Program Specification for Diploma Degree in diagnostic immunology

Code: 1208600

University: Alexandria **Faculty:** Medical Research Institute

Program Specification

A-Basic information

1- Program title: Diploma in diagnostic immunology

2- Program type: **single** [√] **double** [ ] **multiple** [ ]

3- Department(s) :Immunology

4- Coordinator : Prof. Dr. Hossam Ghoneim

5- External evaluator(s): Prof. Dr. SeragEldin

6- Last date of program specification approval 5/6/2014

B-Professional Information

1- Program aims:

Provide the students with a framework for acquiring knowledge about the role of immunology in medicine.

By end of the program, the student should:

1. Demonstrate **knowledge** of essential facts , concepts, principles and theories of normal and abnormal immunological function
2. Acquire an appropriate functional background of cells, tissues, organs & systems involved in immunologic response.
3. Acquire basic **knowledge** of immunology
4. Describe the **integration** of immunologic functions, which characterize the performance of the human body.
5. **Integrate** concepts and relate ideas covered in different parts of the degree programme to analyze and **solve problems**.
6. Manage common and less common **clinical immunology problems** properly

7. Be able to perform basic and some advanced procedural / **practical skills** competently
8. Be able to carry out immunologic **investigations** and relevant **techniques**.

9. Understand basics behind the choice of appropriate **tests**
10. Communicate effectively through written and oral presentation
11. Establish working relationship with colleagues and work effectively as a part of a team
12. Use information technology to increase his immunology knowledge.

2- Intended learning outcomes (ILOS)

a- knowledge and understanding:

a1-Recall the general description of immune system and describe different molecules that share in immunological cellular interaction.

a2-Describe cell surface ligand interaction andexplain antigen processing and presentation.

a3- Define types of T cells, their response to antigens and relationship to B cells.

a4- Discuss the different techniques for serological diagnosis of infectious diseases as hepatitis A, B, C, EBV, TB, immunologic and molecular techniques.

b- Intellectual skills:

b1- Illustrate the basis of immune system and demonstrate the innate immune mechanisms.

b2- Illustrate the regulation of immune response and cellular activation in the immune system: signal transduction.

b3- Demonstrate primary and secondary immune response to defend the body against microorganisms.

b4-Interpret results of different immunological tests in correlation with clinical and laboratory data.

b5- Distinguish between protective and hazards defense mechanisms.

c- Professional and practical skills:

c1- Use immunological laboratory techniques for diagnosis of cell mediated and humoral immune response.

c2- Use immunological laboratory techniques to differentiate T and B cells.

d- General and transferable skills:

d1- Communicate through group discussion

d2- Work as a part of team

d3- Develop skills in information technology

d4-Develop skills for oral presentation

d5- Develop skills in reading and research

d6- Develop skills to work safely in a laboratory environment

3- Academic standards

3a. External references for standards (Benchmarks)

Generic Academic Reference Standards if the National Authority for Quality Assurance and Accreditation of Education (NAQAAE)
Adopted at MRI council 12/2/2014 and re adopted at 15/1/2023

Last date of Academic Reference standards (ARS) approval by Institute Council: 15/1/2023

3b. Comparison of provision to selected external references

Comparison between NAQAAE and ARS

NAQAAE	ARS for Diploma Diagnostic in Immunology
A1-Basic facts , theories, of the specialty and related subjects/ fields	A1- Recall the general description of immune system and describe different molecules that share in immunological cellular interaction.
A2-Fundamentals of ethical & legal practice	A2- Describe cell surface ligand interaction and explain antigen processing and presentation. A3-Define types of T cells, their response to antigens and relationship to B cells. A4-Discuss the different techniques for serological diagnosis of infectious diseases as hepatitis A, B, C, EBV, TB, immunologic and molecular techniques.
A3 -Quality standards of the practice	A5-Recall the immune response to infections and understand the different mechanisms of immune damages.
A4- Effect of the specialty practice on the environment including rules for environmental conservation	A6-Understand how to present clinical data and recall national and international relevant clinical cases
B1-Determine , analyze & prioritize problems	B1- Illustrate the basis of immune system and demonstrate the innate immune mechanisms
B2- Solve common problems effectively	B2- Illustrate the regulation of immune response and cellular activation in the immune system: signal transduction. Demonstrate primary and secondary immune response to defend the body against microorganisms.
B3- Critically appraise researches and articles	B3- Interpret results of different immunological tests in correlation with clinical and laboratory data
B4-Evaluate professional risks	B4-Distinguish between protective and hazards defense mechanisms
B5- Make decisions to solve professional problems according to available data	B5- Illustrate how to present clinical data in case presentations

