. Train junior staff through continuous medical education programs
c6. Design new methods, and ways of professional practice.

d) General and transferable skills

By the end of the study of doctoral program in Anesthesia and Intensive Care the Graduate should be able to:

d1. Do the different types of effective communication.
d2. Use appropriate computers program package
d3. Teach others and evaluate their performance.
d4. Asses himself and identify of personal learning needs.
d5. Use of different sources for information and knowledge.
d6. Work coherently and successfully as apart of team and team's leadership.
d7. Manage scientific meetings administration according to the available time.

4- Academic standards

External references for standards (Benchmarks)

Sohag faculty of medicine adopted the general national academic reference standard (NARS) provided by the national authority for quality assurance and accreditation of education (NAQAAE) for postgraduates program. This was approved by the faculty council decree NO.7528, in its session NO.191 Dated: 15/3/2010. The adoption of NARS and the suggested ARS were approved by University council degree No 587, in its cession No.60. Dated 26-12-2011

5- Curriculum Structure and Contents

5.a- Program duration: 7 semesters (3.5 years)

5.b- Program structure

5.b.i- No. of hours per week:

	hours /week

Subject	Lectures	Practical / Surgical	Clinical
First Part:			
Minors :			
• Bio Statistics & Computer	**2**	**2**	-----
• Research Methodology	**2**	**2**	----
• Primary medical reports	**1**	**2**	-----
Bio Physics & Clinical Measurements	**2.5**	**3**	-----
Second Part:			
Anesthesia and Surgical Intensive Care	**3.75**	**7.5**	-----

code	Item		No	%
b.i	Total credit hours	Compulsory	90	100
		Elective	0	0
		Optional	0	0
b.iii	credit hours of basic sciences courses		٦	6.7
b.iv	credit hours of courses of social sciences and humanities		0	0
b.v	credit hours of specialized courses:		61	67.7
b.vi	credit hours of other course			
b.vii	Practical/Field Training		8	8.9%
b.viii	Program Levels (in credit-hours system): Level 1: 1st part Level 2: 2nd Part Level 3: Thesis		 14 ٥٣ 15	 15.6 ٥٨.٩ 16.7

6- Program courses

5.1- Level/Year of Program 1 Semester 1

Semester…1…..

First Part

a. Compulsory 5 courses

Subject	hours /week				Program ILOs covered
	Total No. of hours	Lectures	Practical / Surgical	Clinical	
First Part:					
Minors :					
Bio Statistics & Computer	**2.5**	**1**	**1.5**	-----	**a20, b1, c4, d2, d5**
Research Methodology	**.5**	**.5**	-	----	**a20,b3,b4,b8,b10,c1, c6, d1,d5, d6**
Primary Medical Reports	**.5**	**.5**		-----	**a21, c2, d1, d6**
Bio Physics & Clinical Measurements	**5.5**	**2.5**	**3**	-----	**a5, a10, b11, c4, d1,**
Second Part:					

Anesthesia and Surgical Intensive Care	**11.25**	**3.75**	**7.5h**	**-----**	**a1-a4, A6- a23,b1, b2, b5 – b9,c1, c3- c6 d1, d3- d7**

7- <u>Program Admission Requirements</u>

I- General Requirements.

- Candidate should have either MBBch degree from any Egyptian Faculty of Medicine or Equivalent Degree from Medical Schools abroad approved by the ministry of high Education.
- Candidate should know how to speak & write English well
- Candidate should have computer skills**.**
- Follow postgraduate bylaw Regulatory rules of Sohag Faculty of Medicine approved by the ministerial decree No. (44), dated 6/1/2010.

II- Specific Requirements

- Master degree in Anesthesia and intensive care with at least "Good Rank".

8- <u>Regulations for Progression and Program Completion</u>

Duration of program is 90 credit hours (≥7 semesters ≥3.5 years), starting from registration till acceptance of the thesis; divided to:

First Part: (15 Credit hours ≥6 months ≥1 semester):

- Program-related basic science, Research Methodology, Ethics & medical reports, Biostatistics and computer.
- At least six months after registration should pass before the student can ask for examination in the 1st part.
- Two sets of exams: 1st in October — 2nd in April after fulfillment of the credit hours.
- At least 60% of the written exam and 60% of the total oral and practical/clinical is needed to pass in each course.
- For the student to pass the first part exam, a score of at least 60% (Level D) in each course is needed.
- Those who fail in one course need to re-exam it only.
- GPA of ≥1.3 is needed to pass this level (semester).

Second Part: (50-60 Credit hours ≥24 months= 4 semesters):

- Program related specialized science of Anesthesia courses. At least 24 months after passing the 1st part should pass before the student can ask for examination in the 2nd part.
- Fulfillment of the requirements in each course as described in the template and registered in the log book (8 Credit hours; with obtaining ≥75% of its mark) is a prerequisite for candidates to be assessed and undertake part 1 and part 2 examinations; the credit hours of the logbook are calculated as following:
  - Each Cr. Hr.= 60 working Hrs.
  - Logbook= 8 Cr. Hr. X 60 working Hrs = 480 Working Hrs.
  - Collection of working Hrs. is as following:

Activity		**Hrs**
Grand rounds	**اجتماع علمى موسع**	**٦**

Training courses	**دورات تدريبية**	**12/ day**
Conference attendance	**حضور مؤتمرات علمية** **داخلى** **خارجة**	 **١٢/day** **18/day**
Thesis discussion	**حضور مناقشات رسائل**	**٦**
Workshops	**حضور ورش عمل**	**١٢/day**
Journal club	**ندوة الدوريات الحديثة**	**٦**
Seminars	**لقاء علمى موسع**	**٦**
Morbidity and Mortality conference	**ندوة تحليل المخاطر المرضية أوالوفاة**	**٦**
Self education program	**برنامج التعليم الذاتى**	**٦**

- Two sets of exams: 1st in October - 2nd in April.
- At least 60% of the written exam is needed to be admitted to the oral and practical exams.
- 4 times of oral and practical exams are allowed before the student has to re-attend the written exam.

