PROGRAMME SPECIFICATION

MD Pediatrics

Faculty of Medicine– Mansoura University

- Administrative information

Programme Title & Code	MD Pediatrics (PED 600)
Final award/degree	MD Pediatrics
Department (s)	Pediatrics
Coordinator	Dr. Noha Tantawy
External evaluator (s)	Prof Mohamed **Ahmed Rowisha**
Date of approval by the Department`s council	**27/4/2016**
Date of last approval of programme specification by Faculty council	9-8-2016

Professional information

(1) Programme Aims:

The broad aims of the Programme are as follows:

To make the candidate:

1. Oriented with the fundamental and recent updates of physiology and its application in pediatrics in order to understand the mechanism of different pediatric diseases to help him reach a diagnosis.
2. Comprehended with the pathogenesis of common and uncommon pediatric disorders by teaching him basics and advances in the science of pathology.
3. Professional in communication with the parents in the field of history taking, genetic counseling, antenatal counseling and how to deliver breaking out news.
4. Highly skilled in performance of systematic examination to help him reach diagnosis of common and very rare disorders.
5. Aware of recent diagnostic tools either non-invasive and invasive and how to interpret results in proper and easy way.
6. Comprehended in critical illness, emergency medicine and life saving procedure in PICU and emergency department.
7. Familiar with the modes of mechanical ventilation in PICU and NICU including how to monitor and wean from mechanical ventilator and how to manage suspected complications.
8. Follow the recent guidelines in management of common pediatric disorders.
9. Able to pick up most of the genetic syndromes and primary immunodeficiency in on molecular & immunological bases.
10. Capable to manage the majority of pediatric disorders by teaching him recent updates in different pediatric subspecialties (Advanced courses).

(2) Intended Learning Outcomes (ILOs):

On successful completion of the programme, the candidate will be able to:

A. Knowledge and Understanding

- **A1.** Define in details physiologic background and derangement of pediatric disorders namely, respiratory, hematologic, renal, circulatory and gastrointestinal.
- **A2.** Define the pathological features and recent trends in pathogenesis of different pediatric disorders such as respiratory, cardiovascular, renal, hematologic, oncologic and gastrointestinal disorders.
- **A3.** Underline the principles of statitistics used in medical practice, research methodologies and ethics.
- **A4.** Recall basic knowledge as regards normal and abnormal pattern of child development and state principles of preventive pediatrics including updates in immunization.
- **A5.** Specify nutritional requirements of different age groups including breast milk advantages, obstacles and how to be managed and diagnosis and treatment of nutritional disorders with special focus on the problem of micronutrient deficiencies and over nutrition.
- **A6.** Define recent trends in diagnosis and management of common and uncommon neonatal problems (Respiratory, circulatory, renal, gastrointestinal, neurological and metabolic) and outlining different modes of ventilating a newborn.
- **A7.1** Specify the common infectious disorders (Bacterial, viral, fungal and parasitic) including health care associated infection, HIV, hemorrhagic fevers, anaerobic infections and sexually transmitted diseases in children and its management with special concern to infections in immunocompromized children and updated protocols of management of these patients.
- **A7.2** Define updates in diagnosis and management of vasculitis, rheumatoid arthritis and immune deficiency disorders.

- **A8.** Recall the principles of genetics (patterns of inheritance, principles of teratogenicity, mutations, microdeletions and genetics of hemoglobin) and how to deal with common genetic disorders, dysmorphic child and inborn errors of metabolism.
- **A9.** Underline pathogenesis, diagnosis and treatment of the common pediatric renal disorders especially nephritic and nephrotic syndromes, SLE, renal tubular defects, renal failure and voiding disorders.
- **A10.1** Specify common congenital and acquired cardiovascular diseases particularly RF/RHD, Kawasaki, collagen disorders, myocarditis, ischemic heart diseases, cardiac tumors and cardiomyopathy in pediatric age group, updates in diagnosis and management using pharmacotherapy and cardiac catheter.
- **A10.2** Recall pulmonary manifestations of heart diseases, the features and management of CHF, arrhythmia and metabolic heart diseases.
- **A11.** Identify anemias, myelodysplasia, WBCs disorders including immunodeficiency, fibrinolytic system disorders, bleeding disorders, leukemia, lymphoma and solid tumors clinical presentation and plan of management together with early suspicion of malignancy in pediatric age group.
- **A12.** Specify molecular mechanism, diagnostic features and therapy of common pediatric endocrinal disorders including (pituitary, thyroid, parathyroid, adrenal disorders, obesity, bone metabolic defects, diabetes and disorders of sex and differntiaition).
- **A13.** Define common neurological and psychological problems and how to deal with including metabolic encephalopathies, developmental delay, stroke, speech and language disorders, autism, ADHD, neurocutaneous syndromes, myopathy, neuropathy and epilepsy in children.
- **A14.** Outline the recent trends in different gastrointestinal and hepatic disorders and how to diagnose and manage.
- **A15.** Define different pediatric emergencies and how to manage with special emphasis on advanced ventilatory support.