C1- Practice basic professional skills (clinical/practical & procedural skills) competently	C1-Use immunological laboratory techniques for diagnosis of cell mediated and humoral immune response and to differentiate T and B cells.
C2- Write reports related to the profession (Patient records, self appraisal/ audit reports etc...)	C2- Gain skills in applying different immunodiagnostic and molecular tests
D1- Communicate effectively using all methods	D1- Communicate through group discussion
D2- Use information technology to improve his/her professional practice	D3 Develop skills in information technology
D3- Practice self appraisal and determines his learning needs	D3 Develop skills in information technology
D4- Use different sources of information to obtain data	D3 Develop skills in information technology
D5- Work in teams **D6- Manage time effectively**	D2 Work as a part of team

4- Curriculum structure and contents

4.a program duration: 3 semesters

4.b program structure :

4.b.i- No. of hours per week in each year/semester:

Semester	Core Courses	Elective Courses
	No. of hours	No. of hours
First semester	10 H	
Second semester	2 H	8 H
Third semester	10 H	

4.b.ii- No. of credit hours	**Lectures**	**20**	**Practical**	**10**	**Total**	**30**
	Compulsory	**22**	**Elective**	**8**	**Optional**	**0**

4.b.iii- No. of credit hours of specialized courses

4.b.iv- No. of credit hours of other

4.b.v- Program levels (in credit-hours system) N/A

5- Program Courses

5.1- Core courses (22 CH)

Code No.	Course Title	No. of credit hours	No. of hours /week	
			Lecture	Practical
1708601	Elementary immunology I	2	2	-
1708602	Elementary immunology II	4	3	2
1708603	Cellular Immunology I	4	2	4
1708604	Diagnostic Immunology I	4	2	4
1708605	General clinical Immunology I	4	3	2
1708606	Interactive clinical immunology	2	2	-
1708607	Hypersensitivity reactions	2	1	2
	Total	22	15	14

5.2- Elective I (8 CH)

Code No.	Course Title	No. of credit hours	No. of hours /week	
			Lecture	Practical
1701720	Biochemistry	2	1	2
1705720	Hematology	2	1	2
1718711	Immunoheamatology I	2	1	2
1716720	Bacteriology	2	1	2
1712720	Medical Biophysics	2	1	2
1717720	Chemical Pathology	2	1	2
1721720	Medical statistics	2	1	2
1713720	Genetics	2	1	2

6- Program admission requirements

Graduate students with a diploma or MSc of science or medical degrees or an equivalent

7- Teaching and Learning Methods

1. Lecture
2. Practical/Clinical
3. Brainstorming
4. Discussion Groups
5. Problem Solving
6. Self-Directed Learning
7. e-learning
8. Project

8- Regulations for progression and program completion

For the progression and completion of the program to obtain the degree of **Diagnostic immunology** the student must:

complete 30. credit hours with CGPA of at least C+ through courses

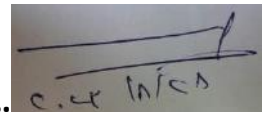
8-Evaluation of Students enrolled in the program.

Tool evaluation	Intended learning outcomes being assessed
Written	ILOs a&b
Practical	ILOs c
Oral	ILOs a ,b &d
Semester Work	ILOs b& d

Evaluation of program intended learning outcomes

Evaluator	Tool	Sample
1- Senior students	questionnaire	At least 50 %
2- Alumni	questionnaire	Representative sample
3- Stakeholders (Employers)	meeting	Representative sample
4- External Evaluator(S) External Examiner (s)	Report	Not available
5- Other		

Program coordinator:

Name: Prof. Dr.Hossam Ghoneim **Signature …** 
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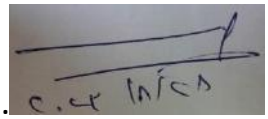
Department Head:

Name: Prof. Dr.Hossam Ghoneim Signature: …… 
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Date of Department Council Approval: 28/8/2023

Generic attributes vs program aims

Generic Graduate Attributes of NAQAAE	Graduate Attributees of diploma degree of diagnostic immunology By the end of this program, graduate should be able to	Program Aims
Apply specialized knowledge related to professional skills in the field of specification.	Apply specialized knowledge related to professional skills in the field of immunology	• Acquire basic knowledge of immunology • **Integrate** concepts and relate ideas covered in different parts of the degree programme to analyze and **solve problems**. • Describe the **integration** of immunologic functions, which characterize the performance of the human body. • Demonstrate **knowledge** of essential facts , concepts, principles and theories of normal and abnormal immunological function • Acquire an appropriate functional background of cells, tissues, organs & systems involved in immunologic response. .
Identify professional problems in the field of specification and propose solutions to them.	Identify professional problems in the field of immunology and propose solutions to them.	• Manage common and less common clinical immunology problems properly
Master professional skills in the field of specification.	Master professional skills in the field of immunology	• Be able to perform basic and some advanced procedural / practical skills competently • Understand basics behind the choice of

		appropriate **tests** • Be able to carry out immunologic **investigations** and relevant **techniques**.
Use appropriate technology means in his/her professional practice of the field of specification.	Use appropriate technology means in his/her professional practice of the field of immunology.	• Be able to carry out immunologic investigations and relevant techniques. • Use information technology to increase his immunology knowledge.
Communicate and lead work teams in a systematic, professional manner.	Communicate and lead work teams in a systematic, professional manner.	• Establish working relationship with colleagues and work effectively as a part of a team • Communicate effectively through written and oral presentation
Take professional decisions in case of available information.	Take professional decisions in case of available information.	• Use information technology to increase his immunology knowledge.