Third Part (Thesis) (15 Credit hours =24-48 months=4-8 semester):

- Documentation of the subject should not be delayed for > 1.5 years after registration.
- Could start after registration and should be completed, defended and accepted after passing the 2nd part final examination, after passing of at least 24 months after documentation of the subject of the thesis and after publishing of at least one paper from the thesis in a specialized peer-reviewed journal.
- Accepting the thesis is enough to pass this part.

9- Methods of students assessment

Method of assessment	weight	The assessed ILOs
1-Research assignment		- General transferable skills, intellectual skills
2-Written Exams: -Short essay: 40% -structured questions: 25% -MCQs: 20% -Commentary, Problem solving: 15%	50%	 - Knowledge - Knowledge - Knowledge, intellectual skills - Intellectual skills, General transferable skills
3-OSCE/ OSPE	50%	-Practical skills, intellectual skills, general transferable skills
4-Structured Oral Exams		- Knowledge, Intellectual skills, General transferable skills

Assessment schedule:

Part I:

- Biostatistics & Computer: Written Exam (2 hours) + Structured oral Exam+ OSPE
- Research Methodology: Written Exam (2 hours) + structured oral Exam+ OSPE

- Primary medical reports: Written Exam (2 hour) + Structured oral Exam+ OSPE
- Bio Physics and Clinical Measurements: Written Exam (3 hours) + structured oral Exam.

Part II:

- Anesthesia and Surgical Intensive Care: Two Written Exams (3 hours for each) + one written exam containing commentary + OSCE + Structured oral Exam + OSPE.

10- Evaluation of program

Evaluator	Tool	Sample
1- Senior students	questionnaire	15
2- Alumni	questionnaire	20
3- Stakeholders (Employers)	questionnaire	15
4-External Evaluator(s) (External Examiner(s))	report	5
5- Other		

Course Specification of Biostatistics and Computer in MD degree in Anaesthesia and Surgical Intensive Care

Sohag University **Faculty of Medicine**

1. Program (s) on which the course is given: Biostatistics and Computer in MD degree in Anesthesia and Surgical Intensive Care
2. Minor element of program.
3. Department offering the course: Community Medicine Department
4. Department offering the program: Anesthesia and Surgical Intensive Care
5. Academic year / Level: 1st part.
6. Date of specification approval: Faculty council No. "317", decree No. "1533" dated 17/12/2018

A. **Basic Information**

Title: Biostatistics and Computer
Code: COM 0501-300

Title	Lecture	Practical	Total	Credit
Applied Biostatistics	30	30	60	3

B. Professional Information

1. Overall Aims of Course

- To influence the students to understand the basics of medical biostatistics
- To use computer programs

2. Intended Learning Outcomes of Courses (ILOs)

a) Knowledge and understanding:

By the end of the course, the student is expected to be able to:

a1. Enumerat different programs of analysis of data and statistical packages
a2. Define the recent advances of sources of data and methods of collection.
a3. Summarize data, construct tables and graphs
a4. Calculate measures of central tendency and measures of dispersion
a5. Describe the normal curves and its uses
a6. Illustrate selected tests of significance and the inferences obtained from such tests
a7. Illustrate selected tests of significance for parametric and non parametric inferences
a8. Identify factor analysis and discrimination analysis

b) Intellectual Skills

By the end of the course, the student is expected to be allowed to:

b1. understand how to collect and verify data from different sources
b2. Interpret data to diagnose prevalent health problems in the field of **Anesthesia and Surgical Intensive Care**

c) Professional and Practical Skills:

By the end of the course, the student is expected to practice the following:

c1. Perform recent advanced technological methods in collection, analysis and interpretation of data

d) General and Transferable Skills:

By the end of the course, the student is expected to be able to:

d1. Use appropriate computer program packages.

d2. Use of different sources for information and knowledge about biostatistics.

3. Contents

Topic	No. of hours	Lecture	Tutorial/Practical
Recent advances in collection, analysis and interpretation of data	4	2	2
-Details of Tests of significance: Proportion test	4	2	2
Chi-square test	4	2	2
Student T test	6	3	3
Paired T test	6	3	3
-Correlation	6	3	3
-Regression	6	3	3
-ANOVA test	6	3	3
-Discrimination analysis	6	3	3
Factor analysis	6	3	3
- parametric and non parametric tests	6	3	3
Total	60	30	30

4. Teaching and Learning Methods

4.1- Lectures

4.2- Practical sessions

4.3- Computer search assignments

4.4- Computer application

5. Student Assessment Methods

Method of assessment	The assessed ILOs
5.1- Observation of attendance and absenteeism.	- General transferable skills, intellectual skills
5.2-Written Exam: -Short essay: 40% -structured questions: 25% -MCQs: 20% -Commentary, Problem solving: 15%	 - Knowledge - Knowledge - Knowledge, intellectual skills - Intellectual skills, General transferable skills,
5.3-Structured Oral Exam	- Intellectual skills, Knowledge, General transferable skills
5.4Computer search assignment	-General transferable skills, intellectual skills

Assessment Schedule

Assessment 1……..Final written exam Week: 24

Assessment 2……..Final Structured Oral Exam Week: 24
Assessment 3 Attendance and absenteeism throughout the course
Assessment 4 Computer search assignment performance throughout the course

Weighting of Assessments

Final-term written examination	50	%
Final Structured Oral Exam	50	%
Total	100	%

Formative only assessments: attendance and absenteeism and Computer search assignments performance.

6. List of References

6.1- Essential Books (Text Books)

1-Maxy-Rosenau Public health and preventive medicine, 2008.,Robert Wallace, publisher McGraw-Hill Medical; 15 edition.