- **A16.** List causes, features and management of common developmental, inflammatory and allergic respiratory disorders including pulmonary manifestations of immunodeficiency and stem cell application in clinical setting.
- **A17.** Specify the updates, rare problems and sophisticated management of disorders related to one pediatric specialty namely; infection, nutrition, neonatology, genetics, nephrology, cardiology, hematology, endocrinal, neurology, gastroenterology, ICU and respiratory according to the interest of the candidate.
- **A17.1** Delineate diagnosis and treatment of atypical bacteria, atypical mycobacteria, zoonotic, HIV, hepatic infections, infections in special groups such as neonates, transplant recipients and patients with 1ry immunodeficiency together with principles of enteral and parenteral feeding and nutritional management of critically ill children and related topics of oxidative stress and relation of nutrition to immunity.
- **A17.2** Recall recent advances in diagnosis and management of neonatal CNS, respiratory, cardiovascular, GIT, hematological, retinal, metabolic and surgical problems in addition to underlining how to interpret neonatal cranial US, brain CT, MRI and EEG and stating updated guidelines of neonatal resuscitation and management of preterm in delivery room.
- **A17.3** Specify updates in diagnosis and recent treatment strategies of genetic and metabolic disorders with special concern to molecular diagnosis and flow cytometry.
- **A17.4** Outline the detailed and updated management of chronic kidney disease in children including non dialytic and dialytic management particularly hemodialysis, peritoneal dialysis and renal replacement therapy with special focus on medical, surgical, ethical and social consideration and laboratory preparation for renal transplant.
- **A17.5** Specify the indications, interpretation and complications of routine and sophisticated cardiac diagnostic and theraputic tools in children especially CXR, ECG, echo, stress ECG, cardiac catheterization and radiofrequency ablation

together with updated management of cardiac arrhythmias, strategies of cardiovascular health promotion and listing indications, principles and complications of cardiac surgery in children.

- **A17.6** Delineate epidemiology, genetic basics, new diagnostic modalities and updated treatment protocols of hematological diseases, myeloproliferative disorders, hemophogocytic syndromes and oncological diseases in children with special reference to iron chelation therpy, stem cell therpy and immunization of child with cancer.
- **A17.7.1** Define molecular genetics, the pathophysiology, diagnosis, complications and treatment of diabetes mellitus type1, type 2, neonatal diabetes, MODY and hypoglycemia.
- **A17.7.2** Specify advances in diagnosis and treatment of pubertal disorders, pituitary, thyroid, parathyroid, suprarenal disorders and obesity with special concern to management of short stature and disorders of sex and differentiation.
- **A17.8** Underline new diagnostic modalities and updated treatment strategies of metabolic encephalopathies, developmental delay, mitochondrial diseases, peroxisomal disorders, stroke, speech and language disorders, autism, ADHD, neurocutaneous syndromes, myopathy, neuropathy and epilepsy in children.
- **A17.9.1** Specify the updates in pathogenesis, assessment and treatment of hepatic fibrosis, principles of liver transplantation, hepatocyte and stem cell therapy in hepatic disorders.
- **A17.9.2** Define classification, pathogenesis and management of functional GIT, motility disorders and gastrointestinal & feeding problems in neurologically handicapped children and list recent advances in diagnostic and therapeutic GIT endoscopy and evaluation and management of GIT bleeding.
- **A17.10** Specify detailed management and critical care aspects of transplantation regarding care of the child in PICU after transplant as mechanical ventilation, manage of suspected infection and rejection.

