

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 Master Degree in Medical Biochemistry

Sohag University

Faculty of Medicine

A. Basic Information

1. Program title: MSc. Degree of Medical Biochemistry
2. Program type: Multiple
3. Faculty: Faculty of Medicine
4. Departments: Medical Biochemistry Department
5. Coordinator: assistant prof. Dr. Nagwa Sayed Ahmed
6. Assistant coordinator : Dr Samer Ahmed Alsawy
7. External evaluator: - Prof. Dr: Soad Mohamed Abdel Ghany Faid
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 medical knowledge and skills essential for the practice of the specialty and necessary to gain further training and practice in the field of Medical Biochemistry through providing:

1. Recent scientific knowledge essential for the mastery of practice of Medical Biochemistry according to the international standards.
2. Skills necessary for proper applied diagnosis of some biochemical disorders.
3. Ethical principles related to the practice in this speciality.
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 post graduate:

1. Mastering the basics of scientific research methodologies.
2. The application of the analytical method and used in the field of Medical Biochemistry.
3. The application of specialized knowledge and integrate it with the relevant knowledge in practice.
4. Be aware of the problems and has modern visions in the field of Medical Biochemistry.
5. Identify problems in the field of Medical Biochemistry and find solutions to them.
6. Mastery of professional skills in this specialty and use of the appropriate recent technologies supporting these skills.
7. Communicate effectively and the ability to lead work teams.
8. Decision-making in his professional contexts.
9. To employ and preserve the available resources to achieve the highest benefit.



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8. Decision-making in his professional contexts.
9. To employ and preserve the available resources to achieve the highest benefit.

10. Awareness of his role in the community development and preservation of the environment at the lights of both international and regional variables.
11. Reflects the commitment to act with integrity and credibility, responsibility and commitment to rules of the profession.
12. Academic and professional self development and be capable of continuous learning

3. Intended learning outcomes (ILOs):

a) Knowledge and Understanding:

By the end of the study of master program in Medical Biochemistry the Graduate should be able to know and understand each of:

- a1. Describe sufficient knowledge of the biochemistry structure of the different body tissues and organs.
- a2. Describe the function of the different intermediary metabolism (anabolic and catabolic).
- a3. Illustrate sufficient knowledge of molecular biology .
- a4. Mention the biochemical importance Of hormones, vitamins, minerals and enzymes integrating in the metabolism.
- a5. Describe the biological transport and cell membrane and their biochemical, clinical and laboratory importance.
- a6. Illustrate the importance and application of clinical biochemistry in diagnosis metabolic disorders.
- a7. Explain the knowledge of biostatistics.
- a8. List the knowledge of research methods.
- a9. Enumerate Principles, methodologies, tools and ethics of scientific research.
- a10. Mention the principles and fundamentals of ethics and legal aspects of professional practice in the field of Medical Biochemistry.
- a11. Mention the scientific development in Medical Biochemistry
- a12. Mention the principles and fundamentals of quality of professional practice in the field of Medical Biochemistry
- a13. Mention the basis and ethics of scientific research.

b) Intellectual Skills:

By the end of the study of master program in Medical Biochemistry the Graduate should be able to know and understand each of:

- b1. Know Principles, methodologies, tools and ethics of scientific research.
- b2. Mention the principles and fundamentals of ethics and legal aspects of professional practice in the field of Medical Biochemistry.
- b3. Understand scientific development in Medical Biochemistry
- b4. know The principles and fundamentals of quality of professional practice in the field of Medical Biochemistry
- b5. know the basis and ethics of scientific research.

c) Professional and Practical Skills:

By the end of the study of master program in Medical Biochemistry the Graduate should be able to know and understand each of:

- c1. Master of the basic and modern professional skills in the area of Medical Biochemistry
- c2. Write and evaluate of biochemical reports.

- c3. Evaluate and develop of methods and tools existing in the area of **Medical Biochemistry**
- c4. Perform laboratory tests dealing with molecular biology.
- c5. Perform some basic experiments in the basic sciences to be utilized in the research work.
- c6. Perform some basic chemical tests to identify different sugars and proteins.
- c7. Use the electrophoresis technique to separate plasma proteins.
- c8. Recognize how DNA is extracted and be aware of further techniques using the extracted DNA.

d) General and Transferable Skills

By the end of the study of master program in Medical Biochemistry the Graduate should be able to know and understand each of:

- d1. Communication effectively by all types of effective communication.
- d2. Use information technology to serve the development of professional practice.
- d3. Assess him/her and identify learning needs.
- d4. Use different sources to obtain information and knowledge.
- d5. Develop rules and indicators for assessing the performance of others.
- d6. Work in a team, and team's leadership in various professional contexts.
- d7. Manage time efficiently.
- d8. Learn himself continuously.

4. Academic Standards:

Sohag Faculty of Medicine adopted the general National Academic Reference Standards (NARS) provided by the national authority for quality assurance and accreditation of education (NAQAAE) for postgraduate programs. This was approved by the Faculty Council decree No.6854, in its session No, 177 Dated: 18/5/2009. Based on these NARS; Academic Reference Standards (ARS) were suggested for this program. These ARS were revised by external evaluators and approved by the Faculty Council decree No.7538, 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 session No.60. Dated 26-12-2011.

