- **Education**

-**Residency program**

The pediatric residency program at Mansoura University Children's Hospital aims to teach pediatric medicine by providing a broad-based exposure to the field through optimal balance between general pediatrics, critical care, and the pediatric subspecialties.

Intended learning outcomes of the residency program:

a) Knowledge

General knowledge to be acquired:

•Acquisition of fundamental knowledge base (e.g., pathophysiology of common pediatric diseases) and ability to apply such knowledge to provide appropriate clinical care.

•Acquisition of advanced theoretical knowledge, clinical examination and assessment skills required for practice within clinical specialties

•Knowledge of the indications, contraindications and complications of practical procedures and diagnostic investigations and ability to communicate this information to the parents and/or the child

•Acquisition of pharmacological knowledge of common medications used, describe their actions, interactions and side effects.

•Understanding the duties and responsibilities of a pediatrician to educate and support parents and caregivers for effective caring of their children

•Knowledge of the community services that can support children and their families in coping with their health problems

Knowledge related to Common Pediatric Medical Conditions:

Recognition and initial management of medical conditions commonly encountered in general pediatric medicine including:

•Undifferentiated pediatric conditions

•Acute pediatric emergencies

•Chronic problems that require multi-disciplinary team approach

•Common environmental health hazards (e.g., poisoning, drug overdose)

•Common pediatric ophthalmological, orthopaedic, otorhinolaryngeal , dermatology and surgical problems

b) Intellectual skills

. Integrate basic biomedical science with clinical care.

. Judge reasonably and evidence based in solving clinical problems; Prioritize clinical problems, evaluate information objectively, recognizing its limitations.

. Apply personal judgment for analytical and critical problem solving.

. Analyze the results of history, physical and laboratory test findings to reach a meaningful diagnostic formulation.

. Construct appropriate management strategies for patients with common diseases, both acute and chronic, including medical and psychiatric conditions.

. Design an initial course of management for stabilization of patients with serious illnesses.

. Classify factors that place individuals at risk for disease or injury, to determine strategies for appropriate response.

. Evaluate relevant and current data from literature, using information technologies and library resources, to help solve a clinical problem based on evidence (EBM).

. Differentiate different symptoms, signs, and disorders to reach a final diagnosis

. Practice research and scientific methods through:

. Formulation of research questions that is pertinent to medicine.

. Recognition of the importance of precision in collecting, analyzing, and interpreting medical data.

. Implement the research ethics in the study design.

c) Practical skills

. Take focused history according to the child's complaint.

. Perform clinical examination of different systems orderly, fluently and competently and be skillful in clinical sign detection.

. Recognize criteria of life-threatening conditions in children and initiate appropriate management.

. Decide which patients may be managed on a general inpatient service and which require critical care.

. Provide family-centered patient care that is culturally effective and developmentally and age appropriate.

. Perform efficiently different invasive maneuvers as endotracheal, intraosseous line.

. Perform the techniques of pediatric resuscitation and demonstrate competency in basic and advanced life-support measures.

. Manipulate different diagnostic tools such as radiological, ECG, and other laboratory investigations and how to use these data in the diagnosis, management and therapeutic drug monitoring.

. Perform proper counseling of patients and families.

d) Communication & transferable skills

. Adopt principles of the lifelong learning needs of the medical profession.

. Use information and communication technology effectively in the field of medical practice.

. Retrieve, manage, and manipulate information by all means, including electronic means.

. Present information clearly in written, electronic and oral forms.

. Communicate ideas and arguments effectively.

. Work effectively within a team.

. Analyze and use numerical data including the use of simple statistical methods.

. Use Evidence Based Medicine in management decisions.

. Manage time and resources effectively and set priorities.

. Work efficiently within the health care team.

. Solve problems related to patients, work management, and among colleagues.

. Cope with a changing work environment.

- **Postgraduate education**

- **MSc Pediatrics**

COURSE SPECIFICATION

Second Part– MSC (Pediatrics)

Faculty of Medicine– Mansoura University

- Administrative information

(1) Programme offering the course:	MSc Pediatrics (PED 509)
(2) Department offering the programme:	Pediatrics
(3) Department responsible for teaching the course:	Pediatrics
(4) Part of the programme:	2nd part –Pediatrics
(5) Date of approval by the Department`s council	27/4/2016
(6) Date of last approval of programme specification by Faculty council	9/8/2016
(7) Course title:	Pediatrics
(8) Course code:	PED 509
(9) Credit hours	17 lectures 14 clinical

(10)Total teaching hours:	**255 hours lectures** **420 hours clinical**

- Professional information

(1) Course Aims:

The broad aims of the course are as follows: (either to be written in items or as a paragraph).

