كلية الطب

Faculty of Medicine

Master (MSc) Program & Courses' Specifications of Histology and Cell Biology

نموذج رقم (١٣)

Histology & Cell Biology Dep.

Program Specifications for MSc of Histology & Cell Biology (2023)

University: MINIA

Faculty(s): MEDICINE

Department: Histology and Cell Biology

A. Basic Information:

1. **Program title:** Master Degree in Histology & Cell Biology, **Code: HS200**
2. **Final award:** Master in Histology & Cell Biology
   Program type: Single ☐ √Double ☐ Multiple ☐
3. **Responsible department:** Histology & Cell Biology Department
4. **Departments involved in the program:** Histology & Cell Biology Department and public health and preventive medicine department
5. **Program duration: 2 years**
6. **Number of program courses:** three
7. **Coordinator:** Prof. Nashwa Fathy El-Tahawy
8. **External evaluators:** Prof. Azza Imbabi
9. **Internal evaluator:** Ass. Prof. Manal Ismael
10. **Program management team:**
    - Assistant prof. Hanaa Hasanin
    - Lecturer. Amira Fathy
    - Lecturer. Manar Foli
    - Lecturer. Nada Amgad
    - Assistant lecturer. Dina Ali Maher
    - Assistant lecturer. Esraa Mohamed Khairy

B- Professional Information:

1- Program aims to:

1.1 Provide the postgraduate with knowledge, skills and attitude that allow them to be qualified to deal with light and electron microscopic structure of cells, tissues and organs and to be expert in academic teaching.

1.2 Introduce the candidates to practice routine histological procedures and evaluation of specimens related to tissues, to carry out routine diagnostic procedures including cytological, cytogenetics, histochemical and ultrastructural investigations to be qualified in scientific research.

1.3 Enable the postgraduates to use research methodology and statistical principles in interpretation of data in their scientific research.

2- Intended learning outcomes (ILOs)

2.1. (a) Knowledge and understanding:

By the end of the study of master program in Histology & Cell Biology the candidate should be able to:

a.1. Discuss basics of the cell structure, ultrastructure, function and its specific specialization.
a.2. Identify the basics, and clinical applications in the fields of cytology, genetics, histochemistry to understand the structure of different organs and tissues and their regional variation and their significance.
a.3 Explain the current research methodology, collection and interpretation of data to be able to carry out research projects on clinical aspects, referencing and skill in writing scientific papers.
a.4 Discuss the principles of tissue culture and stem cells preparation and their clinical applications.
a.5. Recognize the moral and legal aspects of managing the department activities
a.6. Explain basics of different histological techniques.
a.7. Identify the basics of statistics, research methodology related to the field of Histology & Cell Biology.
a.8. Describe the basics, methodology and ethics of scientific research.

2.2. (b)Intellectual skills

By the end of master program in Histology & Cell Biology the candidate should be able to:

b.1. Compare between different types of microscopes and their uses.
b.2. Differentiate between different types of histological and histochemical techniques.
b.3. Distinguish between different types of stains
b.4 Correlate the structure and ultrastructure of different cells with their function.
b.5 Interpret the possible clinical problems related to altered structure and\or function of different cells.
b.6. Correlate the basic histological knowledge with clinical findings and biomedical data of case scenarios to reach the possible diagnosis.
b.7. Apply basic knowledge needed for improving the departmental performance in the

field of teaching and research.
b.8. Interpret any morphological abnormalities for all body tissues and organ systems.
b.9. Organize different research papers and choose the best technique, microscopy and statistical & computer programs to interpret results.
b.10. Construct research studies (thesis).
b.11. Apply safety measures during professional practicing different histological techniques and microscopic examination of histological slides.
b.12. Design a plan for improving professional practice in teaching and research.
b.13. Design the principles and fundamentals of quality assurance of professional practice in the field of Histology & Cell Biology.
b.14. Formulate training for being able to decision-maker in a variety of professional situations as laboratory problems

2.3. Skills:

2.3.1. (c) Professional and practical skills

By the end of the study of master program in Histology & Cell Biology the candidate should be able to:

c.1. Assess the different types of microscopes, the microscopic features of tissue structure in normality and disease, as appropriate to one's level of experience.

c.2. Prepare and train tissue dissection, fixation, trimming, tissue selection for making paraffin blocks and other types of processing of specimens as celloidin technique and freezing technique using cryostat.

c.3. Photograph pictures from microscopic fields through computer connected camera, with analyzing these pictures using image analysis & morphometry efficiently and write comments.

c.4. Solve problems in the laboratory, offer solutions that maintain a high order of quality control.

c.5. Appraise and evaluate the histological, histochemical and immunohistochemical findings.

c.6. Examine with different technological methods to serve the professional practice.

c.7. Appraise the different types of research methodology.

c.8 Analyze the collected data using different types of statistical programs as SPSS program, graph prism…extra.

2.3.2. (d) General and transferable skills

By the end of the study of master program in Histology & Cell Biology the candidate should be able to:

d.1. Communicate efficiently with medical reports and professional opinions as well as to interact with others and for effective teaching.
d.2. Use efficiently the information technology (web sites, journals and digital libraries) to manage information, teaching and research.
d.3. Design plans for self-development through continuous self-evaluation and life-long

learning.
d.4. Use efficiently different sources of information to get essential and relevant knowledge.
d.5. Evaluate the performance of others including students, junior staff and technical lab staff using constructive feedback.
d.6. Work as a part of a team and cooperate with colleagues and interact with professors and students to provide the best possible solutions or opinion in addition to development effective managerial skills including self-management.
d.7. Manage time efficiently and learn to priorities tasks.
d.8. Prepare and integrate scientific activities such as seminars, journal clubs, scientific meetings and conferences to achieve improvement of the professional practice through continuous and self-learning.

3- Program Academic Reference Standards

- Faculty of Medicine, Minia University adopted the general national academic reference standards provided by the national authority for quality assurance and accreditation of education (NAQAAE) for all postgraduate programs. (Faculty Council decree No.6854, in its cession No.177 Dated: 18\5\2009).

- Faculty of Medicine, Minia University has developed the academic standards (ARS) for Master (MSc) program and approved in faculty Council decree No.7528, in its cession No.191, dated: 15\3\2010), and these standards (Faculty ARS) have been updated and approved in faculty Council No.52\2 dated :20\2\2023. **{Annex 1}.**

Then Histology & Cell Biology department has adopted these standards and developed the intended learning outcomes (ILOS) for Master (MSc) program in **Histology and cell biology and the Date of program specifications 1st approval by department council**: 13/5/2013 and **the last date of program specification approval by department council: 6\3\2023. {Annex 2}.**

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4. Program External References

- No External reference (Benchmark).

5. Program Structure and Contents:

5. A. Program duration: (2years).

5. B. Program structure:

- No of hours: 240 hours
  - Lecture: 2 hrs/w
  - Practical:2 hrs /w

- Total hours/week: 4hrs/w

Basic sciences (compulsory) courses: No: -2 Percentage: 94%

- Specific courses related to the specialty: No:1 Percentage: 6%
- Training programs and workshops, field visits, seminars & other scientific activities: Distributed along the whole program.

5. C. Levels of program in credit hours system: Not applicable

5. D. Program courses:

Number of courses: 3 including:

1. **Cytology, genetics and histochemistry**
2. **Medical statistics and research methodology**
3. **General and systemic Histology**

N.B. {Courses' specifications are present in Annex 4} & {Correlations of Program ILOs with courses are present in Annex 5}.

Course title	Total No. of hours	N. of hours /week			Program ILOs Covered
		Lect.	Practical	tutorial	
1st part					
1. Cytology, nucleus & genetics and histochemistry	90	60	30	-	a1,a2,a3,a4,a5,a6 b1,b2,b3,b4,b5,b6,b7,b8,b9,b10, b11,b12,b13,b14 c1,c2,c3,c4,c5,c6 d1,d2,d3,d4,d5,d6,d7,d8
2. Medical statistics and research methodology	30	20	10	-	a3,a7,a8 b9,b10 c7,c8 d1,d2,d3,d4,d5,d6,d7,d8
Training programs and workshops, seminars		Continuous			d1,d2,d3,d4,d5,d6,d7,d8
2nd part					

3-General and systemic histology	120	60	60	-	a1,a2,a5,a6 b1,b2,b3,b4,b5,b6,b7,b8,b11,b12, b13,b14 c1,c2,c3,c4,c5,c6 d1,d2,d3,d4,d5,d6,d7,d8

Training programs and workshops, seminars	Continuous	d1, d2,d3,d4,d5,d6,d7,d8

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6- Program admission requirements:

1. General requirements:

A. Candidates should have either:

1. MBBCH degree from any Egyptian faculty of medicine or

2. Equivalent degree from medical schools abroad approved by ministry of higher education

B. Candidate should complete the house office training year.

C. Candidate should follow postgraduate regulations of Faculty of Medicine, Minia University

2. Specific requirements:

A. Candidates graduated from Egyptian universities should get "Good Rank" in their final year/cumulative years examination and grade "Good Rank "in Histology course too.