5. Curriculum Structure and Contents:

- 5.a- Programme duration: 6 semester (3 years)
- 5.b- Programme structure: (total: 48 credit hours)
- 5.b.i- Number of hours:
- Number of hours:

Subject	hours /week		
	Lectures	Practical	Clinical
<u>First Part:</u> lectures & practical courses in one of the following:			
- Medical microbiology	9	8	
- Medical parasitology	9	8	-
- Clinical pathology	9	8	-
- Biostatistics& Computer and research methodology	1	2	-
<u>Second Part:</u>			
Medical Biochemistry	4.6 h/w(210)	6.6 h (300)	

First part: 12 credit hours (one semester):

-Optional courses: one of 3 courses, 9 credit hours each; 6 lectures and 3 practical

(studied in any branch of clinical pathology, or Medical parasitology or Medical microbiology over 6 months) and practical years during which the fellows).
 Second part: 25 credit hours (3 semesters); 15 lectures and 10 practical.

code	Item	No	%	
b.i	Total credit hours	Compulsory	50	100
		Elective	0	0
		Optional	0	0
b.iii	credit hours of basic sciences courses	13	26	
b.iv	credit hours of courses of social sciences and humanities	0	0	
b.v	credit hours of specialized courses:	24	48	
b.vi	credit hours of other course	2	4	
b.vii	Practical/Field Training	0	0	
b.viii	Program Levels (in credit-hours system):			
	Level 1: 1 st part	10	20	
	Level 2: 2 nd Part	24	48	
	Level 3: Thesis	6	12	

6. Program Courses

2 compulsory + 1 of 3 optional courses

6.1- Level of program:

Semester...1.....

First part:

a. Optional

Course title	Total No of credit hours	No of hours/week			Programme ILOs. covered
		Lect.	Lab.	Excer.	
Microbiology	13	9	4		a2-a5-a10-a11-a12-a13-b1-b2-c1-c3-d1-d3
Parasitology	13	9	4		a2-a5-a10-a11-a12-a13-b3-b4-c1-c3-d1-d3
Clinical pathology	13	9	4		a2-a5-a10-a11-a12-a13-b1-b2-c1-c3-d1-d3
Medical biostatistics & research methodology	2	1	1		a8,b1,b4,b5,c1,c3,d1,d2,d3, d4,d6,d7,d8

Compulsory

In addition to:

-1 credit hour in log book activities (ILOs covered are b.4-b5-d.5-d.6-d.7) .

- 6 credit hours for the Systematic Review (ILOs covered are b.4-b.5-c.1-c.2-c.5-c.6-d.1-d.2-d.5-d.6) .

Semester 3

Compulsory

Second part:

Course title	No of units	No of hours/week			Programme ILOs. covered
		Lect.	Lab.	Excer.	
biochemistry	24	4.6	6.6		a2-a5-a10-a11-a12-a13-b1-b2-b3-b4-b5-c1-c2-c3-c4-c5d1-d2-d3-d4-d6

7. Program Admission Requirements

I- General Requirements.

1. Candidate should have either:
 - A. MBBch degree from any Egyptian Faculty of Medicine or
 - B. Equivalent Degree from Medical Schools abroad approved by the ministry of high Education.
2. Candidate should pass the house office training year.
3. Those who are not university hospital residents should pass training for at least 12 months in one of the known hospitals.
4. Follow postgraduate bylaw Regulatory rules of Sohag Faculty of Medicine approved by the ministerial decree No. (44), dated 6/1/2010.

II. Specific Requirements:

- A. Candidates graduated from Egyptian Universities should have at least "Good Rank" in their final year/cumulative year's examination, and grade "Good Rank" in Medical Biochemistry course too.
- B. Candidates should know how to speak and write English well.
- C. Candidates should have computer skills.

8. Regulations for Progression and Program Completion

Duration of program is 50 credit hours (≥ 4 semesters ≥ 3 years), starting from registration till 2nd part exam; divided to:

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

- Program-related basic & clinical sciences & 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.
- At least 50% of the written exam 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 for the next time only, and if re-fail, should register for the course from the start.

Thesis/Essay (6 Credit hours ≥ 6 months=1 semester):

- Completion of the 1st part credit hours and passing the exams are pre requisites for documentation of the **Thesis/Essay** subject.
- 1. Should be completed, defended and accepted after passing the 1st part examination, and at least one month before allowing to enter 2nd part final examination.
- 2. Accepting the thesis is enough to pass this part.