6.2- Recommended Books

1- Dimensions of Community Based projects in Health Care, 2018. Arxer, Steven L., Murphy, John W.; 1st edition.

2- Parks Text Book of Preventive & Social Medicine. 2017., K. Park. BanarsidasBhanot Publishers; 23 edition.

3- Clinical Epidemiology: The Essentials, 2013, Robert F., Suzanne W. Fletcher, Grant S., publisher Lippincott Williams & Wilkins; 5 edition.

6.3- Periodicals, Web Sites, …etc

1-American Journal of Epidemiology

2-British Journal of Epidemiology and Community Health

1. 3- WWW. CDC and WHO sites **Facilities Required for Teaching and Learning:**

1- ADEQUATE INFRASTRUCTURE: including teaching places (teaching class, teaching halls, teaching laboratory), comfortable desks, good source of aeration, bathrooms, good illumination, and safety & security tools.
2- TEACHING TOOLS: including screens, computers including cd (rw), data shows, projectors, flip charts, white boards, video player, digital video camera, scanner, copier, colour and laser printers.

Course Coordinator: Dr/ Foad Metry Atya

Head of Department: Prof/ Ahmed Fathy Hamed

Date: 18/12/2011, Revised:1/9/2012, Revised:1/12/2013, Revised:1/12/2018

Course Specification of Research Methodologies MD degree in Anesthesia and Surgical Intensive Care First Part

Sohag University **Faculty of Medicine**

1. Program in which the course is given: MD degree in Anesthesia and Surgical Intensive Care
2. Major or Minor element of the program: Minor
3. Department offering the program: Anesthesia and Surgical Intensive Care
4. Department offering the course: Community Medicine Dep.
5. Academic year: First Part
6. Date of specification approval: Faculty council No. "317", decree No. "1533" dated 17/12/2018

A. Basic Information

Title: Course Specification of research methodology in MD degree for Anesthesia and Surgical Intensive Care

Code:COM0501-300

Title	Lecture	Practical	Total	credit
Research Methods	**30**	**30**	**60**	**3**

B. Professional Information

1. Overall Aims of Course

- To influence the students to adopt an analytical thinking for evidence based medicine
- To use precisely the research methodology in researches

2. Intended Learning Outcomes of Courses (ILOs)

a) Knowledge and understanding:

By the end of the course, the student is expected to be able to:

a1. Define the recent advances of screening tests pertinent to selected diseases and the at-risk approach in the application of screening tests.

a2. Explain the usefulness of screening tests, and calculate sensitivity, specificity, and predictive values.

a3. Describe the study design, uses, and limitations.

a4. Describe the recent advances of principles, methodologies, tools and ethics of scientific research.

a5. Explain the strategies and design of researches.

a6. Describe bias and confounding.

a7. Describe sampling techniques and list advantages of sampling

a8. Identify principles of evidence based medicine.

b) Intellectual Skills

By the end of the course, the student is expected to be able to:

b1. Conduct research studies that adds to knowledge.

b2. Formulate scientific papers in the field of Anesthesia and Surgical Intensive Care

b3. Innovate and create researches to find solutions to prevalent problems in the field of **Anesthesia and Surgical Intensive Care**

b4. Criticize researches related to the field of **Anesthesia and Surgical Intensive Care**

c) Professional and Practical Skills:

By the end of the course, the student is expected to be able to:

c1. Master the basic and modern professional skills in conducting researches in the field of **Anesthesia and Surgical Intensive Care**

c2. Design new methods, tools and ways of conducting researches.

d) General and Transferable Skills:

By the end of the course, the student is expected to be able to:

d1. Use of different sources for information and knowledge to serve research.

d2. Work coherently and successfully as a part of a team and team's leadership in conducting researches and field studies.

3. Contents

Topic	No. of hours	Lecture	Tutorial/ Practical
Details of epidemiological studies (case control, cohort and cross sectional)	8	4	4
Clinical trials, Quasi experimental study	8	4	4
Bias and errors	8	4	4
Setting a hypothesis	8	4	4
Recent advances in screening	4	2	2
Evidence – based Medicine: Concept and examples Applicability **Scientific writing:** A protocol A curriculum	8	4	4
Setting an objective - Critical thinking	6	3	3
Formulation of papers	6	**3**	**3**
Total	45	30	30
Credit hours	3	2	1

4. Teaching and Learning Methods

4.1- Lectures.

4.2- Computer search assignments

5. Student Assessment Methods

Method of assessment	The assessed ILOs
5.1- Observation of attendance and absenteeism.	- General transferable skills, intellectual skills
5.2-Written Exam: -Short essay: 40% -structured questions: 25% -MCQs: 20% -Commentary, Problem solving: 15%	 - Knowledge - Knowledge - Knowledge, intellectual skills - Intellectual skills, General transferable skills,
5.3-Structured Oral Exam	- Intellectual skills, Knowledge, General transferable skills
5.4Computer search assignment	-General transferable skills, intellectual skills

Assessment Schedule

Assessment 1Final written exam Week: 24
Assessment 2Final Structured Oral Exam Week: 24
Assessment 3 Attendance and absenteeism throughout the course
Assessment 4 Computer search assignment performance throughout the course

Weighting of Assessments

Final-term written examination	50	%
Final Structured Oral Exam	50	%
Total	100	%

Any formative only assessments Attendance and absenteeism throughout the course
Computer search assignment performance throughout the course

6. List of References

6.1- Essential Books (Text Books)

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1-ADEQUATE INFRASTRUCTURE: including teaching places (teaching class, teaching halls, teaching laboratory), comfortable desks, good source of aeration, bathrooms, good illumination, and safety & security tools.
2- TEACHING TOOLS: including screens, computers including cd (rw), data shows, projectors, flip charts, white boards, video player, digital video camera, scanner, copier, color and laser printers.