B. Candidate should know how to speak and write English efficiently.

C. Candidate should have computer skills.

7- Regulations for progression and program completion:

Duration of program is (2years), starting from registration till the second part exam;

divided to:

First Part: (≥12 months):

- All courses as specified in the internal bylaw
- Enrolment to the first part exam is only permitted after registration by a minimum of 12 months.
- Two sets of exams: 1st in October — 2nd in April.
- For the student to pass the first part exam, a score of at least 60% in each curriculum is needed (with at least 40% in the written exam).
- Those who fail in one curriculum need to reenter the exam for that curriculum only.

Thesis/essay:

- Start from registration and should be completed, and accepted a minimum of 6 months after protocol registration up to a month prior to enrolment to the 2nd part final exam.
- Accepting the thesis occurs after acceptance and\ or publishing one thesis-based paper in local or international journal and this is adequate to pass this part.

Second Part: (≥12 months):

- Program related specialized Courses.
- Actual work for 12 months as a demonstrator /trainee in the Histology & Cell Biology department.
- The student should pass the 1st part before permitted enrolment to the 2nd part exam.
- Two sets of exams: 1st in October — 2nd in April.
- For the student to pass the second part exam, a score of at least 60% in each curriculum is needed (with at least 40% in the written exam).
- Fulfillment of the requirements in each course as described in the template and registered in the **logbook** is a prerequisite for candidates to be assessed and undertake part 1 and part 2 examinations; as following:

a) Training courses along the duration of the program

b) Seminars: at least 10 seminars

c) Thesis discussion attendance: at least 3 discussions

d) Workshops

e) Conference attendance: at least one conference

f) Other scientific activities requested by the department

8- Teaching and learning methods:

1- 2 hours of lectures per week throughout the course.

2-2hours of practical training and demonstration weekly throughout the course.

3-Self training activities such as use of internet and multimedia.

4- Regular weekly seminars, presentations and assignments.

5-Training courses & workshops.

6-Thesis discussion attendance.

7-Conference attendance

Teaching and learning methods	The assessed ILOs
• **Lectures**	a1,a2, a3,a4,a5,a6, a7,a8 b1,b2,b3,b4,b5,b6,b7,b8, b9,b10,b11,b12,b13,b14
• **Practical sessions:** **1- Observation of different light microscopic slides** **2- Light microscopic slides preparation and examination & power point slides for electron microscopic slides examination** **3- Statistical analysis of different data.**	c1,c2,c3,c4,c5,c6 ,c7,c8
• **Self-training activities** • **seminars, presentations & assignments.** • **Training courses & workshops.** • **Thesis discussion attendance.**	d1,d2,d3,d4,d5,d6,d7,d8

• **Conference attendance**	

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9-Methods of student assessment:

Method of assessment	**The assessed ILOs**
1. Written Exams: • Short essay • MCQs • Problem solving	a1,a2, a3,a4,a5,a6, a7,a8 b1,b2,b3,b4,b5,b6,b7,b8, b9,b10,b11,b12,b13,b14
2. Practical Exams: • **Spot diagnosis of different types of tissues through microscopic examination and ppt slides.** • **Interpret slides with detailed cellular assessment.** • **Statistical analysis of data**	c1,c2,c4,c5,c6 ,c7,c8
3. Oral Exams	a1,a2, a3,a4,a5,a6,a7,a8 b1,b2,b3,b4,b5,b6,b7,b8, b9,b10,b11,b12,b13,b14
4. Seminars, presentations, assignments and Logbook assessment	d1,d2,d3,d4,d5,d6,d7,d8

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Weighing of assessment:

It is mandatory to pass all the papers of written exams separately

Course	Written	Oral	Practical	Total
Cytology, nucleus & **genetics and histochemistry**	**100**	**70**	**70**	**240**
Medical statistics and research methodology	**30**	**18**	**12**	**60**
General and systemic histology	**280 (40%)** **1st paper 140** **2nd paper 140**	**210**	**210**	**700**

9. Methods of Program Evaluation:

Evaluator (By whom)	Method/tool	Sample
1. Senior students (Students of final years)	Questionnaires	Attached to the file
2. Graduates (Alumni)	Questionnaires	Attached to the file
3. Stakeholders	Meeting Questionnaires	Attached to the file Attached to the file
4. External & Internal evaluators and external examiners	Reports	Attached to the file
5. Quality Assurance Unit	Reports Questionnaires Site visits	Attached to the file Attached to the file Attached to the file

Program Coordinators:

1. Prof. Nashwa Fathy El-Tahawy
2. Assistant prof. Hanaa Hasanin
3. Lecturer. Amira Fathy
4. Lecturer. Manar Foli
5. Lecturer. Nada Amgade
6. Assistant lecturer. Dina Ali Maher
7. Assistant lecturer. Esraa Mohamed Khairy

Head of Department: Prof. Seham Abd El-Raouf Abd El-Aleem

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Date of program specifications 1st approval by <u>department council</u>: 13/5/2013.

Date of <u>last update</u> & approval by <u>department council</u>: 6/3/2023

Annex 1: Comparison between National Academic Quality Assurance & Accreditation (NAQAAE) General Academic Reference Standards (GARS) and Faculty Academic Reference Standards (ARS)

NAQAAE برامج الماجستير	**Faculty** **Master (MSC) Program**
١. مواصفات الخريج: خريج برنامج الماجستير في أي تخصص يجب أن يكون قادرا على:	**1. Graduate Attributes**: Graduate of master (MSC) program should be able to:
1.1. إجادة تطبيق أساسيات ومنهجيات البحث العلمي واستخدام أدواته المختلفة.	1.1. Understanding and applying of basics of research method and research tools
2.1. تطبيق المنهج التحليلي واستخدامه في مجال التخصص	2.1. Critically analyze, evaluate, and effectively communicate findings, theories, and methods
3.1. تطبيق المعارف المتخصصة و دمجها مع المعارف ذات العلاقة في ممارسته المهنية.	3.1. Apply integrated professional and general knowledge in his scholarly field and at the interface between different fields.
4.1. إظهار وعيا بالمشاكل الجارية والرؤى الحديثة في مجال التخصص.	4.1. Demonstrate awareness of community health needs related to the field of specialization by understanding the beneficial interaction with the society to improve quality of life
5.1. تحديد المشكلات المهنية وإيجاد حلولا لها.	5.1. Demonstrating proficiency, required to solve current complex problems in his scholarly field.
6.1. إتقان نطاق مناسب من المهارات المهنية المتخصصة واستخدام الوسائل التكنولوجية المناسبة بما يخدم ممارسته المهنية.	6.1. Master a variety of technical skills in his scholarly field and expert relevant equipment, technology, and software.
7.1. لتواصل بفاعلية والقدرة على قيادة فرق العمل.	7.1. Gain leadership skills and be able to communicate efficiently with colleagues and get the best results.
8.1. اتخاذ القرار في سياقات مهنية مختلفة.	8.1. Take professional situational decisions and logically support them.
9.1. توظيف الموارد المتاحة بما يحقق أعلي استفادة و الحفاظ عليها	9.1. Optimal use of available resources to achieve research or best patient health care and ensure its maintenance.