Second Part: (24 Credit hours ≥ 18 months= 3 semesters):

- Program related specialized science of Medical Biochemistry Courses.
- Completion of the 1st part credit hours and passing the exams are pre requisites for documentation of the 2nd part courses.
- After passing at least:
 - Practical training: 36 months training in the department of biochemistry

- The students should pass the 1st part before asking for examination in the 2nd part.
- Fulfillment of the requirements in each course as described in the template and registered in the log book (5 Credit hours; with obtaining $\geq 75\%$ 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= 5 Cr. Hr. X 60 working Hrs = 300 Working Hrs.
 - Collection of working Hrs. is as following:

Activity		Hrs
Grand rounds	اجتماع علمي موسع	٦
Training courses	دورات تدريبية	12/ day
Conference attendance	حضور مؤتمرات علمية داخلي 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 علمي موسع	٦
Morbidity and Mortality conference	ندوة تحليل المخاطر المرضية أوالوفاة	٦
Self education program	برنامج التعليم الذاتي	٦

- Two sets of exams: 1st in October - 2nd in April.
- At least 50% of the written exam is needed to pass in each course.
- For the student to pass the 2nd part exam, a score of at least 60% (Level D) in each course is needed.

9. Methods of student assessments:

Method of assessment	weight	The assessed ILOs
1-Activities		- 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:

- Written Exam (3 hours): for one of the branches of specialization optional + Structured oral Exam + OSPE.
- Biostatistics & Computer and Research Methodology: Written Exam (2 hours) + Structured oral Exam+ OSPE

Part II:

- Medical Biochemistry: Two Written Exams (3 hours for each) + structured oral Exam + OSPE.

10. Program Evaluation:

Evaluator	Tool	Sample
1- Senior students	Questionnaire	2
2- Alumni	Questionnaire	3
3- Stakeholders (Employers)	Questionnaire	3
4-External Evaluator(s) (External Examiner(s))	Reports	1
5- Other		

Course Specifications of Clinical and Chemical Pathology for Master Degree in Medical Biochemistry

Sohag University

Faculty of Medicine

1. Program on which the course is given master degree in Medical Biochemistry
2. Major or minor element of programs: minor
3. Department offering the program: Medical Biochemistry
4. Department offering the course: Clinical and Chemical Pathology department
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 Specifications of Clinical and Chemical Pathology in master degree in Medical Biochemistry

Code: CL.P 0514 200

Total hours

Lectures	Practical	Total hours	Credit hours
135	120	255	13

B. Professional Information

1. Overall Aims of Course

By the end of the course the postgraduate student should be efficiently able to be clinical hematologist that are clever enough to make appropriate decision, manage all available hematological and haemostatic assays and set up sharp eye to explore and chase every data what ever and gather snatches to help in reaching to hidden diagnosis.

2. Intended Learning Outcomes of Course (ILOs):

a) **Knowledge and Understanding:**

By the end of the course the student is expected to:

- a1. Review their information about the physiology of blood cells (RBCs, WBCs and platelets) and homeostasis.
- a2. Review their information about the anatomy of the lymphatic and hematopoietic organs.
- a3. Mention the important causes, presentation and management of various types of anemias.
- a4. List the important causes, presentation and management of various types of leukemia and lymphomas.
- a5. Mention the causes, manifestation and management of bleeding and coagulation disorders.
- a6. Mention the recent advances in diagnosing various hematological disorders as bone marrow transplantation, immunological treatment.

b) **Intellectual Skills:**

By the end of the course the student is expected to:

- b1. To interpret lab investigations as blood picture, bone marrow examination, results of lymph node, spleen biopsy.

- b2. To interpret lab investigations tests for coagulation disorders.
 b3. Examine lymph nodes, liver and spleen and to know causes and management of lymphadenopathy, hepatomegaly, and splenomegaly.

c) Professional and Practical Skills:

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

- c1. Perform a complete hematological examination.
 c2. Perform manual CBC and differentiation and recognition of various disease hematological pictures.
 c3. Perfect different staining methods.
 c4. Perform bone marrow aspiration and its role in diagnosis for various hematological disorders.
 c5. Perform of cytochemical staining for bone marrow films.

d) General and Transferable Skills:

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

- d1. Use the computer and internet to gather scientific information.
 d2. Use data analysis and communication skills
 d3. Interpret a report containing microbiological or immunological data.
 d4. Be reliable and responsible in fulfilling obligations
 d5. Learn and teach how to perform and interpret laboratory tests

3. Contents

	No of hours	Lectures	practical hours
Topics : (90hrs)			
(1) Haemotasis :			
Platelet disorders :			
- thrombocytosis :	7	4	3
- ITP :	7	4	3
Coagulation disease :			
- haemophilia	7	4	3
- vWD:	6	3	3
- Acquired disease :	7	4	3
- thrombophilia :	7	4	3
- bleeding disase of neonates	8	4	4
(2) blood bank :			
- Component of blood and preparation.	8	4	4
- Indication of transfusion.	8	4	4
- Hazards of transfusion.	8	4	4
(3) Oncology :			
- Granulopoiesis	7	4	3
- Disorder of granulopoiesis.	7	4	3
- AML ,ALL	8	4	4
- CML ,CLL	8	4	4
- MDS	8	4	4
(4) RBCs :			
1) Hematopoiesis	8	4	4
2) Iron deficiency anemia.	8	4	4
3) Megaloblastic anemia.	8	4	4