Course Coordinator: Dr/ Foad Metry Atya

Head of Department: Prof/ Ahmed Fathy Hamed

Date: 18/12/2011, Revised:1/9/2012, Revised:1/12/2013, Revised:1/12/2018

Course Specification of Primary Medical Report for MD degree in Anesthesia and Surgical Intensive Care

Sohag University Faculty of Medicine

1. Program(s) on which the course is given: MD degree in Anesthesia and Surgical Intensive Care
2. Major or Minor element of the program: Minor
3. Department offering the course: Dept. of Forensic Medicine &Clinical Toxicology
4. Department offering the program: Anesthesia and Surgical Intensive Care
5. Academic year / Level: 1st part of Doctoral degree
6. Date of specification approval: Faculty council No. "317", decree No. "1533" dated 17/12/2018.

A- Basic Information

Title: Course Specification of Primary Medical Report in MD degree for Anesthesia and Surgical Intensive Care
Code:FOR0501-300

Title	Lecture	Practical	Total	Credit
Primary Medical Report	**15**	**30**	**45**	**3**

B- Professional Information

1. Overall Aims of Course

1. Provide basic knowledge of medicolegal aspects of different types of general and special types of wounds
2. Provide basic knowledge of different medicolegal aspects of medical practice.
3. Provide basic knowledge of medical ethics and malpractice.
4. Describe the theories and principles that govern ethical decision-making, especially of the major ethical dilemmas in medicine.

2. Intended Learning Outcomes of Courses (ILOs)

a) Knowledge and understanding:

By the end of the course, the student is expected to be able to:

a1. Mention principles and tools to write medical reports
a2. Define different types of wounds
a3. Identification of firearms injuries
a4. Describe medicolegal aspect of professional practice

b) Intellectual Skills

By the end of the course, the student is expected to be allowed to:

b1. Interpret data to write medical reports efficiently

c) Professional and Practical Skills:

By the end of the course, the student is expected to practice the following:

c1.Write and evaluate medical reports

d) General and Transferable Skills:

By the end of the course, the student is expected to be able to:

d1. Teach others how to write medical report

3. Contents

Topic	No. of hours	Lecture	Practical
The pathology of wounds, chest and abdominal injuries, self inflicted injury	6	٢	٤
The systemic effect of trauma& Permanent infirmity	3	1	2
Head and spinal injuries	٦	٢	٤
The medicolegal aspects of firearm injuries	3	1	2
Burn and scold	٣	1	2
How to write a medicolegal report& How to write death certificate	٣	1	٢
The medicolegal aspect of deaths associated with surgical procedures and toxicological sampling	٦	٢	4
Obligation of physicians (towards patients, colleagues, community)	3	١	2
Consent, and professional secrecy	٣	١	2
Types of malpractice, and items of medical responsibility	٣	١	2
Medicolegal aspects of organ transplantation, intersex states, euthanasia, assisted reproduction techniques	3	١	2
ethical considerations of medical research involving human subjects	3	١	2
Total hours	**٤٥**	**15**	**٣٠**
Credit	**3**	**١**	**٢**

4. Teaching and Learning Methods

4.1- Lectures

5. Student Assessment Methods

Method of assessment	The assessed ILOs
5.1- Observation of attendance and absenteeism.	- General transferable skills, intellectual skills
5.2-Written Exam: -Short essay: 40% -structured questions: 25% -MCQs: 20% -Commentary, Problem solving: 15%	 - Knowledge - Knowledge - Knowledge, intellectual skills - Intellectual skills, General transferable skills,
5.3-Structured Oral Exam	- Knowledge, Intellectual skills, General transferable skills

Assessment Schedule

Assessment 1: Final written exam 24 week
Assessment 2; Final Structured Oral Exam 24 week

Weighting of Assessments

Final- term written Examination	70%
Structured Oral Exam.	30%
Total:	100%

6. List of References

Essential books

Simpson's Forensic Medicine, 13th Edition, by Jason Payne-James, RichardJones,Steven B Karch,John Manlove. published by Hodder& Stoughton Ltd (2011).

Goldfrank'sToxicologic Emergencies, (9th ed.) by Lewis S. Nelson, Robert S. Hoffman, Mary Ann Howland, Neal A Lewin, Lewis R. Goldfrank, Neal E. Flomenbaum. Published by McGraw-Hill (2011)

Emergency Toxicology,Peter Viccellio,(2nded.) Published by Lippincott Williams & Wilkins (1998)

Recommended books

Medical ethics.(1997)Robert M Veatch. 2nd edition.Jones & Bartlett publishers

Periodicals and websites……etc.

Egyptian journals of forensic medicine and clinical toxicology
International journals of forensic medicine and clinical toxicology
www.sciencedirect.com
https://emedicine.medscape.com
https://www.ncbi.nlm.nih.gov/pmc/

7. Facilities Required for Teaching and Learning:

- Adequate conditioned space for staff and assistants.
- Adequate conditioned teaching facilities.
- Audiovisual Aids: Data show, overhead and slide projectors and their requirements
- Appropriate teaching accommodation, including museums, laboratory equipments and teaching aids (photographs, jars contain soft tissue specimens, bones, firearm cartridges and some instruments used in causing wounds).