10.1. إظهار الوعي بدوره في تنمية المجتمع والحفاظ على البيئة في ضوء المتغيرات.	10.1. Demonstrate awareness of its role in community health development and
11.1. التصرف بما يعكس الالتزام بالنزاهة والمصداقية والالتزام بقواعد المهنة.	11.1. Exhibit ethical behavior that reflect commitment to the code of practice
12.1. تنمية ذاته أكاديميا ومهنيا وقادرا علي التعلم المستمر.	12.1. demonstrate the ability to sustain a lifelong personal and professional growth.
٢.المعايير القياسية العامة: NAQAAE General Academic Reference Standards "GARS" for Master Programs	**2. Faculty Academic Reference Standards (ARS) for Master Program**
٢,١. المعرفة والفهم: بانتهاء دراسة برنامج الماجستير يجب أن يكون الخريج قادرا علي الفهم والدراية بكل من:	**2.1. Knowledge & Understanding:** Upon completion of **the Master Program**, the graduate should have sufficient knowledge and understanding of:
٢,١,١. النظريات والأساسيات والحديث من المعارف في مجال التخصص والمجالات ذات العلاقة	2.1.1. Understanding the scientific basis and modern knowledge in the field of specialization and related medical sciences
٢,١,٢. التأثير المتبادل بين الممارسة المهنية وانعكاسها علي البيئة	2.1.2. The mutual influence of professional practice on work environment, working conditions, and job characteristics.
٢,١,٣. التطورات العلمية في مجال التخصص	2.1.3. Scientific developments in the field of specialization
٢,١,٤. المبادئ الأخلاقية والقانونية للممارسة المهنية في مجال التخصص	2.1.4. Recognizing basics of medico-legal aspects of practice, malpractice and avoid common medical errors
٢,١,٥. مبادئ وأساسيات الجودة في الممارسة المهنية في مجال التخصص	2.1.5. Quality principles in the scholarly field
٢,١,٦. أساسيات وأخلاقيات البحث العلمي	2.1.6. Basis of research methodology and medical ethics.
2.2. المهارات الذهنية : بانتهاء دراسة برنامج الماجستير يجب أن يكون الخريج قادرا على:	**2.2. Intellectual Skills:** Upon completion of the master program, the graduate should be able to:
٢,٢,١. تحليل وتقييم المعلومات في مجال التخصص والقياس عليها لحل المشاكل	2.2.1. Use judgment skills for analytical and critical problem solving
٢,٢,٢. حل المشاكل المتخصصة مع عدم توافر بعض المعطيات	2.2.2. Capable of integrating knowledge and dealing with complex subjects to solve problems

٢,٢,٣الربط بين المعارف المختلفة لحل المشاكل المهنية	2.2.3. Be capable of integrating research results and/or results of history, physical and laboratory test findings to solve a research or a clinical problem.
٢,٢,٤. إجراء دراسة بحثية و/أو كتابة دراسة علمية منهجية حول مشكلة بحثية	2.2.4. Effectively apply research methods and carrying out a medical research thesis
٢,٢,٥. تقييم المخاطر في الممارسات المهنية في مجال التخصص	2.2.5. Be aware of risk management principles, and patient safety.
٢,٢,٦. التخطيط لتطوير الأداء في مجال التخصص	2.2.6. Establish goals, commitments, and strategies for improved professional performance in the field of specialty
٢,٢,٧. اتخاذ القرارات المهنية في سياقات مهنية متنوعة.	2.2.7. Take professional situational decisions and logically support them.
3.2.المهارات المهنية: بانتهاء دراسة برنامج الماجستير يجب أن يكون الخريج قادرا على:	**3.2. Professional Skills:** Upon completion of the master program, the graduate must be able to:
٣,٢,١. إتقان المهارات المهنية الأساسية والحديثة في مجال التخصص.	3.2.1. Master the basic and some advanced professional skills in his scholarly field.
٣,٢,٢كتابة و تقييم التقارير المهني.	3.2.2. Write and evaluate medical or scientific reports
٢,٣,٣تقييم الطرق والأدوات القائمة في مجال التخصص	3.2.3. Assess and evaluate technical tools during research
4.2.المهارات العامة والمنتقلة : بانتهاء دراسة برنامج الماجستير يجب أن يكون الخريج قادرا على:	4.2. **General and transferable skills** Upon completion of the master program, the graduate should be able to:
٤,٢,١. التواصل الفعال بأنواعه المختلفة	4.2.1. Communicate effectively using a written medical record, electronic medical record, or other digital technology.
٤,٢,٢. استخدام تكنولوجيا المعلومات بما يخدم الممارسة المهنية	4.2.2. Use of information technology (computer to create, process, store, secure and exchange electronic data) in the field of medical practice.
4.2.3. لتقييم الذاتي وتحديد احتياجاته التعلمية الشخصية	4.2.3. Assess himself and identify personal learning needs
4.2.4. استخدام المصادر المختلفة للحصول على المعلومات والمعارف	4.2.4. Use various sources for information (physical and digital sources).
4.2.5. وضع قواعد ومؤشرات تقييم أداء الآخرين	4.2.5. Setting indicators for evaluating the performance of others

4.2.6. العمل في فريق، وقيادة فرق في سياقات مهنية مختلفة	4.2.6. Work in a team, and Apply leadership skills to enhance team functioning, the learning environment, and/or the health care delivery system
4.2.7. إدارة الوقت بكفاءة	4.2.7. Manage time efficiently
٤,٢,٨.التعلم الذاتي والمستمر	4.2.8. Demonstrate skills of self-learning and lifelong learning needs of medical profession.

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ANNEX 2: ARS VS. MSc PROGRAM of Histology & Cell Biology

٢.المعايير القياسية العامة: **NAQAAE General Academic Reference Standards "GARS" for Master Programs**	**2. Faculty Academic Reference Standards (ARS) for Master Program**	**MSc Program of Histology & Cell Biology**
٢,١. المعرفة والفهم: بانتهاء دراسة برنامج الماجستير يجب أن يكون الخريج قادرا علي الفهم والدراية بكل من:	**2.1. Knowledge & Understanding:** Upon completion of **the Master Program**, graduates should have sufficient knowledge & understanding of:	**2.1. Knowledge and Understanding** Upon completion of the master Program (MSc) in Histology & Cell Biology the graduate should be able to:
٢,١,١. النظريات والأساسيات والحديث من المعارف في مجال التخصص والمجالات ذات العلاقة	2.1.1. Understanding the scientific basis and modern knowledge in the field of specialization and related medical sciences.	a.1. Discuss basics of the cell structure, ultrastructure, function and its specific specialization.
٢,١,٢. التأثير المتبادل بين الممارسة المهنية وانعكاسها على البيئة	2.1.2.The mutual influence of professional practice on work environment, working conditions, and job characteristics.	a.2. Identify the basics, and clinical applications in the fields of cytology, genetics, histochemistry to understand the structure of different organs and tissues and their regional variation and their significance. a.3 Explain the current research methodology, collection and interpretation of data to be able to carry out research projects on clinical aspects, referencing and skill in writing scientific papers.
٢,١,٣. التطورات العلمية في مجال التخصص	2.1.3. Scientific developments in the field of specialization	a.4 Discuss the principles of tissue culture and stem cells preparation and their clinical applications.
٢,١,٤. المبادئ الأخلاقية والقانونية للممارسة المهنية في مجال التخصص	2.1.4. Recognizing basics of medico-legal aspects of practice, malpractice and avoid common medical errors	a.5. Recognize the moral and legal aspects of managing the department activities.
٢,١,٥. مبادئ وأساسيات الجودة في الممارسة المهنية في مجال التخصص	2.1.5. Quality principles in the scholarly field	a.6. Explain basics of different histological techniques. a.7. Identify the basics of statistics, research methodology related to the field of Histology & Cell Biology.