1. To produce a candidate who is able to Communicate in proper way with the parents and relatives in the field of history taking and interpretation of symptomatology.
2. To produce a candidate who has the ability and skills to perform general and regional examination in ordered manner to pick up signs help him to reach the diagnosis.
3. To produce a candidate who has the capability to assess growth, development and nutritional status of the child to pick up disorders of growth and nutrition.
4. To produce a candidate whois able to List number of provisional diagnosis and able to distinguish between different situations contribute in some symptoms and signs by illustration of the possible differential diagnosis.
5. To produce a candidate whois able to Choose properly the appropriate diagnostic tools to each disease in a wise manner, not to waste time and money and this will decrease the cost to community.
6. Teach the candidate how to Interpret the investigations results either laboratory, radiological or interventional to help him to reach a final diagnosis.
7. Teach the candidate how to Counsel with the parents in the field of genetic counseling, antenatal counseling and how to deliver breaking out news.
8. Teach the candidate how to Deal with emergency situation like basic life support, advanced life support and neonatal resuscitation.
9. Teach the candidate how to Deal with critically ill child in the intensive care.
10. Teach the candidate how to Perform some skills and interventions like insertion of peripheral and central IV line, insertion of ETT and placement of IC tube.

(2) Intended Learning Outcomes (ILOs):

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

A. Knowledge and Understanding

- **A7.1** Define the normal and the abnormal pattern of growth and development during infancy, childhood and adolescence.

- **A8.1** Specify the nutritional requirements, assessment of nutritional status and the most common nutritional disorders affecting infants and children namely PEM, FTT, vitamin deficiency and hypervitaminosis and underline appropriate management for these disorders.

- **A9.1** Label TPN indications, prescription, contraindications and complications.
- **A9.2** Identify common neonatal problems and their management.
- **A9.3** Specify features of full term and problems and management of preterm, LBW and high risk newborns.
- **A9.4** Underline causes, clinical presentation and management of neonatal infections.
- **A9.5** Outline common respiratory problems, neonatal resuscitation, respiratory support and basics of neonatal mechanical ventilation.
- **A9.6** Specify common neonatal CNS disorders namely seizures, HIE and common neonatal metabolic problems particularly hypoglycemia.
- **A9.7** Define neonatal hematologic problems and how to approach diagnosis including bleeding diathesis and anemia and hyperbilirubinemia.
- **A9.8** State steps of neonatal examination, neonatal resuscitation, fluid homeostasis in neonate and admission and discharge criteria.

- **A10.1** Define causes and how to approach a case of FUO, FWS and exanthematous fevers.
- **A10.2** Specify the clinical picture and management of common viral, bacterial and parasitic infections in children including TB and CNS infections.
- **A10.3** Delineate causes and evaluation of infectious diarrhea and how to approach a child with recurrent infections.
- **A10.4** List the indications, contraindications, administration and precautions of the immunizations necessary for infants and children according to the national schedule and the condition of the child.
- **A10.5** State the definition, clinical presentation, prevention and management of nosocomial infections.
- **A10.6** Name the definition, diagnostic criteria and management of rheumatoid arthritis.

- **A11.1** Outline chromosomal abnormalities mechanisms, modes of inheritance, gene structure including hemoglobin genes and types of mutation.
- **A11.2** List the approach to a dysmorphic child and name the teratogenic agents and its effects on the fetus.
- **A11.3** Specify the classification, diagnosis and treatment of common metabolic diseases particularly GSD, MPS, lipid storage diseases, galactosemia and common amino acids defects of inborn error of metabolism.
- **A11.4** Define grades, causes of mental retardation, state preventive measures of genetic disorders and outline steps of genetic counseling.

- **A12.1** Define the pathogenesis, clinical presentation, complications and treatment protocols for AGN, nephrotic syndrome, SLE and HUS.

- **A12.2** Outline diagnostic and management approach for hematuria and proteinuria in children.
- **A12.3** Underline definition, causes, clinical presentation and management of AKI, CRF, hypertension and UTI in children.
- **A12.4** List types of voiding disorders and specify diagnosis and management of nocturnal enuresis.
- **A12.5** List types, pathogenesis, diagnosis and treatment of RTA and Bartter syndrome.