Course Coordinator: Dr. Soheir Ali Mohamed

Head of Department: Dr. Soheir Ali Mohamed

Date: 18/12/2011, Revised:1/9/2012, Revised:1/12/2013, Revised:1/12/2018

Course Specification of Biophysics and Clinical Measurements For MD degree in Anesthesia and Surgical Intensive Care

Sohag University **Faculty of Medicine**

1. Program in which the course is given: MD degree in Anesthesia and Surgical Intensive Care
2. Major or Minor element of the program: Minor
3. Department offering the program: Anesthesia and Surgical Intensive Care
4. Department offering the course: Anesthesia and Surgical Intensive Care
5. Academic year / Level :First Part
6. Date of specification approval: Faculty council No. "317", decree No. "1533" dated 17/12/2018

A. **Basic Information**

Title: Biophysics and Clinical Measurements for MD degree in Anesthesia and Surgical Intensive Care

Code: ANE0501-300

Title	lecture	practical	Total	Credit
Biophysics and Clinical Measurements	**90**	**--**	**90**	**6**

B. Professional Information

1. Overall Aims of Course

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

1. Demonstration of knowledge of application of the principles and knowledge of the medical sciences in the field of physics.
2. Demonstrate an understanding of the principles of physics.
3. Describe the principles that govern monitoring devices.

2. Intended Learning Outcomes of Course (ILOs):

According to the intended goals of the faculty

a) Knowledge and Understanding:

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

a1. Describe definition of the heat; ambient, latent, clinical application, transfer of heat

a2. Demonstrate laws of gases; Boyle's, Charle's, Lussac, Dalton, Kelvin scale, equation of state of perfect gas.

a3. Explain liquefaction of gases; critical temp, critical pressure, physical properties of gases, clinical application of gas cylinder.

a4. Demonstrate solubility of gases in liquids; factor affecting solubility, solubility coefficient, blood/gas partition coefficient.

a5. Define diffusion of gases; physical factors affecting diffusion, Bulk flow, factors affecting diffusion of gases across pulm membrane

a6. Mention and explain flow of fluid through uniform tube, through tubes of variable diameters and through orifice.
a7. Illustrate properties of gases, liquid& vapor; density, specific gravity, viscosity, humidity, surface tension, osmotic pressure & clinical application.
a8. Describe Vaporization & vaporizer; properties of vapor, vapor pressure curve, types of vaporizers, factor affecting design, calibrations, factor affecting performance.
a9. Explain humidifier; types, advantages, mechanism, complication.
a10. Illustrate mechanical ventilators; types, criteria, ventilation – perfusion disturbance.
a11. Illustrate pressure reducing valves; types, advantages, physical principles.
a12. Mention and explain fires & explosion; prevention, source, ignitable anesthetics.
a13. Demonstrate nuclear physics and ionizing radiation; atomic structure, radioactivity, measurement of radiation.
a14. Mention and explain measuring system; sensor, processor, recorder, unit of measurement.
a15. Define derived mechanical units; measurement of pressure, temp, humidity, volume, blood loss, measurement of flow, blood flow, gas flow, blood pressure, CVP, PAWP.
a16. Illustrate analysis of gas mixture acid-base state; measurement of O2 tension, co2 tension, PH, acid-base evaluation.
a17. Mention and explain monitoring of cardiovascular system; arterial blood pressure, ECG, central venous catheterization, pulm art catheter, cardiac output.
a18. Explain monitoring of respiratory system; precordial & esophageal stethoscope, pulse oximetry, capnography, anesthetic gas analysis.
a19. Mention monitoring of CNS; electroencephalography, evoked potentials.
a20. Mention muscular monitoring; peripheral nerve stimulator.

b) Intellectual Skills:

By the end of the course the student should have the ability to:

b1. Correlate between the state of the anesthetized patient and the parameters that observed.
b2. Integrate the effect of calibrated equipments on the patient.
b3. Identify the problem implied on the patient due non calibrated equipment.
b4. Interpret the principles & laws that govern anesthesia**.**

c) Professional and Practical Skills:

By the end of the course the student should have the ability 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.Monitoring of the patient

d) General and Transferable Skills:

By the end of the course the student should have the ability to:

d1. Communicate with each others and interact effectively with patients using the propitiate anesthetic sets, then write a report about the result of calibrations, integrity of these sets and complications and r discuss with staff members.

d2. Present orally plan for test the anesthetic equipments in accordance with the standard scientific guidelines in seminars or group meetings, discuss results, and defend his /her ideas with staff members. Students can recognize and accept the limitations in their knowledge and clinical skills.

d3. Manipulate computer programs, do web search, to write an essay about patient with certain problems due anesthetic equipments and with trial of solving.

d4. Work together to check anesthetic equipments integrity and discuss their point of view.

3. Contents

Topic	No. of hours	Lecture	Tutorial/Practical
Heat	8	8	
Laws of gases	7	7	
Liquefaction of gases	5	5	
Solubility of gases	7	7	
Diffusion of gases	5	5	
Flow of fluids	7	7	
Properties of gases, liquid& vapour	5	5	
Vaporization & vaporizer	7	7	
Humidifier	7	7	
Mechanical ventilators	5	5	
Pressure reducing valves	7	7	
Fires & explosion	5	5	
Nuclear physics	5	5	
Analysis of gas mixture	5	5	
Monitoring of the patient	5	5	
Total	**90**	**90**	
Credit	**6**	**6**	

4. Teaching and learning methods

4.1- Lectures.

4.2- Practical sessions.

4.3- Operative theater work.

4.4- Application of anesthetic plan under observation.

5. Students Assessment Methods

Method of assessment	The assessed ILOs
5.1- Observation of attendance and absenteeism.	- General transferable skills, intellectual skills
5.2-Written Exam: -Short essay: 40% -structured questions: 25% -MCQs: 20% -Commentary, Problem solving: 15%	 - Knowledge - Knowledge - Knowledge, intellectual skills - Intellectual skills, General transferable skills,
5.3-Structured Oral Exam	- Knowledge, Intellectual skills, General transferable skills

Assessment Schedule

Assessment 1: Final written exam.

Assessment2; Final Structured Oral Exam.