4) Aplastic anemia	8	4	4
5) Sideroblastic anemia.	8	4	4
6) Hemolytic anemia.	8	4	4
Practical (135 hrs)			
(1) Haemotasis :			
1)screening test	8	4	4
(Hess test 2, B.T. 1hrs, TT, fibrinogen, PT, PTT and platelet count:)	4	4	
2)how to investigate a case of bleeding?	8	4	4
(2) blood bank :			
1) Blood groups.	8	4	4
2)Blood separation: manual and automated	8	4	4
(3) Oncology :			
1) WBCs morphology & count	8	4	4
2)Bone marrow aspiration	10	6	4
(4) RBCs :			
1)Normal RBCS.	8	4	4
2)Iron deficiency &Megaloblastic anemia.	10	6	4
3)Reticulocyte	8	4	4
4) O.F. test	8	4	4
5)ESR & RBCs counting.	10	6	4
Total	255	135	120
Credit	13	9	4

4. Teaching and Learning Methods

- 4.1- Lectures.
- 4.2- Department practical class and notes.
- 4.3- Practical lessons.

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
5.4-OSPE	-Practical skills, intellectual skills

Assessment Schedule

- | | | |
|------------------|----------------------|---------|
| 1- Assessment 1: | written examination | week 24 |
| 2- Assessment 2: | Structured Oral Exam | week 24 |
| 3- Assessment 3: | OSPE | week 24 |
- Assessment of attendance & absenteeism throughout the course

Weighting of Assessments

Final-term written examination	50%
Structured Oral Exam	30%
OSPE	20%
Total	100%

Formative only assessments: attendance and absenteeism

6. List of References

6.1- Essential Books (Text Books)

Essential Hematology of A. H. Hoffbrand 2006

6.2- Recommended Books

Color Atlas of Hematology of Harald Thiel. 2011

Atlas of Clinical Hematology of Douglas C. Tkachuk..2008

6.3- Periodicals, Web Sites, etc

7. Facilities required for teaching and learning

1. adequate infrastructure:
Including teaching places (teaching class, teaching halls, teaching laboratory), comfortable desks, good source of aeration bathroom good illumination and safety & security tools
2. Teaching tools: including screens computers including cd (rw), data show, projector flip chart scanners
3. Computer program for designing & evaluation MCQ

Course Coordinator: Dr. Lila M. Yousef

Head of Department: Dr/ Hasnaa A. Abo Elwafa

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

Course Specifications of Medical Parasitology for Master Degree in Medical Biochemistry

University Sohag

Faculty Medicine

1. Program on which the course is given Master degree in Medical Biochemistry
2. Major or minor element of programs: minor
3. Department offering the program: Medical Biochemistry
4. Department offering the course: Medical Parasitology
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 Specifications of Medical Parasitology in Master Degree in Biochemistry

Cod: PAR 0514-200

Total hours

Lectures	Practical	Total	Credit hours
135	120	255	3

B. Professional Information

1. Overall Aims of Course

By the end of the course the student should be able to have the professional knowledge of the parasites affecting human beings all over the world and particularly in Egypt, so to be able to professionally protect, diagnose and advice the parasite victim correctly.

2. Intended Learning Outcomes of Course (ILOs):

According to the intended goals of the faculty: the student is to be armed with sufficient knowledge about the human parasites present in his locality as well as Egypt, surrounding countries and idea to parasites allover the world. Each student should be able to recognize the symptoms, geographical distribution, the infective and the diagnostic stages, complications, laboratory tests needed for diagnosis, prescriptions used and control of the studied parasites. Chemical and biological control methods are to be studied carefully.

a) **Knowledge and Understanding:**

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

- a1. Enumerate the professional knowledge of the parasites affecting human beings all over the world and particularly in Sohag and Egypt.
- a2. Have the understanding the life cycle of each, inside and outside the body.
- a3. Enumerate the ability to differentiate between parasites on morphological bases.
- a4. Enumerate the knowledge to recognize the clinical symptoms and complications of each parasite.
- a5. Enumerate a professional knowledge of the recommended laboratory tests needed for diagnosis of each case.
- a6. Describe the knowledge about control methods used against parasites.

b) Intellectual Skills:

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

- b1. Differentiate between parasites affecting the same organ.
- b2. Differentiate between parasites present in the same sample.
- b3. Differentiate between parasites inhabiting the same geographical location.

c) Professional and Practical Skills:

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

- c1. Identify the infective and the diagnostic stages of the parasites
- c2. Identify some stages of the parasites.
- c3. Identify some of the medically important intermediate host especially those present in Egypt.
- c4. Can perform some laboratory test needed for parasitic diagnoses.

d) General and Transferable Skills:

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

- d1. Use the computer to enter parasitological web sites and self learning.
- d2. Can collect scientific data from the computer as reviews, photos, and videos.