- **A17.11** Specify molecular, genetic and conventional diagnosis and treatment of allergic, immunological, rheumatological disorders, lung parenchymal diseases, airway and pleural diseases and list indications of stem cell therpy.

B. Intellectual skills

- **B1.** Integrate basic biomedical sciences with clinical care.
- **B2.** Interpret symptoms and signs of children disease to reach proper diagnosis and differential diagnosis.
- **B3.** Interpret investigations reports concerning the most common pediatric problems.
- **B4.** Construct appropriate management strategies for patients with common diseases, both acute and chronic, including medical and psychiatric conditions.
- **B5.** Apply personal judgment for analytical and critical problem solving.
- **B6**. Design an initial course of management for stabilization of patients with serious illnesses.
- **B7**. Classify factors that place individuals at risk for disease or injury, to determine strategies for appropriate response.
- **B8**. Utilize effective methods for rationalizing drug administration for essential drugs available in pediatric practice.
- **B9**. Formulate practice development programs.
- **B10**. Perform medical research about specified medical problems.

C. Professional/practical skills

- **C1**. Take focused history according to the child's complaint.
- **C2.** Perform proper general and regional examination to reach a meaningful diagnosis.
- **C3.** Explore the updates in the diagnostic tools for each disease in a wise and localized manner.
- **C4.** Interpretation of the patients data in an ordered and competent manner to reach the diagnosis.
- **C5.** Construct a management plan for common pediatric diseases and protocols for emergency intervention.
- **C6.** Perform proper genetic counseling with emphasis on methods of prenatal diagnosis.
- **C7.** Develop skills in molecular diagnosis including DNA extraction, PCR and sequencing.
- **C8.** Set up neonatal screening program for endocrinal, metabolic and other inherited disorders.
- **C9.** Apply infection control measures including updates in immunization program.
- **C10.** Evaluation of the immune system disorders (Primary and secondary).
- **C11.** Develop skills in mechanical ventilation including modes, monitoring, weaning and the new techniques.
- **C12.** Adjust TPN (Preparation & technique) for nutritional support of newborn and children with different diseases.

D. Communication & Transferable skills

- **D1.** Adopt principles of the lifelong learning needs of the medical profession.
- **D2.** Use information and communication technology effectively in the field of medical practice.
- **D3.** Retrieve, manage, and manipulate information by all means, including electronic means.
- **D4.** Present information clearly in written, electronic and oral forms.
- **D5.** Communicate ideas and arguments effectively.
- **D6.** Analyze and use numerical data including the use of simple statistical methods.
- **D7.** Use Evidence Based Medicine in management decisions.
- **D8.** Manage time and resources effectively and set priorities.
- **D9.** Work efficiently as a leader of health care team and demonstrate skills of team leadership.
- **D10.** Solve problems related to patients, work management, and among colleagues.
- **D11.** Cope with a changing work environment.
- **D12.** Apply safety and infection control measures during practice.
- **D13.** Evaluate their work and that of others using constructive feed back.

Matrices needed between program objectives and program ILOs

Comparison between program objectives and knowledge ILOS

	Obj1	Obj2	Obj3	Obj4	Obj5	Obj6	Obj7	Obj8	Obj9	Obj10
A1	√									
A2		√								
A3									√	
A4			√	√						
A5			√					√		
A6					√	√	√			
A7								√	√	
A8			√						√	
A9			√	√	√			√		
A10				√	√			√		
A11			√	√	√			√		
A12			√	√				√		
A13			√	√	√			√		
A14				√	√					
A15						√	√			
A16				√	√			√	√	
A17										√

Comparison between program objectives and intellectual ILOS

	Obj1	Obj2	Obj3	Obj4	Obj5	Obj6	Obj7	Obj8	Obj9	Obj10
B1	√	√								
B2			√	√						
B3					√					
B4								√		
B5			√	√	√				√	
B6						√	√			√
B7				√	√	√	√			√
B8								√		
B9			√	√	√					
B10					√		√		√	