Weighting of assessment

Final written exam	50%
Final Structured Oral Exam	50%
Total	100%

6. List of References

1. Essential Books:
   Morgan G.E, Mikhail M and Murry M., (2011): Clinical anesthesiology, 6th edition, McGraw-Hill Companies, UK, and USA.
2. Recommended Books:
   Miller R.D., Cucchiara RF et al, (2015): Anesthesia, 8th edition.
3. Periodicals and websites:
   British Journal of Anesthesia, Anesth. Analg journal, Anesthesiology journal, Acta anaesthesiol Scand, Eur journal Anaesethesiol.

   www.sciencedirect.com
   www.sciencedirect.com

4. Facilities required for teaching and learning

7.1- Facilities for field work: Operative List, ICU work.

7.2- Computers with net connection.

7.3- Data Show and overhead projectors.

Course Coordinator: Dr. Islam Mokhtar Ahmed

Head of Department: Prof. Dr. Ahmed Al-Saeed

Date: 18/12/2011, Revised:1/9/2012, Revised:1/12/2013, Revised:1/12/2018

Course Specifications of Anesthesia & Surgical intensive care
For MD degree in Anesthesia and Surgical Intensive Care

Sohag University **Faculty of Medicine**

1. Program (s) on which the course is given: M.D.
2. Major or minor element of programs: Major
3. Department offering the program: Dept. of Anesthesia & surgical care unit.
4. Dept offering the course: Dept. of Anesthesia & surgical care unit.
5. Academic year / Level: 2nd Part
6. Date of specification approval: Faculty council No. "317", decree No. "1533" dated 17/12/2018

A. Basic Information

Title: Anesthesia & Surgical intensive care For MD degree in Anesthesia and Surgical Intensive Care

Code: ANE0501-300

Title	lecture	Clinical	Total	Credit
Anesthesia & Surgical intensive care	420 hours	750 hours	1170 hours.	53

B. Professional Information

1. **Overall aims**
   1. Demonstration of knowledge of application of the principles and knowledge of the medical sciences in the field of Anesthesia
   2. Demonstration of knowledge of anesthesia.
   3. Demonstrate an understanding of the principles and practice of anesthesia.
   4. Demonstrate the steps used for patient evaluation.
   5. Describe the principles that govern taking decision for the suitable type of anesthesia for the patient.
   6. Demonstration of types, mechanism of actions, effect, clinical uses, complication and drug interaction of anesthetic drugs.
   7. Describe the threats to anesthesiologist, and common medical errors, which can occur during this practice of medicine.
   8. Early, detection, and management of any complication.

2. Intended Learning Outcomes (ILOs)

a) **Knowledge & Understanding**

By the end of the course, students should he able to:

a1. Describe principles and the types of anesthetics.

a2. Demonstrate how to evaluate the patient and define the suitable type of anesthesia and describe the principles for CPR Anesthesia Course Specifications 2008-2009

a3. Demonstrate how to diagnose proper preoperative patient evaluation, ASA (American society of anaesthiologists) physical status, and correlation with the surgery and if it is elective or emergency surgery.
a4. Mention and explain pre anesthetic medications and illustrate the suitable drugs and their specific effect to decrease the risk of aspiration, decrease anxiety, and decrease the stress during intubation.
a5. Define the patient monitoring; cerebral monitoring, hemodynamic as non invasive & invasive arterial blood pressure monitoring, CVP measuring.
a6. Mention the breathing system, component of Mapelson circuits, classifications, its performance characteristics. Circle system component, optimization of its design, and character of resuscitation system.
a7. Illustrate the essential features of anesthesia machine, purpose, and problem associated with anesthesia ventilator and how to manage.
a8. Demonstrate knowledge of airway management, define the use, advantages and disadvantages of face mask, nasal airway, oral airway., How to manage difficult air way & its causes. Illustrate the importance of endo-tracheal tube and explain proper tube location.
a9. Mention types of Inhalational anesthetics and illustrate the factors affecting alveolar concentration, factors affecting recovery. Mention the potent inhalational anesthetics (Isoflurane, Desflurane, Sevoflurane, Enflurane and Halothane), describe their mechanism, MAC, effect and toxicity. Illustrate the advantages of Sevoflurane over other inhalational agents.
a10. Define the types of nonvolatile anesthetics; explain properties of the ideal intravenous anesthetic agents, and classification of IV Anesthetics. Explain and define mechanism of action, Effects and Adverse effects of intravenous anesthetic (Barbiturates e.g. Thiopental, Ketamine, Propofol, etomidate, benzodiazepines); on CNS, cardiovascular system, skeletal muscle, respiratory system, and Hepatorenal function.
a11. Explain and define types, classification of muscle relaxants, mechanism of action, reversal of block, pharmacodynamics & pharmacokinetics.
a12. Explain the types of cholinesterase inhibitors, mechanism of action, muscarinic effect of cholinesterase inhibitors, Use of neostigmine to reverse the neuromuscular blockers. The role of anticholinergic drugs.
a13. Explain the adrenoceptor physiology, receptor selectivity of the adrenergic agonist and antagonist, effect of adrenergic agonists on organ systems, clinical consideration and uses of each drug.
a14. Define the hypotensive agents effect on different body systems. Demonstrate the controlled hypotension, role of these drugs to achieve the hypotension contraindication, complications.
a15. Define local anesthetics, their classification, structural relationship, physiochemical proprieties, effect on different body systems, and explain the risk of unintentional I.V. injection of bupivacaine, local anesthetic overdose.
a16. Describe the principles of regional Anesthesia and explain the advantages of regional anesthesia versus general anesthesia. Mention the methods of regional Anesthesia. Difference between spinal, epidural and caudal. peripheral nerve blocks.
a17. Illustrate the cardiac cycle, determination of ventricular performance, assessment of the ventricular function, coronary perfusion, patho-physiology of heart failure.