3. Contents:

Topic	No. of hours	Lecture	Practical
Introduction	6	3	4
Helminthes Introduction+Trematoda introduction.	6	3	4
Fasciola	4	3	2
Dicrociliium+ Fasciolopsis buski	4	3	2
H. heterophyes	5	3	3
Schistosoma + Snails	7	3	5
Revision	3	1-	3
Cestoda+ D. latum	7	2	5
Taenia	5	3	3
Echinococcus+ Hymenolepis+ Dipylidium	20	3	8
Nematoda+ Eterobius+ T. trichura+ Capillaria+ T. spiralis+ Ascaris	14	5	10
Hook worms+ S.stercoralis+ Larva migrans	8	3	6
D. medenensis+ Filarial; worms	8	3	6
Revision	4	5	4
Helminthes total	78	31	52
Introduction	4	3	2
Dieptera+ Mosquitoes	6	3	4
Culicoides+ Phlebotomas	6	3	4
Brachycera	6	3	4
Myiasis & M. producing flies	6	3	4
Siphonaptera+ Hemiptera+ Anoplura	6	3	4
Arachnida introduction+ ticks	6	3	4
Mites+ Pentastomida+ Cyclops	6	3	4
Arthropods total	48	18	25
Introduction+ Amoebidae	6	3	4
Luminal flagellates	8	5	4

Haemoflagellates	20	7	4
Apicomplexa (Malaria + Babesia)	8	5	4
Apicomplexa (Toxoplasma+ others)	8	5	4
Ciliata+Microsporidia	6	5	2
Revision	2	2	2
Protozoa	42	15	20
Laboratory tests	34	21	4
Total	255	135	120
Credit	13	9	4

4. Teaching and Learning Methods

- 4.1- lectures.
- 4.2- practical lessons.
- 4.3- Assignments for the students to empower and assess the general and transferable skills.

5. Student Assessment Methods

Method of assessment	The assessed ILOs
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Weighting of Assessments

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Total	100%

1. Formative only assessments: attendance and absenteeism

6. List of References

7.1- Essential Books (Text Books)

Medical Parasitology. 2007

Essential Parasitology. 2007

Diagnostic Parasitology. 2007

6.2- Recommended Books

A coloured Atlas of tropical Medicine and Parasitology. 2007

6.3- Periodicals:

- Journal of Egyptian Society of Parasitology.

Web Sites:

Parasitic Diseases: <http://www.mic.ki.se/Diseases/c3.html>

Parasite Images: <http://www.med.cmu.ac.th/dept/parasite/image.htm>

Atlas of Medical Parasitology: <http://www.cdfound.to.it/HTML/atlas.htm>

7. Facilities Required for Teaching and Learning

1. Adequate infrastructure:
Including teaching places(teaching class, teaching halls, teaching laboratory),comfortable desks, good source of aeration bathroom good illumination and safety & security tools
2. Teaching tools: including screens computers including cd (rw), data show, projector flip chart scanners
3. Computer program for designing &evaluation MCQ

Course Coordinator: Dr .Aml Mostafa

Head of Department: Dr. Hanaa El Hadi

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

Course Specifications of Medical Microbiology & Immunology for Master In Medical Biochemistry

Sohag University

Faculty of Medicine

1. Program on which the course is given master degree in Medical Biochemistry
2. Major or minor element of programs: minor
3. Department offering the program: Medical Biochemistry
4. Department offering the course: Medical Microbiology & Immunology
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: Medical Microbiology & Immunology

Code: MIC0514-200

Total hours

Lectures	Practical	Total h	Credit hour
135	120	255	13

B. Professional Information

1. Overall Aims of Course

By the end of the course the postgraduate student should be efficiently able to have advanced knowledge of the microorganisms affecting human beings all over the world and particularly in Egypt , and learn to use the knowledge gained from applied microbiology to better understand the pathology, clinical symptoms, complications and the laboratory tests needed for diagnosis of each disease, in particular how to order specific tests in order to assist clinical practitioners on how to order and interpret lab tests . The student is also expected to acquire advanced knowledge about the structure and function of the immune system and the role of the immune system in health and disease, and how to initiate and / or implement lab results for patients

2. Intended Learning Outcomes of Course (ILOs):

a) Knowledge and Understanding:

By the end of the course the student is expected to:

- a1. List the microorganisms affecting human beings all over the world and particularly in Egypt.
- a2. Describe the metabolism and genetics of organisms.
- a3. Describe the pathology, clinical symptoms and complications of each disease.
- a4. Summarize the laboratory tests needed for diagnosis of each case.
- a5. Name the drugs and instructions used for treatment of each case.
- a6. Describe some infection control methods
- a7. Describe the structure and function of immune system
- a8. Perform basic and advanced microbiology tests in the lab
- a9. Interpret the results of tests to aid clinicians in diagnosis

b) Intellectual Skills:

By the end of the course the student is expected to:

- b1. Differentiate between the different microorganisms (Bacteria, viruses and fungi)
- b2. Differentiate between the different types of disease causing microbes
- b3. Determine the antibiotic regimen based on previous microbiological experience and laboratory tests.
- b4. Determine the involvement of the immune system in the current disease process.
- b5. Order a variety of specific tests
- b6. Interpret a wide variety of tests and cross correlate with other clinical data

c) Professional and Practical Skills:

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

- c1. Recognize micro-organisms on morphological bases.
- c2. Identify the methods of staining, culturing and biochemical reactions
- c3. Recognize some serological tests used in diagnosis.
- c4. Handling of samples.
- c5. Processing of samples.
- c6. Initiate or implement laboratory tests

d) General and Transferable Skills:

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

- d1. Use the computer and internet to gather scientific information.
- d2. Use data analysis and communication skills
- d3. Interpret a report containing microbiological or immunological data.
- d4. Be reliable and responsible in fulfilling obligations
- d5. Learn and teach how to perform and interpret laboratory tests

3. Contents

Topic	No. of hours	Lecture	Tutorial /Practical
<u>General Bacteriology</u>			
Bacterial anatomy & Physiology	5	5	2
Bacterial genetics	5	5	2
Recombinant DNA technology	5	7	2
Antibiotics	5	7	2
Sterilization & Disinfection	10	7	3
<u>Systematic Bacteriology</u>			
Gram +ve cocci	10	7	3
Gram -ve cocci	10	7	3
Gram +ve bacilli	10	7	3
Gram -ve bacilli(1)	10	7	3
<u>General virology</u>			
<u>Systematic Virology</u>			
RNA viruses	5	7	2
DNA viruses	5	7	2

<u>Immunology</u>	10	7	3
Congenital & Acquired Immunity	10	7	3
Immunological Cells	7	7	3
Hypersensitivity	8	7	3
Transplantation	8	7	3
Tumor Immunology	6	2	3
Immunodeficiency	6	2	3
<u>Mycology</u>	5		5
Fungal classifications	7	2	5
Opportunistic mycosis& Antifungal drugs	6	2	5
<u>Immunology</u>	15		5
Congenital & Acquired Immunity	6	2	5
Immunological Cells	6	2	5
Hypersensitivity	6	2	5
Transplantation	6	2	5
Tumor Immunology	6	3	5
Immunodeficiency	6	3	5
<u>Applied Microbiology</u>	6	2	5
Laboratory tests	15	1	3
Nosocomiology	10	3	2
Total	255	120	120
Credit	13	9	4

4. Teaching and Learning Methods

- 4.1- Lectures.
- 4.2- Department practical class and notes.
- 4.3- Practical lessons.

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
5.4-OSPE	-Practical skills, intellectual skills

Assessment Schedule

- | | | |
|------------------|----------------------|---------|
| 1- Assessment 1: | written examination | week 24 |
| 2- Assessment 2: | Structured Oral Exam | week 24 |
| 3- Assessment 3: | OSPE | week 24 |

Weighting of Assessments

Final-term written examination	50%
Structured Oral Exam	30%
OSPE	20%
Total	100%

Formative only assessments: attendance and absenteeism

6. List of References

6.1- Essential Books (Text Books)

Prof. Abba Elmeshad immunology, systemic bacteriology, practical books.2015
 Lippincott`s immunology, systemic bacteriology
 Jawetz Medical Microbiology.2016
 Roitt Essential Immunology.
 Abbas Clinical Immunology
 Alberts Molecular Biology

6.2- Recommended Books

-A coloured Atlas of Microbiology.
 -Topley and Wilson, Microbiology

6.3- Periodicals, Web Sites, ... etc

Journal of Clinical immunology.

<http://mic.sgmjournals.org/>

American journal of infection control
 Microbiology and Immunology on line
 www.sciencedirect.com

7. Facilities required for teaching and learning

1. Adequate infrastructure:
 Including teaching places(teaching class, teaching halls, teaching laboratory),comfortable desks. good source of aeration bathroom good illumination and safety &security tools
2. Teaching tools: including screens computers including cd (rw), data show projector flip chart scanners
3. Computer program for designing &evaluation MCQ

Course Coordinator: Dr. Ekram Abd Elrahman

Head of Department: Dr. Abeer Sheniaf

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

Course Specifications of Applied biostatistics (with computer use)and Research Methodology in Master degree of Biochemistry

Sohag University

Faculty of Medicine

1. **Program title** : Master degree in Biochemistry
2. **Major/minor element of the program** : Minor
3. **Department offering the course**: Community Medicine and public Health Dep.
4. **Department offering the program**: Medical Biochemistry
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: Master degree in Medical Biochemistry Biostatistics and Computer use for health services **and Research Methodology**

Code: COM 0504-200

Total Hours:

Title	Lectures	Practical/ surgical	Total	Credit
Applied biostatistics and computers & Research methodology	15	30	45	2

B. Professional Information

Applied Biostatistics Module:

1. Overall Aims of Course

- a. To influence the students to adopt an analytical thinking for evidence based medicine.
- b. To use precisely the research methodology in researches and computer programs SPSS, Epi Info and Excel in data analysis.

Research Methodology Module:

1. Overall Aims of Course

The aim of this course is to provide the postgraduate student with the advanced medical knowledge and skills essential for the mastery of practice of specialty and necessary to provide further training and practice in the field of Public health and Community Medicine through providing:

1. Recent scientific knowledge essential for the mastery of practice of Public Health and Community Medicine according to the international standards.
2. Skills necessary for preparing for proper diagnosis and management of community problems, skills for conducting and supervising researches on basic scientific methodology.