Comparison between program objectives and practical ILOS

	Obj1	Obj2	Obj3	Obj4	Obj5	Obj6	Obj7	Obj8	Obj9	Obj10
C1			√							
C2				√						
C3					√					
C4					√					
C5								√		
C6			√							
C7			√						√	
C8			√							
C9								√		
C10									√	
C11						√	√			
C12						√		√		

(3) Academic standards:

Academic standards for the programme are attached in Appendix I. in which External reference points/Benchmarks are attached in

Table of comparison between ARS, NARS, program ILOs is attached in Appendix II.

3.a- External reference points/benchmarks are selected to confirm the appropriateness of the objectives, ILOs and structure of assessment of the program:

-Pediatric training program of Stanford School of Medicine, USA which is accredited by Accreditation Committee on Graduate Medical Education.

http://med.stanford.edu/pedsres/

http://peds.stanford.edu

This is a 3-years program that fulfils the qualifications for the American Board in Pediatrics.

3.b- Comparison of the specification to the selected external reference/ benchmark:

- All program aims of the Benchmark are covered by the current program.
- -Taught modules are covered by the current program
- -Clinical training and research are included.

However, Stanford program differs from the current program in:

- Research is not mandatory in the degree but is encouraged.
- Elective subspecialty rotations.
- Basic sciences are not included.
- Assessment (In training)is done yearly by the Board Committee.
- American Board is the degree offered.

(4) Curriculum structure and contents:

4.a- Duration of the programme (in years or months):

Duration of the Course (the minimum):

□ 6 semesters (36 months)

4.b- programme structure:

-Candidates should fulfill a total of 60 credit hours

-First part: 5 credit hrs

-Second part: 40 credit hrs

-25 credit hrs for theoretical and practical teaching.

- 15 credit hrs for logbook activities: (12 clinical training and 3 hours log book activities))

□Thesis: (15 credit hours).

4.c- Programme courses:

First part

a- Compulsory courses (5 credit hours):

Code	Course Title	Number of hours per week					Programme ILOs covered (REFERRING TO MATRIX)
		Theoretical		Laboratory /practical	Others	Total teaching hrs	
		Lectures (credit hours)	seminars				
PED 603	Applied physiology	3				45	A1, B1 D1-5
PED 605	Pathology	2				30	A2, B1 D1-13
	-Statistics -Research -Computer	-One hr/w for 5 weeks -One hr/w for 5 weeks -One hr/w for 4 weeks					A3, B1,B11 D1-13

Second part (Compulsory & Elective courses)

Student pass 5 weeks training in each speciality subcourse

	Code Course Title	NO. of hours per week (credits)			Total teaching hours		Programme ILOs covered (REFERRING TO MATRIX)
		Theoretical Lectures	Practical	Total credits	Lect:	Pract:	
Pediatrics (PED 609)	**Infection and Nutrition** **PED 609 INC**	2	2	4	30	60	A4,5,7, B1-10, C1-12, D1-13
	Hematology/Oncology **PED 609 HOC**	2	2	4	30	60	A11, B1-10, C1-12, D1-13
	Cardiovascular system **PED 609 CAC**	2	2	4	30	60	A10, B1-10, C1-12, D1-13
	Respiratory System **PED 609 AIC**	2	1	3	30	30	A16, B1-10, C1-12, D1-13
	Nephrology **PED 609 NPC**	2	1	3	30	30	A9, B1-10, C1-12, D1-13
	Endocrinology **PED 609 ENC**	2	1	3	30	30	A12, B1-10, C1-12, D1-13
	Neurology **PED 609 NUC**	2	1	3	30	30	A13, B1-10, C1-12, D1-13
	Gastroenterology **PED 609 GEC**	2	1	3	30	30	A14, B1-10, C1-12, D1-13
	Neonatology **PED 609 NEC**	2	2	4	30	60	A6, B1-10, C1-12, D1-13
	Emergencies &Intensive care **PED 609 ECC**	2	1	3	30	30	A15, B1-10, C1-12, D1-13
	Genetics & Metabolism **PED 609 GNC**	2	1	3	30	30	A8, B1-10, C1-12, D1-13
	Advanced Elective course in any of the above specialities	3		3	45		A17, B1-10, D1-13