a18. Illustrate the cardiac risk factors, clinical predictors of peri-operative cardiovascular risk. Perioperative management of hypertension, ischemia, CHF, valvular disease.
a19. Define the cardiopulmonary bypass. Illustrate the basic circuit, anesthetic management for cardiopulmonary bypass, pericardial diseases; tamponade, constrictive pericarditis.
a20. Define the basic mechanism of breathing, effect of spontaneous & mechanical ventilation, mechanics of ventilation, effect of anesthesia on pulmonary mechanics, ventilation–perfusion ship, and effect of anesthesia on gas exchange.
a21. Illustrate the impact of anesthesia for patient with respiratory disease e.g. obstructive and restrictive pulmonary disease, pulmonary risk factor, changes with laparoscopic surgery.
a22. Define the anesthesia for thoracic surgery, effect of posture on lung mechanics. Illustrate one long ventilation, anesthetic management for lung resection, cyst, abscess, broncho-pleural fistula, bronchoscopy, esophageal surgery.
a23. Mention neurophysiology; regulation of the cerebral blood flow, CSF, intracranial pressure, effect of the anesthetic agent on cerebral physiology & cerebral monitoring. Brain protection strategy.
a24. Mention the anesthetic management for craniotomy, post fossa tumors, head trauma, spine surgery.
a25. Illustrate anesthesia for patient with neurologic and psychiatric disease, cerebrovascular disease, seizures, Parkinsonism, patient with antidepressant and electroconvulsive therapy.
a26. Mention etiology of electrolyte disturbance (e.g. hyper &hyponatremia, hyper & hypokalemia…), how to diagnose it and anesthetic management.
a27. Mention the fluid management, evaluation of intravascular volume, perioperative fluid therapy and blood transfusion.
a28. Illustrate anesthesia for patient with blood disease (e.g. thalassemia, sickle cell anemia…).
a29. Mention physiology of acid –base balance, its compensatory mechanisms, types, disorders, diagnosis and anesthetic consideration.
a30. Illustrate renal physiology and effect of anesthesia on the renal function. Anesthetic management of patient with renal disease, TURP syndrome.
a31. Illustrate hepatic physiology and effect of anesthesia on the hepatic function. Anesthetic management of patient with liver disease & coagulopathy.
a32. Illustrate anesthesia for patient with endocrine disease; Diabetes mellitus, hypo & hyperthyroidism, parathyroid disorders, adrenal gland disorders, and anesthetic management of obesity.
a33. Illustrate anesthesia for patient with neuromuscular disease; myasthenia gravis, myathenic syndrome, muscular dystrophies, and myotonia.
a34. Define anesthesia for Ophthalmic surgery, effect of anesthetic agent on the intraocular pressure.
a35. Define anesthesia for Otorhinolaryngology surgery, Anesthetic management for endoscopy, sinus surgery, ear surgery and head and cancer surgery.

a36. Define anesthesia for orthopedic surgery, hip surgery, knee surgery. Illustrate special consideration to bone cement, pneumatic tourniquet, fat embolism syndrome, deep venous thrombosis and upper extremity surgery.
a37. Define the management of the trauma patient; initial assessment, anesthetic considerations; head, spinal cord, chest, abdominal, extremity trauma and burn patient.
a38. Define maternal physiology during pregnancy and the placental transfer of anesthetic agents, their effect on utero-placental transfer
a39. Define the anesthetic risk in obstetric patient, anesthesia for labor, vaginal deliveries, anesthesia for cesarean section and complicated pregnancy. Anesthetic management of pregnancy induced hypertension and pregnancy with medical or surgical diseases.
a40. Define pediatric anesthetic techniques, anesthetic risk, anatomic and physiological development and effect of anesthetics, pathophysiology & anesthetic considerations in specific pediatric disorders; prematurity, intestinal malrotation, congenital diaphragmatic hernia, hypertrophic pyloric stenosis, foreign body aspiration, tonsillectomy and malignant hyperthermia.
a41. Define geriatric anesthesia. Age related anatomic, physiologic, pharmacologic changes and common disease.
a42. Mention anesthetic Complications; factors associated with human errors and equipment misuse, Complications related to position, common documentation pitfalls, occupational hazards.
a43. Demonstrate knowledge of Cardiopulmonary Resuscitation (CPR), define the causes of cardio respiratory arrest. Recognition of patients at risk; Illustrate BASIC LIFE SUPPORT, Universal ALS Algorithm.
a44. Define the principles of management in ICU; brain death, respiratory care, gas therapy, mechanical ventilation, respiratory failure, acute myocardial infarction, acute renal failure, panceriatitis, shock, nutritional support.
a45. Describe the principles and fundamentals of quality assurance of professional practice in the field of Anesthesia and Surgical intensive care
a46. Mention the effect of professional practice on the environment and the methods of environmental development and maintenance.

b) Intellectual Skills

By the end of the course, students should he 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. Integrate the effect of anesthetic on the patient intraoperatively and postoperatively.
b3. Idenify the anesthetic problem implied if the patient medically diseased.
b4. Interpret the advantages and disadvantages of different types of anesthesia.

c) Practical and Professional Skills

By the end of the course, students should be able to;
c1. Evaluate patient fitness.
c2. Define the appropriate pre anesthetic medication.
c3. Perform air management, difficult intubation efficiently.
c4. Insertion of IV, arterial line and CVP efficiently.
c5. Perform Regional anesthesia (e.g. Spinal, Epidural, Local intravenous anesthesia, preph nerve blocks).

c6. Perform cardiopulmonary resuscitation.

c7. ICU management.

d) General and Transferable Skills

By the end of the course, students should he able to:

d1. Communicate with each others and interact effectively with patients prepared for surgery for proper evaluation then write a report about the case or discuss with staff members.

d2. Present orally anesthetic plan for the patient in accordance with the standard scientific guidelines in seminars or group meetings, discuss results, defend his/her ideas with staff members. Students can recognize and accept the limitations in their knowledge and clinical skills.