٢,١,٦. أساسيات وأخلاقيات البحث العلمي	2.1.6. Basis of research methodology and medical ethics.	a.8. Describe the basics, methodology and ethics of scientific research.
2.2.المهارات الذهنية: بانتهاء دراسة برنامج الماجستير يجب أن يكون الخريج قادرا على:	**2.2. Intellectual Skills:** Upon completion of the master program, the graduate should be able to:	**2.2. Intellectual skills:** Upon completion of the master program (MSc) in Histology & Cell Biology, the graduate must be able to:
٢,٢,١. تحليل وتقييم المعلومات في مجال التخصص والقياس عليها لحل المشاكل	2.2.1. Use judgement skills for analytical and critical problem solving	b.1. Compare between different types of microscopes and their uses. b.2. Differentiate between different types of histological and histochemical techniques. b.3. Distinguish between different types of stains b.4 Correlate the structure and ultrastructure of different cells with their function. b.5 Interpret the possible clinical problems related to altered structure and\or function of different cells.
٢,٢,٢. حل المشاكل المتخصصة مع عدم توافر بعض المعطيات	2.2.2. Capable of integrating knowledge and dealing with complex subjects to solve problems	b.6. Correlate the basic histological knowledge with clinical findings and biomedical data of case scenarios to reach the possible diagnosis. b.7. Apply basic knowledge needed for improving the departmental performance in the field of teaching and research.
٢,٢,٣الربط بين المعارف المختلفة لحل المشاكل المهنية	2.2.3. Be capable of integrating research results and/or results of history, physical and laboratory test findings to solve research or a clinical problem.	b.8. Interpret any morphological abnormalities for all body tissues and organ systems.
٢,٢,٤. إجراء دراسة بحثية و/أو كتابة دراسة علمية منهجية حول مشكلة بحثية	2.2.4. Effectively apply research methods and carrying out a medical research thesis	b.9. Organize different research papers and choose the best technique, microscopy and statistical & computer programs

		to interpret results. b.10. Construct research studies (thesis).
٢,٢,٥. تقييم المخاطر في الممارسات المهنية في مجال التخصص	2.2.5. Be aware of risk management principles, and patient safety.	b.11. Apply safety measures during professional practicing different histological techniques and microscopic examination of histological slides.
٢,٢,٦. التخطيط لتطوير الأداء في مجال التخصص	2.2.6. Establish goals, commitments, and strategies for improved professional performance in the field of specialty	b.12. Design a plan for improving professional practice in teaching and research. b.13. Design the principles and fundamentals of quality assurance of professional practice in the field of Histology & Cell Biology.
٢,٢,٧. اتخاذ القرارات المهنية في سياقات مهنية متنوعة.	2.2.7. Take professional situational decisions and logically support them.	b.14. Formulate training for being able to decision-maker in a variety of professional situations as laboratory problems.
3.2.المهارات المهنية: بانتهاء دراسة برنامج الماجستير يجب أن يكون الخريج قادرا على:	**3.2. Professional Skills:** Upon completion of the master program the graduate must be able to:	**3.2. (c) Professional and practical skills** Upon completion of the master program (MSc) in Histology & Cell Biology, the graduate must be able to:
3.2.1. إتقان المهارات المهنية الأساسية والحديثة في مجال التخصص.	3.2.1. Master the basic and some advanced professional skills in his scholarly field.	c.1. Assess the different types of microscopes, the microscopic features of tissue structure in normality and disease, as appropriate to one's level of experience. c.2. Prepare and train tissue dissection, fixation, trimming, tissue selection for making paraffin blocks and other types of processing of specimens as celloidin technique and freezing technique using cryostat. c.3. Photograph pictures from microscopic fields through computer connected camera, with analyzing these pictures using image analysis &

		morphometry efficiently and write comments. c.4. Solve problems in the laboratory, offer solutions that maintain a high order of quality control.
٣,٢,٢كتابة و تقييم التقارير المهني.	3.2.2. Write and evaluate medical or scientific reports	c.5. Appraise and evaluate the histological, histochemical and immunohistochemical findings.
٣,٢,٣تقييم الطرق والأدوات القائمة في مجال التخصص	3.2.3. Assess and evaluate technical tools during research	c.6. Examine with different technological methods to serve the professional practice. c.7. Appraise the different types of research methodology. c.8 Analyze the collected data using different types of statistical programs as SPSS program, graph prism…extra.
4.2.المهارات العامة والمنتقلة : بانتهاء دراسة برنامج الماجستير يجب أن يكون الخريج قادرا على:	4.2. **General and transferable skills** Upon completion of the master program the graduate should be able to:	**4.2. (d) General and transferable skills** Upon completion of the master program (MSc) in Histology & Cell Biology, the graduate must be able to:
٤,٢,١. التواصل الفعال بأنواعه المختلفة	4.2.1. Communicate effectively using a written medical record, electronic medical record, or other digital technology.	d.1. communicate efficiently with medical reports and professional opinions as well as to interact with others and for effective teaching.
٤,٢,٢. استخدام تكنولوجيا المعلومات بما يخدم الممارسة المهنية	4.2.2. Use of information technology (computer to create, process, store, secure and exchange electronic data) in the field of medical practice.	d.2. Use efficiently the information technology (web sites, journals and digital libraries) to manage information, teaching and research.
4.2.3. لتقييم الذاتي وتحديد احتياجاته التعلمية الشخصية	4.2.3. Assess himself and identify personal learning needs	d.3. Design plans for self-development through continuous self-evaluation and life-long learning.
4.2.4. استخدام المصادر المختلفة للحصول على المعلومات والمعارف	4.2.4. Use various sources for information (physical and digital sources).	d.4. Use efficiently different sources of information to get essential and relevant knowledge.

4.3.5. وضع قواعد ومؤشرات تقييم أداء الآخرين	4.2.5. Setting indicators for evaluating the performance of others	d.5. Evaluate the performance of others including students, junior staff and technical lab staff using constructive feedback.
4.2.6. العمل في فريق، وقيادة فرق في سياقات مهنية مختلفة	4.2.6. Work in a team, and Apply leadership skills to enhance team functioning, the learning environment, and/or the health care delivery system	d.6. Work as a part of a team and cooperate with colleagues and interact with professors and students to provide the best possible solutions or opinion in addition to development effective managerial skills including self-management.
4.2.7. إدارة الوقت بكفاءة	4.2.7. Manage time efficiently	d.7. Manage time efficiently and learn to priorities tasks.
٤,٢,٨. التعلم الذاتي والمستمر	4.2.8. Demonstrate skills of self-learning and lifelong learning needs of medical profession.	d.8. Prepare and integrate scientific activities such as seminars, journal clubs, scientific meetings and conferences to achieve improvement of the professional practice through continuous and self-learning.

Seham Abd El-Raouf Abd El-Aleem

Annex 5

نموذج رقم (١١ب)

مسمى البرنامج	MSC in **Histology & Cell Biology.**
كود البرنامج	**HS 200**

جامعة/أكاديمية:. جامعة المنيا.....

كلية / معهد: كلية الطب.....

قسم:الهستولوجي وبيولوجيا الخلية...

Matrix of Coverage of MSC Program ILOs By Course

Courses **(List of courses in 1st and 2nd parts)**	**Program Intended Learning Outcomes (ILOs)**			
	A. Knowledge & Understanding	**B. Intellectual Skills**	**C. Professional & Practical skills**	**D. General & Transferable Skills**
	A	**B**	**C**	**D**
1. Cytology, nucleus & genetics and histochemistry	A1,A2,A4,A5,A6	B1,B2,B3,B4,B5,B6,B7,B8,B11,B12, B13,B14	C1,C2,C3,C4,C5,C6	D1,D2,D3,D4,D5,D6,D7,D8
2. Medical statistics and research methodology	A3,A7,A8	B9,B10	C7,C8	D1,D2,D3,D4,D5,D6,D7,D8
3. General and systemic histology	A1,A2,A5,A6	B1,B2,B3,B4,B5,B6,B7,B8,B11,B12, B13,B14	C1,C2,C3,C4,C5,C6	D1,D2,D3,D4,D5,D6,D7,D8

B. Matrix of Coverage of Course ILOs by Methods of teaching and learning

Methods of Teaching & Learning	**Intended Learning Outcomes (ILOs)**			
	A. Knowledge & Understanding	**B. Intellectual Skills**	**C. Professional & Practical skills**	**D. General & Transferable Skills**
	A	**B**	**C**	**D**
Lecture	a1,a2, a3,a4,a5,a6, a7,a8	b1,b2,b3,b4,b5,b6, b7,b8, b9,b10,b11,b12, b13,b14		
Practical sessions: **1-Observation of different light microscopic slides** **2- Light microscopic slides preparation and examination & ppt slides for electron microscopic slides examination** **3- Statistical analysis of different data.**			c1,c2,c3,c4,c5,c6 ,c7,c8	
Presentation/seminar **Journal club** **Thesis discussion** **Training courses & workshops**				d1,d2,d3,d4,d5,d6, d7,d8

C. Matrix of Coverage of Course ILOs by Methods of Assessment

Methods of Assessment	Intended Learning Outcomes (ILOs)			
	A. Knowledge & Understanding	**B. Intellectual Skills**	**C. Professional & Practical skills**	**D. General & Transferable Skills**
	A	**B**	**C**	**D**
Written exam	a1,a2, a3,a4,a5,a6, a7,a8	b1,b2,b3,b4,b5, b6,b7,b8, b9,b10,b11,b12 ,b13,b14		
Practical exam			c1,c2,c3,c4,c5,c6 ,c7,c8	
Oral Exam	a1,a2, a3,a4,a5,a6, a7,a8	b1,b2,b3,b4,b5, b6,b7,b8, b9,b10,b11,b12 ,b13,b14		
Seminars, presentations, Assignments, Logbook assessment				d1,d2,d3,d4,d5,d6,d7,d8

Seham Abd El-Raouf Abd El-Aleem

Annex 4

Course Specifications of:

"Cytology, nucleus & **genetics, and histochemistry** ***for Master degree in Histology & Cell Biology."***

2022-2023

University: Minia University

Faculty: Faculty of Medicine

Department offering the course: Histology & Cell Biology department.