3. Ethical principles related to the practice in this 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. Intended Learning Outcomes of Courses (ILOs)

Applied Biostatistics Module:

a) Knowledge and understanding:

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

- a1. Mention 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. Mention how to collect and verify data from different sources
- b2. Interpret data to diagnose prevalent problems Biochemistry

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 and in management of prevalent problems in Biochemistry

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.

Research Methodology Module:

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. Mention 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 area of public health and community medicine
- b3. Innovate and create researches to find solutions to prevalent community health problems
- b4. Criticize researches related to public health and community medicine

c) Professional and Practical Skills:

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

- c1. Enumerate the basic and modern professional skills in conducting researches in the area of public health and community medicine.
- 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
Applied Biostatistics Module:			
Recent advances in collection, analysis and interpretation of data	3	1	2
-Details of Tests of significance: Proportion test	3	1	2
-Chi-square test	1.5	.5	1
-Student T test	1.5	.5	1
-Paired T test	1.5	.5	1
-Correlation	1.5	.5	1
-Regression	2	1	1
-ANOVA test	3	1	2
-Discrimination analysis	3	1	2
-Factor analysis	3	1	2
-Parametric and non parametric tests	4.5	.5	4
Research Methodology Module:			
Details of epidemiological studies (case control, cohort and cross sectional)	3	1	2
Clinical trials, Quasi experimental study	3	1	2
Bias and errors	2	1	1
Setting a hypothesis	1.5	.5	1
Recent advances in screening	1.5	.5	1

- Evidence – based Medicine: Concept and examples Applicability Scientific writing: A protocol A curriculum	3	1	2
Setting an objective - Critical thinking	2	1	1
Formulation of papers	1.5	.5	1
Total hours	45	15	30
Total Credit hours	2	1	1

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 Exams: -Short essay: 40% -structured questions: 25% -MCQs: 20% -Commentary, Problem solving: 15%	- Knowledge - Knowledge - Knowledge, intellectual skills - Intellectual skills, General transferable skills, - Practical skills, intellectual skills
5.3-Structured Oral Exams	- Knowledge
5.4Computer search assignment	- general transferable skills, intellectual skills

Assessment Schedule

- Assessment 1 ...Final written exam Week: 24
- Assessment 2Final 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 oral Examination	50%
Total	100%

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

6. List of References

Applied Biostatistics Module:

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

3- WWW. CDC and WHO sites

Research Methodology Module:

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

3- WWW. CDC and WHO sites

7. Facilities Required for Teaching and Learning:

Applied Biostatistics Module:

- Adequate conditioned space for staff and assistants.
- Adequate conditioned teaching facilities.
- Audiovisual Aids: Data show, overhead and slide projectors and their requirements.

Research Methodology Module:

- ADEQUATE INFRASTRUCTURE: including teaching places (teaching class, teaching halls, teaching laboratory), comfortable desks, good source of aeration, bathrooms, good illumination, and safety & security tools.

- **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/Rasha Abd-El Hameed

Head of Department: Dr/ Ahmed Fathy Hammed

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

Course Specifications for Master Degree in Medical Biochemistry

Sohag University

Faculty Medicine

1. Program on which the course is given: Master degree in Medical Biochemistry
2. Major or Minor element of program: Minor
3. Department offering the program (Medical Biochemistry Department)
4. Department offering the course (Medical Biochemistry Department)
5. Academic year / Level: second part
6. Date of specification approval: Faculty council No. "317", decree No. "1533" dated 17/12/2018

A. Basic Information

Title: Medical Biochemistry

Code: BIO-0514-200

Total hours

Lectures	Practical	Total	Credit h
210	300	510	24

B. Professional Information

1. Overall Aims of Course

By the end of the course the post graduate students should be able to have the professional knowledge of the biochemistry of the Orthopedic diseases, and able to diagnose any vitamin and calcium regulating hormones deficiency.

2. Intended Learning Outcomes of Course (ILOs)

a) Knowledge and Understanding:

- a1. Mention the biochemical importance of intermediary metabolism (Anabolic and catabolic)
- a2. The importance of clinical biochemistry
- a3. Explain the role of vitamin, Minerals
- a4. Mention and explain hormonal action

b) Intellectual Skills

- b1. Diagnosis the affected biochemical deficiency
- b2. Integrate basic biochemical and physiological facts with clinical data
- b3. How to diagnose early and treatment as early as possible

c) Professional and Practical Skills

- c1. To identify the biochemical defect
- c2. To perform some laboratory tests for early diagnosis.

d) General and Transferable Skills

- d1. Acquiring skills to use computer to enter biochemistry web sites and self learning.
- d2. Team working for accurate diagnosing of diseases using internet.
- d3. Ability to listen and understanding any biochemical lecture.
- d4. Utilize computers in conducting research and to Collect scientific data.
- d5. Use standard computer programs effectively (window, office programs)

