

Preparatory Program in Biomedical Research Studies

1700400 – Medical Research Institute

Admission Requirements: Graduate students with a. B.Sc. of any health-related national or international faculty (e.g., Faculties of : Medicine , Pharmacy, Dentistry, Nursing, veterinary, Science, Agriculture, or Engineering)

Core Courses (6 Cr): 1700401, 1700402,1700403

Elective courses (2 Cr): 1700420, 1700421, 1700422, 1700423, 1700424

Code	Name	Hours / Week		
		Theoretical	Practical	Total Cr
1700401	statistics and Computer in biomedical research	1	2	2
1700402	Basics of biomedical research and ethics	2	-	2
1700403	Basics of animal experiments	2	-	2
		5	2	6
Elective courses (2Cr)				
1700420	Basics of laboratory techniques	1	2	2
1700421	Basics of nano medicine	2	-	2
1700422	Basics of patient safety	2	-	2
1700423	Evidence based medicine	2	-	2
1700424	Basics of molecular bioscience	1	2	2

1700401 statistics and Computer in biomedical research

Hour/Week

Theoretical	Practical	Total Cr
1	2	2

The course is designed to make the student able to:

Identify different types of variables and basic statistical tests. Choose the appropriate method for data presentations and measure of central tendency and dispersion for description of data. Interpret different graphics and compare means between 2 groups. Plot appropriate graphs for different data types .

understand basics of the computer science, its programs and word processing with microsoft word. Working with spreadsheets-Microsoft Excel. Creating slide presentation-Microsoft Power Point, Working with databases- Microsoft Access and creating graphic animations

1700402 Basics of biomedical research and ethics

Hour/Week

Theoretical	Practical	Total Cr
2	-	2

The course is designed to make the student able to:

Describe different research designs and demonstrate how to formulate a research question. Calculate appropriate sample size in different studies. Apply different research designs on different researches and write a research protocol.

Define medical ethics, Discuss practical issues of medical ethics such as patients' consent and medical negligence. Explain ethics of research on human and animals and recognize the basic ethical conflicts which arise in the practice of modern medicine including stem cell research, cloning, and genetic research. Develop skills of critical analysis and solving of ethical problems in medicine, research and health care. Apply ethical principles to deal with ethical issues in a systematic manner

1700403 Basics of animal experiments

Theoretical	Practical	Total Cr
2	-	2

A sound knowledge of the course aims to provide the student with basic facts and principles essential for animals experiments and for the quality of research and the task of preparing a protocol for an animal experiment. The protocol should include different factors that must be taken into consideration when designing an animal experiment, such as animal species/strain, the origin of the animals, the number needed in test and control groups, the conditions of the animals (solitary or group housing), the environmental conditions, whether or not disease is needed, and the methods of anesthesia or euthanasia (if required).

1702420 Basics of laboratory techniques

Hour/Week

Theoretical	Practical	Total Cr
1	2	2

The course should cover the basic structure and organization of each laboratory , safety measures, methods of sterilization, and a brief summary of all the equipments and chemicals used. The course should also provide practical experience of the routine and research work done in the laboratory along with the proper analysis and documentation of the data gained

1700421 Basics of nano medicine

Hour/Week

Theoretical	Practical	Total Cr
2	-	2

Introduction, what is nanotechnology, nanomaterials and nanodevices, properties of nanomaterials, different types of nanoparticles and its application in nonmedicine (Liposomes, Polymeric nanoparticles, Dendrimers, Fullerenes, Quantum dots, Metal nanoparticles)

1700422 Basics of patient safety

Hour/Week

Theoretical	Practical	Total Cr
2	-	2

Introduction to patient safety, adverse events and medical errors, medication errors, medical equipment failure, patient safety team, safety awareness for patients and staff, patient safety programs, Auditing for patient safety , Improving patients safety, safe injection practice, infection control measures, safe surgical procedures, safe radio imaging procedures and prevention of patients fall.

1702423 Evidence based medicine**Hour/Week**

Theoretical	Practical	Total Cr
2	-	2

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- Introduction of evidence Based Medicine (EBM): the cochrane collaboration conducting systematic reviews, conducting a Cochrane review
 - How to formulate a question : how to formulate a well built focused clinical question
 - Finding the best evidence through EBM website, the level of evidence strength.
- Critical appraisal of the evidence for validity and its integration patients values and clinical expertise
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1700424 Basics of molecular bioscience**Hour/Week**

Theoretical	Practical	Total Cr
1	2	2

The general safety measures, organization of the laboratory, the basic equipments and the sterilization techniques used. Different molecular techniques including DNA extraction gel electrophoresis, polymerase chain reaction, DNA extraction and RT-PCR, molecular diagnosis and therapy.

١. حضور واجتياز برنامج المعهد التمهيدي (كود ١٧٠٠٤٠٠) يعد شرطاً للتسجيل لدرجة الماجستير وان يجتاز هذه المقررات بنجاح وتقدير لا يقل عن (C)
٢. حضور واجتياز برنامج المعهد التمهيدي (كود ١٧٠٠٤٠٠) يعد شرطاً للتسجيل لدرجة الدكتوراه إذا لم يتم اجتيازه قبل الحصول على درجة الماجستير وان يجتاز هذه المقررات التمهيدي وتقدير لا يقل عن (C).

وكيل المعهد للدراسات العليا والبحوث

٠ د٠١ محمد محمد مختار

منسق عام البرنامج التمهيدي

٠ د٠١ سها خليف