Course Specifications

It is a part of the postgraduate (MSC) program for the Histology & Cell Biology department.

Program (s) on which the course is given: First part MSC of Histology & Cell Biology.

Major or minor element of programs: Cytology, genetics, and histochemistry

1- Basic Course Information		
Academic Year/ level: First Part MSC, histology	**Course Title:** Cytology, nucleus & genetics, and histochemistry	**Code: HS200**
Number of teaching hours: **Lectures: 6**0 hours 2h / week **Practical: 30** hours 1h/ week **Total: 9**0 hours		
2-Overall Aims of the course		
The aim of this course is to provide the postgraduate student with the medical knowledge and skills essential for the practice of specialty and necessary to gain further training and practice in the field of Histology through providing: 1- Scientific knowledge essential for the practice of Histology according to the international standards. 2- Ethical principles related to the practice in this specialty.		

3- Active participation in community needs assessment and problem-solving. 4- Maintenance of research interests and abilities.	
3- **Intended learning outcomes of the course (ILOs)**	
Upon completion of the course, the candidate should be able to:	
A-Knowledge and understanding	a.1 Define basics and know in detail the cell structure, function, and its specific specialization. a.2 Discuss the basics of cytogenetics and know in detail how the genome affects all the characteristics of the human body. a.3 Identify the basics, methodology, and applications in the fields of histochemistry to understand the ultrastructure of different organelles. a.4 Define general histological stains. a.5 Identify types of microscopy and micro techniques.
B-Intellectual Skills	b.1. Correlate the histological structure of different cells with their function under normal conditions. b.2 Correlate between any abnormalities in the histological structure of the different organelles and related illness. b.3 Interpret different types of histological and histochemical techniques. b.4 Compare different types of microscopes and their uses. b.5 Analyze research and issues related to Histology.
C-Professional and practical skills	By the end of the course, the student should have the ability to: c.1 Practice the basic and modern professional skills in the field of Histology and genetics. c.2 Perform the steps of micro technique for paraffin section preparation perfectly and independently. c.3 Perform general histological stains; H&E perfectly and independently

	c.4 Observe the steps of tissue preparation for E.M. under supervision. c.5 Observe the steps of immunohistochemistry under supervision. c.6. Deal with lab animals.
D- General and transferrable Skills	By the end of the course, the student should have the ability to: d.1 Communicate effectively by all types of effective communication. d.2 Use information technology to serve the development of professional practice. d.3 Assess himself and identify learning needs. d.4 Use different sources to obtain information and knowledge d.5 Develop rules and indicators for assessing the performance of others. d.6 Work in a team, and team's leadership in various professional contexts.

4-Course content			
	No. Of hours	Lecture	Practical
Histochemistry 1-Tissue handling and Fixation 2-Microtechniques 3-Staining 4-Immunocytochemistry 5-Tissue and cell culture 6-Types of microscopy.	18	12	6

Cytology 1-Cell membrane; L.M., E.M., and molecular structure. 2-Function of the cell membrane. 3-Different types of transporting materials. 4-Cell specialization 5-Mitochondria; structure and function. 6-Golgi complex; structure and function 7-Endoplasmic reticulum; structure and function. 8-Lysosome. 9-Peroxisome. 10-Proteasome. 11-Secretory granules. 12-Clinical applications of membranous organelles 13-Non membranous Organelle; structure and function (part 1). 14-Non membranous organelles; structure and function (part 2). 15-Cytoplasmic inclusions.	45	30	15
Nucleus and Cytogenitics 1-L.M. &E.M. of the nucleus 2-DNA &RNA 3-Cell cycle. 4-cell division. 5-Abnormalities of cell division. 6-Stem cells 7-Chromosome structure. 8-Karyotyping. 9-Chromosomal abnormalities.	27	18	9

5-Teaching and learning methods

5.1- Lectures: live, online, and pre-recorded video lectures
5.2- Practical lessons: Observation of different light microscopic slides, Light microscopic slides preparation and examination & power point slides for electron microscopic slides examination.
5.3- Seminars.
5.4- Workshops and participating in scientific conferences.

6- Student assessment methods

6. 1- log book
6.2- **Written exams:**
Short essay: to assess knowledge
Problem solving: to Asses intellectual skills
MCQ: to assess knowledge and intellectual skills
6.3- **Practical Exams:** to assess practical skills, in the form of **Spot diagnosis of different types of tissues through microscopic examination and ppt slides and Interpretation of slides with detailed cellular assessment.**
6.4- **Oral Exams:** to assess knowledge, understanding, attitude, and communication.

7-Weighting of assessments

Writen exam	100
Oral exam	70
Practical examination	70
Total	240

8- List of references

8.1- Course notes: Department Books, and notes.
Logbook

8.2- Essential books (textbooks)

- Wheater's Functional Histology. A Text and Colour Atlas. 7th Edition 2023.
  Authors: Geraldine O'Dowd, Sarah Bell, Sylvia Wright
  Paperback ISBN: 9780702083358
  Paperback ISBN: 9780702083341

- Mescher AL (2021). Junqueira's Basic Histology: Text and Atlas 16th Edition, McGraw-Hill Education.

- Gartner Textbook of Histology. 5th Edition Leslie Gartner - 2020
  Author: Leslie Gartner
  Paperback ISBN: 9780323672726
  eBook ISBN: 9780323672740

- Netter's Essential Histology With Correlated Histopathology-3rd Edition - February 2, 2020.
  Authors: William Ovalle, Patrick Nahirney
  Paperback ISBN: 9780323694643
  9 7 8 - 0 - 3 2 3 - 6 9 4 6 4 – 3.
  eBook ISBN: 9780323694667

- Essentials of Genetics 10th Edition: 10th edition, 2020
  Authors: Charlotte Spencer, William Klug, Michael Cummings.
  ISBN13: 9780134898414
  ISBN10: 0134898419

- Regenerative Medicine and Stem Cell Biology, Nagwa El-Badri 2020

Stem cells & Tissue culture:

- Meyer, U., Meyer, T., Handschel, J. and Wiesmann, H.P. eds., 2009. *Fundamentals of tissue engineering and regenerative medicine*. Springer Science & Business Media.

Cell biology: _(eBooks)

- Cell Biology/Introduction/Cell size - Wikibooks, open books for an open world: **https://en.wikibooks.org/wiki/Cell_Biology**
- Cells **and genomes:_(eBooks)**
  https://www.academia.edu/5121556/INTRODUCTION_TO_THE_CELL_part_1_eBooks

For practical:

- Alomari, M., 2004. Color Atlas of Cytology, Histology and Microscopic Anatomy.

- **Dr. Jastrow's Light- and Electron Microscopic Atlas:**
  http://www.drjastrow.de/WAI/EM/EMAtlas.html
- Eroschenko, V.P. and Di Fiore, M.S., 2013. *DiFiore's atlas of histology with functional correlations*. Lippincott Williams & Wilkins.

8.3- Periodicals:

- Egyptian Journal of Histology
- Cell and tissue research

8.4-WebSites:

http://www.histology-world.com
http://histo.life.illinois.edu/histo/atlas/slides.php

9- Facilities required for teaching and learning

1. Histology & Cell Biology research laboratory equipped with skill tools.
2. Classrooms for theoretical lectures and tutorials.