3. Contents

Topics	NO. of hours	Lecture	Practical
<u>1) Biological oxidations include:</u> -General consideration. -Electron transport. -ATP-synthesis. -Translocations. -Superoxide dismutase.	30	10	20
<u>(2) Glycolysis and citric acid cycle:</u> - General consideration. -Enzyme structure and reaction mechanisms. -Regulation mechanisms and biomedical importance.	30	10	20
<u>3) Other Pathways Carbohydrate Metabolism:</u> a- Pentose –phosphate pathway and Gluconeogenesis. -General considerations -Enzyme reaction mechanisms. -Regulation mechanisms -Genetic diseases. B-Glycogen Metabolism: - General considerations - Glycogen Synthetase and phosphorylase: structure and catalytic activities. -Regulation -Genetic diseases C-Metabolism of other hexoses and biosynthesis of mucopolysaccharides	30	10	20
<u>4) Protein metabolism:</u> -General consideration -Amino acids degradation: General reaction, nitrogen disposal and ammonia disposal. -Nitrogen fixation. -One carbon metabolism. -Individual amino acids metabolism.	30	10	20
<u>5) Fat metabolism):</u> General considerations. -Fatty acid oxidation and fatty acid biosynthesis. - Enzymes and reaction mechanisms for biosynthesis of cholesterol and related derivatives, phospholipids, glycolipids and related compounds. -Eicosanoids metabolism. -Adipose tissue metabolism. -Lipid transport in plasma: Lipoproteins: assembly and degradation, biomedical	20	10	20

importance. -Genetic diseases.			
6) Integration of metabolism: - Mechanisms and regulation	20	10	20
7) Metabolism of nucleotides: -General considerations -Purin and pyrimidine biosynthesis. -Ribonucleotide reductase -thioredoxin and Glutaredoxin, Thymidylate synthase and dihydrofolate reductase -Uric acid -Genetic diseases.	20	10	20
8) Porphyrin metabolism and heme biosynthesis and catabolism	20	10	20
(9) DNA and RNA, Tissue chemistry: Eukaryotic chromosomes Gene Expression : -Nucleosome and chromatin. -Mitochondrial DNA. -DNA structure :replication and repair: -Structure. -Nucleases and ligases. -DNA topology and topoisomerases. -DNA polymerases. -Origin and direction of replication. Biochemistry of osteoarthritis	20	20	50
10)Hormones -Classification, mechanisms of actions. -Pituitary and hypothalamic hormones. -Thyroid and parathyroid hormones. -Hormones of the adrenal cortex and medulla. -Hormones of the Gonads. -Hormones of the pancreas and G.I.T tract. Biochemistry of osteoporosis	40	20	10
11)-Tumour markers.	30	20	10
12) Metabolism of xenobiotics.	40	20	10
(13) Body fluid : -Blood, urine,-semen, C.S.F, bile, gastric juice, milk.	10	10	10
(14) Minerals: (calcium. phosphate, Na, K, mg, Cu, iron, zinc, iodine, mercury, Cd, florid, lead, and others trace elements.	30	5	10
(15) Immnoglobulines	10	10	10
16) Physical chemistry	10	5	5
17)Free radicals	10	5	5
(18)Enzymes: - Kinetics - Mechanism of action - Regulation	10	5	10

(19)Vitamin: - Water soluble vitamin. - Fat soluble vitamin	20	10	10
Total	510	210	300
Credit	24	14	10

4. **Teaching and Learning Methods**

4.1- Searches in computers (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- 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-OSPE	-Practical skills, intellectual skills
5.6 Computer search assignment	-General transferable skills, intellectual skills

Assessment Schedule

1- Assessment 1:	written examination	week 96
2- Assessment 2:	Structured Oral Exam	week 96
3- Assessment 3:	OSPE	week 96

- Assessment of attendance & absenteeism throughout the course

Weighting of Assessments

Final-term written examination	50%
Structured Oral Exam	30%
Practical examination	20%
Total	100%

1. Formative only assessments: attendance and absenteeism, Log book, Computer search assignment

6. **List of References**

6.1- Essential Books (Text Books)

1. Text book of Biochemistry For Medical students 8th edition by DM Vasudevan 2016
2. Harper's illustrated Biochemistry 31 edition by victor Rodwell et al 2018

6.2- Recommended Books

1. Lectures notes on clinical biochemistry, Whitby et al 1993
2. Lippincott's illustrated reviews biochemistry, Champe, PC, Harvey, RA, 8th edition 2010

6.3- Periodicals, Web Sites, ... etc

<http://www.ncbi.nlm.gov/>
<http://www.vlib.org/>

www.genome.ad.jp/kegg/regulation.

Findarticle.com

Freemedicaljournals.com

7. Facilities Required for Teaching and Learning

1. Adequate infrastructure:
Including teaching places(teaching class, teaching halls, teaching laboratory),comfortable desks. good source of aeration bathroom good illumination and safety & security tools
2. Teaching tools: including screens computers including cd (rw), data show, projector flip chart scanners
3. Computer program for designing &evaluation MCQ

Course Coordinator: Dr. Amira Morad

Head of Department: Nagwa Sayed Ahmed Hassan

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