d3. Manipulate computer programs, do web search, to write an essay about patient with medical problems should be prepared for surgery, with trial of solving.

d4. Work together to perform CPR

3. Contents of the course

Topic	No. of hours	Lecture	Practical
Preoperative patient evaluation	15	6	٩
Pre-anesthetic medications	17	٨	٩
Patient Monitoring	18	8	١٠
Breathing Systems	18	8	١٠
Anesthesia machine	20	10	١٠
Airway management	22	10	١٢
Inhalational anesthetics	19	9	١٠
Non volatile anesthetics	19	9	١٠
Muscle Relaxant	18	8	١٠
Cholinesterase Inhibitors	18	8	١٠
Anticholinergic drugs.	18	8	١٠
Adrenergic Agonists & Antagonists.	18	8	١٠
Hypotensive agents	18	8	١٠
Local anesthetics	18	8	١٠
Regional anesthetics	24	12	١٢
Cardiovascular physiology and anesthesia.	24	12	١٢
Anesthesia for patient with cardiovascular disease.	24	12	١٢
Anesthesia for cardiovascular surgery.	24	12	١٢
Respiratory physiology and anesthesia.	24	12	١٢
Anesthesia for patient with respiratory disease.	20	8	12
Anesthesia for Thoracic surgery.	21	9	١٢
Neurophysiology and anesthesia.	١٩	9	١٠

Anesthesia for Neurosurgery.	١٩	9	١٠
Anesthesia for patient with Neurologic and Psychiatric disease.	١٦	6	١٠
Fluid management & Transfusion.	١٩	9	١٠
Management of patient with electrolyte disturbance.	١٩	9	١٠
Acid-Base Balance.	١٩	9	١٠
Renal physiology and anesthesia.	١٩	9	١٠
Anesthesia for patient with Renal disease.	١٩	9	١٠
Anesthesia for Genitourinary surgery.	١٩	9	١٠
Hepatic physiology and anesthesia.	19	10	٩
Anesthesia for patient with liver disease.	18	9	٩
Anesthesia for patient with Endocrine disease.	15	6	٩
Anesthesia for patient with Neuro muscular disease.	15	6	٩
Anesthesia for Ophthalmic surgery.	15	6	٩
Anesthesia for Otorhinolaryngologicl surgery.	18	٩	٩
Anesthesia for Orthopedic surgery.	18	٩	٩
Anesthesia for the Trauma Patient.	19	٩	١٠
Maternal & Fetal physiology and anesthesia	21	١٢	٩
Obstetric Anesthesia.	19	٩	١٠
Pediatric Anesthesia.	18	٩	٩
Geriatric Anesthesia.	17	٨	٩
Outpatient Anesthesia.	17	٨	٩
Anesthetic Complications.	18	٩	٩
Cardiopulmonary Resuscitation.	19	٩	١٠
Pain Management.	25	١٦	٩
Post anesthesia care.	24	١٥	٩
Critical Care.	30	٢٠	١٠
Total	1170	٤٢٠	٤٥٠
Credit	53	28	15

4. Teaching and learning methods

4.1- Grand rounds

4.2- Training courses.

4.3- Conference attendance

4.4- Thesis discussion & lectures

4.5- Workshops.

4.6- Journal club.

4.7- Case presentation.

4.8- Seminars.

4.9- Morbidity and Mortality conference.

4.10- Self education program

5. Students Assessment Methods

Method of assessment	The assessed ILOs
5.1- Observation of attendance and absenteeism.	- General transferable skills, intellectual skills
5.2- Log book	- General transferable skills
5.3-Written Exam: -Short essay: 40% -structured questions: 25% -MCQs: 20% -Commentary, Problem solving: 15%	 - Knowledge - Knowledge - Knowledge, intellectual skills - Intellectual skills, General transferable skills,
5.4-Structured Oral Exam	- Knowledge, Intellectual skills, General transferable skills
5.5-OSCE	-Practical skills, intellectual skills General transferable skills

Assessment Schedule

Assessment 1 Assignment	Week: 30-31
Assessment 2 Written exam	Week: 96
Assessment 3 OSCE	Week: 96
Assessment 4 Structured Oral Exam	Week: 120-122

Weighting of Assessments

- Final Written Examination. Separate exam.

Passing in the written exam is a condition to attend the following exams:

- Structured Oral Exam. 50 %
- OSCE 50 %

Total 100%

Formative only assessment: single research assignment, log book, attendance and absenteeism

6. List of References

1. Essential Books:
   Morgan G.E, Mikhail M and Murry M., (2011): Clinical anesthesiology, 6th edition, McGraw-Hill Companies, UK, and USA.
2. Recommended Books:
   Miller R.D., Cucchiara RF et al, (2015): Anesthesia, 8th edition.
3. Periodicals and websites:
   British Journal of Anesthesia, Anesth. Analg journal, Anesthesiology journal, Acta anaesthesiol Scand, Eur journal Anaesethesiol.
   www.sciencedirect.com
   www.sciencedirect.com

4. Facilities required for teaching and learning

7.1- Appropriate teaching aids (photographs, anesthetic drug ampoules or vials, laryngoscope, mask, oral &nasal airway, endotracheal tube, ampu bag, Laryngeal airway, double lumen tube ,canula, different fluid solutions, spinal & epidural needle, monitors, anesthesia machine, ventilators, syringe pump, PCA set).

7.2- Facilities for field work: Operative List, ICU work.

7.3- Computers with net connection.

7.4- Data Show and overhead projectors.

Course Coordinator: Dr. Islam Mokhtar Ahmed

Head of Department: Prof. Dr. Ahmed Al-Saeed

Date: 18/12/2011, Revised:1/9/2012, Revised:1/12/2013, Revised:1/12/2018