Course coordinator:

Prof. Nashwa Fathy Al-Tahawy

Head of Department:

Prof. Seham Abdel Raouf Abdel Aleem

Seham Abd El-Raouf Abd El-Aleem

Date of the last update :6\3\2023

نموذج رقم (١١أ)

مسمى المقرر	MSC Histology & Cell Biology
كود المقرر	**HS 200**

جامعة/أكاديمية: جامعة المنيا .....
كلية / معهد: كلية الطب.....
قسم: الهستولوجي وبيولوجيا الخلية.....

A. Matrix of Coverage of Course ILOs By Contents

Topic	**ILOS**
Histochemistry 1-Tissue handling and Fixation 2-Microtechniques 3-Staining 4-Immunocytochemistry 5-Tissue and cell culture 6-Types of microscopy.	a3,a4,a5 b3,b4,b5 c2,c3,c4,c5,c6 d1,d2,d3,d4,d5,d6
Cytology 1-Cell membrane; L.M., E.M., and molecular structure. 2-Function of the cell membrane. 3-Different types of transporting materials. 4-Cell specialization 5-Mitochondria; structure and function. 6-Golgi complex; structure and function 7-Endoplasmic reticulum; structure and function. 8-Lysosome. 9-Peroxisome. 10-Proteasome. 11-Secretory granules. 12-Clinical applications of membranous organells 13-Non membranous organelles ;structure and function (part 1). 14-Non membranous organelles ;structure and function (part 2). 15-Cytoplasmic inclusions.	a1,a3,a4 b1,b2,b5 c1 d1,d2,d3,d4,d5,d6

Nucleus and Cytogenitics 1-L.M. &E.M. of the nucleus 2-DNA &RNA 3-Cell cycle. 4-cell division. 5-Abnormalities of cell division. 6-Stem cells 7-Chromosome structure. 8-Karyotyping. 9-Chromosomal abnormalities.	a1,a2,a3,a4 b1,b2,b5 c1 d1,d2,d3,d4,d5,d6

Seham Abd El-Raouf Abd El-Aleem

B.Matrix of Coverage of Course ILOS by Methods of teaching and learning

Methods of Teaching & Learning	Intended Learning Outcomes (ILOs)			
	A. Knowledge & Understanding	B. Intellectual Skills	C. Professional & Practical skills	D. General & Transferable Skills
	A	B	C	D
Lecture	a1,a2,a3,a4,a5	b1,b2,b3,b4,b5		
Practical			c1,c2,c3,c4.c5, c6	
Presentation/seminar Journal club Thesis discussion Training courses & workshops				d1,d2,d3,d4,d5,d6

Seham Abd El-Raouf Abd El-Aleem

C.Matrix of Coverage of Course ILOs by Methods of Assessment

Methods of Assessment	Intended Learning Outcomes (ILOs)			
	A. Knowledge & Understanding	B. Intellectual Skills	C. Professional & Practical skills	D. General & Transferable Skills
	A	B	C	D
Written exam	a1,a2,a3,a4,a5	b1,b2,b3,b4,b5		
Practical exam			c1,c2,c3,c4.c5,c6	
Oral Exam	a1,a2,a3,a4,a5	b1,b2,b3,b4,b5		

Seham Abd El-Raouf Abd El-Aleem

Blueprint of Histology and cell biology department postgraduates master degree “first part” Examination Paper

(100 marks)

	Topic	Hours	Knowledge %	Intellectual %	% of topic	N of items per topic	Knowledge		Intellectual		Marks
							N of items	mark	N of items	mark	
1	**Histochemistry**	12	50 %	50 %	20 %	6	2	10	2	10	20
2	**Cytology**	30	50 %	50 %	50 %	15	5	25	5	25	50
3	**Nucleus and cytogenetics**	18	57 %	43 %	30 %	9	3.4	17.1	2.6	12.9	30
	Total	60			100%	30	10.4	52.1	9.6	47.9	100

Head of Department: Prof. Seham Abd El-Raouf Abd El-Aleem

Seham Abd El-Raouf Abd El-Aleem

Course Specifications of:

"*Medical Statistics and Research methodology for Master degree in Histology*"

2022-2023

University: Minia University

Faculty: Faculty of Medicine

Department offering the course: Public Health and Community Medicine department.

Course Specifications

It is a part of Postgraduate (MSC) Programme for Histology Department.

Programme(s) on which the course is given: First part MSC of Histology

Major or minor element of programmes: Statistics & research design

1- Basic Course Information		
Academic Year/ level: First Part MSC, histology	**Course title:** Medical Statistics and Research Methodology	**Code: HS200**
Number of teaching hours: **-Lectures :**20 hours 1h / week **Practical/clinical:** 10 hours **Total:** 30 hours		
2-Overall Aims of the course		

By the end of the course the candidate must be able to: 1- Use statistical principles to improve their professional work 2-Identify how to use research methodology appropriately in researches 3-Acquiring concept of critical interpretation of data	
3- **Intended learning outcomes of course (ILOs)**	
Upon completion of the course , the candidate should be able to :	
A-Knowledge and understanding	a.1 Describe methods of sampling strategies and sample size calculation a.2 Identify types of variables, different forms of data presentation a.3 Describe normal distribution curve, measures of central tendency and measures of dispersion. a.4 Define terms of research methodology a.5 Identify different study designs a.6 Explain screening tests idea and usefulness a.7 Describe different statistical tests and data analysis
B-Intellectual Skills	b.1 Interpret and summarize data b.2 Apply the proper test of significance for a specific data b.3Interpret selected test of significance

	b.4 Construct appropriate research methods.
C-Professional and practical skills	c.1 Calculate different sample sizes c.2 Calculate measures of central tendency and measures of dispersion c3. Calculate sensitivity, specificity, and predictive values c.4 Plan a research proposal
D- General and transferrable Skills	d.1 Write scientific thesis d.2 Take part and work in research team to conduct a specific study d.3 Organize and manage data, including graphic and tabular presentations

4-Course content			
	No. Of hours	Lecture	Practical
Statistics			
Sampling	1	1	
Sample size calculation	2	1	1
Normal distribution curve	1	1	
Measures of central tendency and deviation	4	2	2
Tests of significance	4	2	2
Data presentation	3	2	1
Research			
Introduction to research, research terminology	5	3	2
Study design, different types of study	6	4	2
Research proposal and principles of research	2	2	
Parts of literature	2	2	

5-Teaching and learning methods

5.1- Lectures: Face to face lectures, Pre-recorded video lectures

5.2- Practical lessons

5.3- Assignment

5.4- Online quizzes

6- Student assessment methods

6.1- **Research assignment:** to assess general transferable skills, intellectual skills.

6.2- Written exams:

Short essay: to assess knowledge

MCQs: assess knowledge and intellectual skills

problem solving: to assess intellectual skills

6.3- **Practical Exams:** to assess practical and intellectual skills

6.4- Oral Exams: to assess knowledge, understanding, attitude and communication

6.5- Structured oral exams: to assess knowledge

7-Weighting of assessments

Writing examination	50% (30 marks)
Oral examination:	30% (18 mark)
Practical examination	20% (12 mark)
Total	100% (60 marks)

8- List of references

8.1- Course notes: - Department Books, and notes.

-Logbook

8.2- Essential books (text books)

Essential Medical Statistics, Betty R. Kirkwood and J. A. Sterne (2000), 2nd edition

Introducing Research Methodology: A Beginners Guide to Doing a Research Project

8.3- Periodicals:

1-International Journal of Public Health

2-Egyptian Journal of Community Medicine

3-Journal of Biomedical Education

8.4-Web Sites:

https://lagunita.stanford.edu/courses/Medicine/MedStats-SP/SelfPaced/about?fbclid=IwAR3nfirLM4wnuEqqUjLjk8TCR7lzPdnpGqwin06L-GjFq32a62w3j6R5s9c

9- Facilities required for teaching and learning

1. Public Health and Community Medicine skill laboratory equipped with skill tools.
2. Class rooms for theoretical lectures and tutorials.
3.