Distribution of Pediatric subcourses of MD 2nd part

Each candidate will pass 5 weeks training in each specialty

(15 weeks each Module)

First Module	Second Module	Third Module	Fourth Module
-Infection & Nutrition	-Intensive Care	-Hematology & Oncology	-Gastroenterology
-Genetics	-Chest & Allergy	-Neurology	-Nephrology
-Neonatology	-Cardiology	-Endocrinology	

Elective Course:

Each candidate will select one elective course in any of the above specialties according to his interest.

Programme-Courses ILOs Matrix

P.S. All courses` specifications are attached in Appendix III.

Course Title/Code	Programme ILOs																									
	a1	a2	a3	a4	a5	a6	a7	a8	a9	a10	a11	a12	a13	a4	a15	a16	a17	b1	b2	b3	b4	b5	b6	b7	b8	b9	b10
Basic physiology	√																	√									
Medical statistics & Epidemiology			√															√									
Pathology		√																√									
Infection and Nutrition				√	√		√												√	√	√	√	√	√	√	√	√
Hematology/Oncology											√								√	√	√	√	√	√	√	√	√
Cardiovascular system										√									√	√	√	√	√	√	√	√	√
Respiratory System																√			√	√	√	√	√	√	√	√	√
Nephrology									√										√	√	√	√	√	√	√	√	√
Endocrinology												√							√	√	√	√	√	√	√	√	√
Neurology ,													√						√	√	√	√	√	√	√	√	√
Gastroenterology														√					√	√	√	√	√	√	√	√	√
Neonatology						√													√	√	√	√	√	√	√	√	√
Intensive care															√				√	√	√	√	√	√	√	√	√
Genetics								√											√	√	√	√	√	√	√	√	√
Advanced Elective course																	√		√	√	√	√	√	√	√	√	√

Course Title/Code	Programme ILOs																								
	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	d1	d2	d3	d4	d5	d6	d7	d8	d9	d10	d11	d12	d13
Applied physiology													√	√	√	√	√								
Medical statistics & Epidemiology													√	√	√	√	√	√	√	√	√	√	√	√	√
Pathology													√	√	√	√	√	√	√	√	√	√	√	√	√
Infection and Nutrition	√	√	√	√	√				√	√		√	√	√	√	√	√	√	√	√	√	√	√	√	√
Hematology/Oncology	√	√	√	√	√				√	√			√	√	√	√	√	√	√	√	√	√	√	√	√
Cardiovascular system	√	√	√	√	√								√	√	√	√	√	√	√	√	√	√	√	√	√
Respiratory System	√	√	√	√	√				√	√			√	√	√	√	√	√	√	√	√	√	√	√	√
Nephrology	√	√	√	√	√								√	√	√	√	√	√	√	√	√	√	√	√	√
Endocrinology	√	√	√	√	√			√					√	√	√	√	√	√	√	√	√	√	√	√	√
Neurology ,	√	√	√	√	√								√	√	√	√	√	√	√	√	√	√	√	√	√
Gastroenterology	√	√	√	√	√							√	√	√	√	√	√	√	√	√	√	√	√	√	√
Neonatology	√	√	√	√	√			√	√		√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
-Pediatric Emergencies & Intensive care	√	√	√	√	√				√		√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Genetics & Metabolism	√	√	√	√	√	√	√	√					√	√	√	√	√	√	√	√	√	√	√	√	√
Advanced elective																									

(5) Programme admission requirements:

- **General requirements:**
  - All applicants should have MSc degree in Pediatrics with good assessment from one of the Egyptian Universities or an equivalent degree approved by the higher council of Egyptian universities.

(6) Regulations for progression and programme completion:

- Student must complete minimum of 60 credit hours in order to obtain the MD degree, which include the courses of first and second parts, (compulsory and elective) thesis and activities of the log book.
- Courses description are included in Appendix III.
- Registration for the MD thesis is allowed after one semester from the day of registration to the programme and must fulfill a total of 15 credit hours including material collection, laboratory work, patients follow-up, and meetings with supervisors.