Course Vs Program ILOs matrix

Course Title	a1	a2	a3	a4	b1	b2	b3	b4	b5	c1	c2	d1	d2	d3	d4	d5	d6
Elementary immunology I **1208601**	x				x							X	x	x	x	x	
Elementary immunology II **1208602**		x				X				x		X	x	x	x	x	x
Cellular Immunology I **1208603**			x				x				x	X	x	x	x	x	x
Diagnostic Immunological Applications (I) **1208604**				x				x				X	x	x	x	x	X
Essential Clinical Immunology **1208605**									x			X	x	x	x	x	
Immune and inflammatory disorders **1208606**												X	x	x	x	x	X
Tumor immunology **1208607**												X	x	x	x	x	X

ARS vs ILOs matrix

ILOs / ARS	A1	A2	A3	A4	B1	B2	B3	B4	B5	C1	C2	D1	D2	D3	D4	D5	D6
A1- Recall the general description of immune system and describe different molecules that share in immunological cellular interaction.	√	√	√														
A2- Describe cell surface ligand interaction andexplain antigen processing and presentation.				√													

A3- Define types of T cells, their response to antigens and relationship to B cells.																
A4- Discuss the different techniques for serological diagnosis of infectious diseases as hepatitis A, B, C, EBV, TB, immunologic and molecular techniques.								√								
A5- Recall the immune response to infections and understand the different mechanisms of immune damages.																
A6- Define the concept of hypersensitivity reactions and demonstrate different types of allergic reactions.					√											
A7- Define the concept of hypersensitivity reactions and demonstrate different types of allergic reactions.																
B1- Illustrate the basis of immune system and demonstrate the innate immune mechanisms.						√	√	√								
B2- Illustrate the regulation of immune response and cellular activation in the immune system: signal transduction.							√									
B3- Demonstrate primary and secondary immune response to defend the body against microorganisms.								√								
B4- Interpret results of different immunological tests in correlation with clinical and laboratory data.						√										
B5- Distinguish between protective and hazards defense mechanisms.									√							
B6- Illustrate how to present clinical data in case presentations.							√									
B7- Illustrate inter-relation between allergic reactions and discuss differential diagnosis based on clinical signs.								√								
C1- Use immunological laboratory techniques for diagnosis of cell mediated and humoral immune response.																
C2- Use immunological laboratory techniques to differentiate T and B cells.							√									

C3- Gain skills in applying different immunodiagnostic and molecular tests.																	
C4- Gain skills to diagnose and investigate clinical cases which have underlying immune pathology											√						
C5- Gain skills to differentiate between different allergic reactions.											√						
D1- Communicate through group discussion																	
D2- Work as a part of team													√				
D3- Develop skills in information technology														√			
D4- Develop skills for oral presentation															√		
D5- Develop skills in reading and research																√	
D6- Develop skills to work safely in a laboratory environment																	√

Program Aims vs ILOs Matrix

Aims \ ILOs	a1	a2	a3	a4	b1	b2	b3	b4	b5	c1	c2	d1	d2	d3	d4	d5	d6
Demonstrate **knowledge** of essential facts , concepts, principles and theories of normal and abnormal immunological function	+	+			+				+								
Acquire an appropriate functional background of cells, tissues, organs & systems involved in immunologic response.			+			+	+			+	+						
Acquire basic **knowledge** of immunology	+	+	+		+	+											

Describe the **integration** of immunologic functions, which characterize the performance of the human body.								+	+	+	+						
Integrate concepts and relate ideas covered in different parts of the degree program to analyze and **solve problems**.				+				+									
Manage common and less common **clinical immunology problems** properly								+									
Be able to perform basic and some advanced procedural / **practical skills** competently				+						+	+						
Be able to carry out immunologic **investigations** and relevant **techniques**				+													
Understand basics behind the choice of appropriate **tests**				+													
Communicate effectively through written and oral presentation															+	+	+
Establish working relationship with colleagues and work as a part of a team												+	+				+
Use information technology to increase his immunology knowledge													+	+			+

Teaching and Learning Methods Vs Courses Matrix

Degree: Diploma in Diagnostic immunology Code:1208600

	1208601	1208602	1208603	1208605	1208606	1208607
Lecture	x	x	X	x	x	x
Practical/Clinical		x	X	x		x
Brainstorming	x	x	X	x	x	x
Discussion Groups	x	x	X	x	x	x
Problem Solving	x	x	X	x	x	x
Self-Directed Learning	x	x	X	x	x	x
e-learning						
Project	x	x	X	x	x	x