Course coordinator:
Prof / Nashwa Nabil Kamal

Head of Department:

Prof / Nashwa Nabil Kamal

كلية / معهد: كلية الطب البشري

قسم :الصحة العامة

Medical Statistics and Research methodology for Master degree in Histology	مسمى المقرر
HS200	كود المقرر

A.Matrix of Coverage of Course ILOs by Contents

Contents (List of course topics)	Week No.	Intended Learning Outcomes (ILOs)			
		A. Knowledge & Understanding	B. Intellectual Skills	C. Professional & Practical skills	D. General & Transferable Skills
		A	B	C	D
Statistics					
Sampling		a1			
Introduction to Sample Size Calculation		a1		c1	
Normal distribution curve and screening		a3 , a6		c3	

Descriptive Statistics (measures of central tendency and measures		a3	b1	c2	
Data presentation and normal distribution curve		a2	b1		d3
Tests of Significance		a7	b2 ,b3		
Research					
Introduction to research "terminology"		a4			
Study design, different types of study		a5	b4		
Research proposal and principles of research			b4	c4	d2
Parts of literature					d1

B.Matrix of Coverage of Course ILOs by Methods of Teaching & Learning

Methods of Teaching & Learning	Intended Learning Outcomes (ILOs)			
	A. Knowledge & Understanding	B. Intellectual Skills	C. Professional & Practical skills	D. General & Transferable Skills
	A	B	C	D
Lecture	a1,a2,a3,a4,a5, a6,a7	b1,b2,b4		
Practical			c2,3	d1,d2,d3
Assignment	a1,a3	b4	c4	d1,d2,d3
Online quizzes	a6,a7	b3	c1	d1,d2,d3

C. Matrix of Coverage of Course ILOs by Methods of Assessment

Methods of Assessment	Intended Learning Outcomes (ILOs)			
	A. Knowledge & Understanding	**B. Intellectual Skills**	**C. Professional & Practical skills**	**D. General & Transferable Skills**
	A	**B**	**C**	**D**
Written exam	a1,a2,a5	b1,b4		
Practical exam			c1,c2,c3.c4	d1,d2,d3
Oral Exam	a4,a7	b1,b4,b3		

Blueprint of Statistics and research examination paper for candidates of master degree of Histology

Topic	Hours	Knowledge%	Intellectual%	%topic	Knowledge		Intellectual		Marks
					No of item	mark	No of item	mark	
Statistics	9	70%	30%	45%	**2**	**8**	**1**	**7**	**15**
Research	11	60%	40%	55%	**1**	**8**	**1**	**7**	**15**
Total	**20**			100%					**30**

Head of Department:

Prof / Nashwa Nabil Kamal

Course Specifications of:

"General and systemic Histology for Master degree in Histology"

2022-2023

University: Minia University

Faculty: Faculty of Medicine

Department offering the course: Histology & Cell Biology department.

Course Specifications

It is a part of Postgraduate (MSC) Programme for Histology & Cell Biology department.

Programme(s) on which the course is given: Second part MSC of Histology

Major or minor element of programmes: General & systemic histology

1- Basic Course Information		
Academic Year/ level: Second Part MSC, histology	**Course title:** General & systemic histology	**Code:** HS 200
Number of teaching hours: **-Lectures :**60 hours 2h / week **Practical/clinical: 60** hours 2h / week **Total:** 120 hours		
2-Overall Aims of the course		

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

1-Acquire sufficient medical knowledge in the basic biomedical, methods and tools of teaching in Histology & Cell Biology and to know in detail the cell structure, function and its specific specialization.
2-Practice routine histological evaluation of specimens relating to tissues, to carry out routine diagnostic procedures including hematological, cytological, Immunological and ultrastructural investigations.
3-Act habitually the capability to be a scholar, understanding and applying basics, methods and tools of scientific research in Histology & Cell Biology on clinical aspects, working knowledge on current databases, automated data retrieval systems, referencing and skill in writing scientific papers.
4-Use scientific knowledge to continuously update and improve practice, demonstrate interpersonal and communication skills that ensure effective information exchange and teamwork. Function as supervisor, and trainer in relation to colleagues, medical students and other health professions.
5-Acquire skills of lifelong learning and maintenance of competence and ability for continuous medical education and learning in subsequent stages in Histology & Cell Biology.

3- **Intended learning outcomes of course (ILOs)**

Upon completion of the course, the candidate should be able to:

A-Knowledge and understanding	a.1. Define basics and updates in the structure and ultrastructure of different tissues and organs of human body. a.2 Discuss the epithelial types and their structural adaptation to their sites and function. a.3. Identify types of connective tissue proper and its special types with special reference to their constituents. a.4. Recognize in details the structure and ultrastructure of 3 types of muscle cells. a.5. Discuss the histological structure of the vascular, nervous and lymphatic tissue. a.6. Explain the structure and function of different blood cells with special reference to their role in health and disease. a.7. Describe the structure, ultrastructure and function of the cells forming different body organs with special reference to their clinical applications.

B-Intellectual Skills	b.1 Correlate the histological structure of different types of cells with their function and related common diseases. b.2 Compare between various types of epithelia and correlate their structure and sites to their function. b.3 Differentiate between different types of connective tissue with reference to their clinical applications. b.4 Compare between 3 types of muscle cells and correlate their structure to their common diseases. b.5 Analyze the detailed structure of vascular, nervous and lymphatic tissues. b.6 Interpret between blood, vascular, nervous and lymphatic diseases at the microscopic level. b.7 Appraise the detailed structure and ultrastructure of the cellular components of the body organs in health and disease.
C-Professional and practical skills	c.1 Examine the histological tissue sections with different types of microscopes, and assess the microscopic features of tissue structure in health and disease. c.2. Differentiate between different stains used to demonstrate the different constituents of the tissues. c.3. Photograph the microscopic fields through computer connected camera, with analyzing these pictures using image analysis & morphometry efficiently and write comments. c.4. Evaluate the histological, histochemical and immunohistochemical stained tissues. c.5. Solve problems in the laboratory and during teaching with offering solutions that maintain a high order of quality control.

D- General and transferrable Skills	d.1. Gather the medical information in written, oral and electronic forms. d.2 Respect dealing with practical specimens, resources, copyrights and avoid plagiarism. d.3 Respect seniors and colleagues. d.4 Communicate ideas as well as skillful interaction with others and for effective teaching. d.5 Work constructively and cooperatively as a team member or leader. d.6 Manage time effectively. d.7. Prepare and integrate scientific activities as seminars, journal clubs, scientific meetings or conferences that help in improving his practice through constant self-evaluation and life-long learning

4-Course content			
	No. Of hours\week	Lecture	Practical
General histology			
Epithelium	4	2	2
Connective tissue (part I)	4	2	2
Connective tissue (part II)	4	2	2
Muscle tissue	4	2	2
Nervous tissue (part I)	4	2	2
Nervous tissue (part II)	4	2	2
Vascular tissue (part I)	4	2	2
Vascular tissue (part II)	4	2	2
Blood (part I)	4	2	2
Blood (part II)	4	2	2
Lymphatic tissue (part I)	4	2	2
Lymphatic tissue (part II)	4	2	2
Immunology (part I)	4	2	2

Immunology (part II)	4	2	2
Systemic histology			
Skin	4	2	2
Respiratory system	4	2	2
Digestive system (part I)	4	2	2
Digestive system (part II)	4	2	2
Digestive glands	4	2	2
Endocrine	4	2	2
Urinary system (part I)	4	2	2
Urinary system (part II)	4	2	2
Male genital system	4	2	2
Female genital system (part I)	4	2	2
Female genital system (part I)	4	2	2
Special senses(eye) (part I)	4	2	2
Special senses(eye) (part II)	4	2	2
Special senses(ear)	4	2	2
CNS (part I)	4	2	2

CNS (part II)	4	2	2
Total	120	60	60

5-Teaching and learning methods

5.1- Lectures: Face to face lectures, Pre-recorded video lectures

5.2- Practical lessons: **-Observation of different light microscopic slides**
-Light microscopic slides preparation and examination & power point slides for electron microscopic slides examination

5.3- Assignment

6- Student assessment methods

6. 1- log book

6.2- **Written exams:**

Short essay: to assess knowledge

Problem solving: to assess intellectual skills

MCQ: to assess knowledge and intellectual skills

6.3- **Practical Exams:** to assess practical skills in the form of **Spot diagnosis of different types of tissues through microscopic examination and ppt slides and Interpretation of slides with detailed cellular assessment.**

6.4- **Oral Exams:** to assess knowledge, understanding, attitude, and communication.