Log book fulfillment:

- Student must fulfill a minimum of 15 credit of log book activities.
- Log book should be fulfilled and signed by Head of the department and include attendance of:
  - Ground round weekly.
  - Scientific seminars.
  - Conference attendance.
  - Workshops and training.

-Assessment tools:

First Part:

Course	Semester MCQ	Written exam	Total Mark
Physiology	20	80	100
Pathology	20	80	100

Second Part:

Course	Marks				Total Marks
Pediatrics	Written		Oral	OSCE	
	Essay-1 (3hrs)	90	100	100	500
Pediatrics	Essay-2 (3hrs)	90			
Commentary	1.5 hrs	60			
Semester exam	MCQ	60			
Elective course	Essay	48	30		90
	MCQ	12			

Credit hour exam will be held by the end of the semester in the form of MCQ (20% of the total mark)

TEACHING & LEARNING METHODS:

METHODS USED:

1. Weekly lectures and scientific seminar
2. Clinical Practice under supervision
3. Clinical demonstrations, practice of skills, and discussions during grand rounds and case presentation.
4. Conference attendance
5. Training courses
6. Self learning

Facilities used for teaching this course include:

LECTURE HALLS: Two halls for lecturers are available at Mansoura University Children's Hospital (MUCH). The hall is equipped with white board, data show, and computer.

CLINICAL ROUNDS HALLS:

Six halls for clinical rounds are available at Mansoura University Children Hospital (MUCH). Computer and AV aids facilities are available with prior arrangement.

LIBRARY:

The library is located on the 4th floor of the Faculty of Medicine, Mansoura University.

FACILITIES FOR TUTORS

- In addition to the library on 4th floor of the Faculty of Medicine, Mansoura University, there is a specialized pediatric library at MUCH (Professor Mohammad Hafez's Library).
- The offices of all staff at MUCH is equipped with computers and high speed internet connection.
- International databases are available through the website of the university (www.mans.edu.eg)

CLINICAL FACILITIES:

- Six general pediatrics inpatient units at MUCH.
- Eleven specialized pediatric units including pediatric intensive care unit, infectious diseases, neonatology, gastroenterology and hepatology, genetics, allergy and immunology, endocrinology, hematology and oncology, cardiology, nephrology and neurology.
- General and specialized outpatient clinics serving around 600 patients daily. The clinics work for 6 days a week.
- Emergency service available through the emergency department of MUCH

SKILLS LAB:

- Neonatal resuscitation manikins
- Pediatric resuscitation manikins.

References :

- Text books:

- Illustrated text book of pediatrics by Tom Lissaeur.
- Nelson's "Essentials of Pediatrics" (available from bookshops at the faculty).
- Nelson Textbook of Pediatrics.
- Manual of Pediatric Hematology (Lanzkowzky).
- Manual of Neonatal Care.
- Smith's textbook of genetics.

- Manual of Pediatric nephrology textbook.
- Suchy textbook of pediatric hepatology.

- Journals: Pediatric Clinics of North America
- Websites:…www.google.com www.pubmed.com
- Others:……

(7) Evaluation of Programme's intended learning outcomes (ILOs):

Evaluator	Tools*	Sample size
Internal evaluator (s) Prof.. Ali Shaltout Prof.. Magdy Abul-Khair Prof.. Ahmed Mansour	WORKSHOP, COMMUNICATION	
External Evaluator (s) Prof. Mohamed Ahmed Rowisha Head of Tanta Pediatric Department	**Check list**	
Senior student **(s)**		
Alumni		
Stakeholder **(s)**		
others		

* TOOLS= QUESTIONNAIRE, INTERVIEW, WORKSHOP, COMMUNICATION, E_MAIL

We certify that all information required to deliver this programme is contained in the above specification and will be implemented. All course specification for this programme are in place.	
Programme coordinator: Name: Dr. Noha Tantawy	Signature & date:
Dean: Name:	Signature & date:
Executive director of the quality assurance unit: Name:	Signature & date:

P.S. The programme specification should have attached to it all courses specifications for all courses listed in the matrix.