7-Weighting of assessments

Written examination	280(1st paper=140) (2nd paper=140)
Oral examination:	210
Practical examination	210
Total	700

8- List of references

8.1- Course notes: - Department Books, and notes.

-Logbook

8.2- Essential books (textbooks)

- Wheater's Functional Histology. A Text and Colour Atlas. 7th Edition 2023.
  Authors: Geraldine O'Dowd, Sarah Bell, Sylvia Wright
  Paperback ISBN: 9780702083358
  Paperback ISBN: 9780702083341

- Mescher AL (2021). Junqueira's Basic Histology: Text and Atlas 16th Edition, McGraw-Hill Education.

- Gartner Textbook of Histology. 5th Edition Leslie Gartner - 2020
  Author: Leslie Gartner
  Paperback ISBN: 9780323672726
  eBook ISBN: 9780323672740

- Netter's Essential Histology With Correlated Histopathology-3rd Edition - February 2, 2020.
  Authors: William Ovalle, Patrick Nahirney
  Paperback ISBN: 9780323694643
  9 7 8 - 0 - 3 2 3 - 6 9 4 6 4 – 3.
  eBook ISBN: 9780323694667

- Essentials of Genetics 10th Edition: 10th edition, 2020
  Authors: Charlotte Spencer, William Klug, Michael Cummings.
  ISBN13: 9780134898414
  ISBN10: 0134898419

- Regenerative Medicine and Stem Cell Biology, Nagwa El-Badri 2020

Stem cells & Tissue culture:

- Meyer, U., Meyer, T., Handschel, J. and Wiesmann, H.P. eds., 2009. *Fundamentals of tissue engineering and regenerative medicine*. Springer Science & Business Media.

Cell biology: _(eBooks)

- Cell Biology/Introduction/Cell size - Wikibooks, open books for an open world: **https://en.wikibooks.org/wiki/Cell_Biology**
- Cells **and genomes:_(eBooks)**
  https://www.academia.edu/5121556/INTRODUCTION_TO_THE_CELL_part_1_eBooks

For practical:

- Alomari, M., 2004. Color Atlas of Cytology, Histology and Microscopic Anatomy.
- **Dr. Jastrow's Light- and Electron Microscopic Atlas:** **http://www.drjastrow.de/WAI/EM/EMAtlas.html**
- Eroschenko, V.P. and Di Fiore, M.S., 2013. *DiFiore's atlas of histology with functional correlations*. Lippincott Williams & Wilkins.

8.3- Periodicals:

Egyptian Journal of Histology

Cell and tissue research

8.4-WebSites:

http://www.histology-world.com

http://histo.life.illinois.edu/histo/atlas/slides.php

9- Facilities required for teaching and learning

1. Histology & Cell Biology research laboratory equipped with skill tools.
2. Classrooms for theoretical lectures and tutorials.

Course coordinator:

Prof. Nashwa Fathy Al-Tahawy

Head of Department:

Prof. Seham Abdel Raouf Abdel Aleem

Seham Abd El-Raouf Abd El-Aleem

Date of the last update:6\3\2023

نموذج رقم (١١أ)

مسمى المقرر	MSC in Histology & Cell Biology
كود المقرر	**HS 200**

جامعة/أكاديمية : جامعة المنيا.....
كلية / معهد: كلية الطب
قسم: الهستولوجي وبيولوجيا الخلية

A. Matrix of Coverage of Course ILOs By Contents

Contents (List of course topics)	Week No.	Intended Learning Outcomes (ILOs)			
		A. Knowledge & Understanding	B. Intellectual Skills	C. Professional & Practical skills	D. General & Transferable Skills
		A	B	C	D
General histology					
Epithelium		a1,a2	b1,b2	c1,c2,c3,c4,c5	d1,d2,d3,d4,d5,d6,d7
Connective tissue		a1,a3	b1,b3	c1,c2,c3,c4,c5	d1,d2,d3,d4,d5,d6,d7

Muscular tissue		a1,a4	b1,b4	c1,c2,c3,c4,c5	d1,d2,d3,d4,d5,d6,d7
Nervous tissue		a1,a5	b1,b5,b6	c1,c2,c3,c4,c5	d1,d2,d3,d4,d5,d6,d7
Vascular tissue		a1,a5	b1,b5,b6	c1,c2,c3,c4,c5	d1,d2,d3,d4,d5,d6,d7
Blood		a1,a6	b1,b6	c1,c2,c3,c4,c5	d1,d2,d3,d4,d5,d6,d7
Lymphatic tissue		a1,a5	b1,b5,b6	c1,c2,c3,c4,c5	d1,d2,d3,d4,d5,d6,d7
Immunology		a1,a6	b1,b6	c1,c2,c3,c4,c5	d1,d2,d3,d4,d5,d6,d7
Systemic histology					
Skin		a1,a7	b1,b7	c1,c2,c3,c4,c5	d1,d2,d3,d4,d5,d6,d7
Respiratory system		a1,a7	b1,b7	c1,c2,c3,c4,c5	d1,d2,d3,d4,d5,d6,d7

Digestive system		a1,a7	b1,b7	c1,c2,c3,c4,c5	d1,d2,d3,d4,d5,d6,d7
Digestive glands		a1,a7	b1,b7	c1,c2,c3,c4,c5	d1,d2,d3,d4,d5,d6,d7
Endocrine system		a1,a7	b1,b7	c1,c2,c3,c4,c5	d1,d2,d3,d4,d5,d6,d7
Urinary system		a1,a7	b1,b7	c1,c2,c3,c4,c5	d1,d2,d3,d4,d5,d6,d7
Male genital system		a1,a7	b1,b7	c1,c2,c3,c4,c5	d1,d2,d3,d4,d5,d6,d7
Female genital system		a1,a7	b1,b7	c1,c2,c3,c4,c5	d1,d2,d3,d4,d5,d6,d7
Special sense (eye)		a1,a7	b1,b7	c1,c2,c3,c4,c5	d1,d2,d3,d4,d5,d6,d7
Special sense (ear)		a1,a7	b1,b7	c1,c2,c3,c4,c5	d1,d2,d3,d4,d5,d6,d7
CNS		a1,a7	b1,b7	c1,c2,c3,c4,c5	d1,d2,d3,d4,d5,d6,d7

B. Matrix of Coverage of Course ILOs by Methods of Teaching & Learning

Methods of Teaching & Learning	Intended Learning Outcomes (ILOs)			
	A. Knowledge & Understanding	B. Intellectual Skills	C. Professional & Practical skills	D. General & Transferable Skills
	A	B	C	D
Lecture	a1,a2,a3,a4,a5,a6 ,a7	b1,b2,b3,b4,b5,b6,b7		
Practical			c1,c2,c3,c4,c5	
Presentation/seminar Journal club Thesis discussion Training courses & workshops				d1,d2,d3,d4,d5,d 6,d7

Seham Abd El-Raouf Abd El-Aleem

C.Matrix of Coverage of Course ILOs by Methods of Assessment

Methods of Assessment	Intended Learning Outcomes (ILOs)			
	A. Knowledge & Understanding	B. Intellectual Skills	C. Professional & Practical skills	D. General & Transferable Skills
	A	B	C	D
Written exam	a1,a2,a3,a4,a5,a6,a7	b1,b2,b3,b4,b5,b6,b7		
Practical exam			c1,c2,c3,c4,c5	
Oral Exam	a1,a2,a3,a4,a5,a6,a7	b1,b2,b3,b4,b5,b6,b7		

Blueprint of Histology and cell biology department for candidates of master degree “second part” examination paper (280 marks)

	Topic	Hours	Knowledge %	Intellectual %	% of topic	N of items per topic	Knowledge		Intellectual		Marks	Actual marks
							N of items	mark	N of items	mark		
	General histology	20	67 %	33 %	33.3 %	8	5.4	62.4	2.6	30.5	92.4	95
	Systemic histology	40	57 %	43 %	66.6 %	11	6.8	106.9	5.2	80.7	187.6	185
	Total	60			100%	19	12.2	169.3	7.8	111.2	280	280

Head of Department: Prof. Seham Abd El-Raouf Abd El-Aleem

Seham Abd El-Raouf Abd El-Aleem