- **A13.1** Describe different cardiorespiratory symptoms and the utility of different diagnostic tools in diagnosis of cardiorespiratory disorders and management lines.
- **A13.2** Specify clinical presentation and treatment of common congenital heart diseases (Cyanotic and acyanotic types) including naming clinical approach to a cyanotic newborn.
- **A13.3** Underline aetiology, pathogenesis, clinical picture, investigations, complications of rheumatic fever, Kwasakie disease, cardiomyopathy, viral myocarditis, pericardial diseases and heart failure.
- **A13.4** List diagnostic approach to the following clinical presentations; a child with chest pain; asymptomatic murmur; syncope and cardiac patient with fever.
- **A13.5** List causes and workup of systemic hypertension and pulmonary hypertension.
- **A13.6** List the different types and management of cardiac arrhythmias.

- **A14.1** List different types of anaemias and specify clinical presentation, investigations and treatment of each type (IDA, megaloblastic, hemolytic and aplastic anemias).
- **A14.2** State the approach to a case of bleeding disorders and list the causes, clinical picture and management of each type (Vascular purpura, coagulation defects and platelets defect).
- **A14.3** Delineate diagnosis and treatment of Iron overload and name iron chelators; mechanisms and side effects.
- **A14.4** Specify diagnosis and management of leukemia, lymphoma, neuroblastoma, Wilm's tumor, CNS tumors, bone tumors and histocytosis and define diagnosis and treatment of oncological emergencies.
- **A14.5** List indications and complications of blood transfusion.

- **A15.1** Specify clinical presentation, investigations and treatment of common pituitary disorders whether hypo or hyper function.
- **A15.2** Outline causes clinical presentation, investigations and treatment of thyroid and parathyroid disorders and specify common metabolic bone diseases.
- **A15.3** Delineate causes clinical presentation, investigations and treatment of hypo or hyperadrenalism, delayed puberty and precocious puberty.
- **A15.4** Define levels of gender determination and clinical approach to a case of ambiguous genitalia.
- **A15.5** Underline the types, pathogenesis, complications and management of diabetes(Type 1, type 2, MODY and neonatal DM) and hyperinsulnism.
- **A 15.6** Specify definition, causes, diagnostic approach and management of obesity.

- **A 15.7** List causes and management of different endocrinological emergencies.

- **A16.1** Specify definition, classification and treatment of epilepsy and epilepsy mimic conditions.
- **A16.2** State movement disorders types and diagnostic features, causes and diagnostic workup of headache, microcephaly and macrocephaly.
- **A16.3** Name causes, clinical features, investigations and treatment of neurocutanous syndrome.
- **A16.4** Outline causes diagnosis and treatment of cerebral strokes and encephalopathy.
- **A16.5** Underline causes, diagnosis and treatment of spastic child and floppy infant (including central hypotonia, spinal muscle atrophy, myopathy, neuropathy and neuromuscular junction disorders)

- **A17.1** Underline the etiology and approach to diagnosis and management of a child with cholestasis.
- **A17.2** List the causes of acute and chronic diarrhea and specify approach for diagnosis and treatment.
- **A17.3** Name GIT problems including GI bleeding, GERD, abdominal pain and gastritis, vomiting, constipation and food allergy and specify plan for diagnosis and treatment.
- **A17.4** Specify causes clinical presentation and treatment of acute and chronic hepatitis and identify management of acute fulminant hepatitis.
- **A17.5** Outline causes, diagnosis, complications and treatment of liver cirrhosis including metabolic liver diseases.

- **A18.1** Define the principles of airway management, cardiopulmonary resuscitation and the basics of mechanical ventilation, gas inhalation and hemodynamic monitoring.
- **A18.2** Underline the rules of fluid and electrolyte therapy.
- **A18.3** Specify clinical and laboratory evaluation and management of cardiovascular emergencies particularly; hypertension and heart failure.
- **A18.4** Define the pathogenesis, clinical criteria and management of sepsis syndromes.
- **A18.5** List definition, types, pathogenesis, investigations and treatment of shock.
- **A18.6** Define causes, diagnosis and treatment of raised intracranial pressure.
- **A18.7** Outline mechanisms of thermoregulation and define clinical presentation, investigations and treatment of hypothermia and hyperthermia.
- **A18.8** Define drowning and near drowning and specify diagnosis and management strategy.

- **A19.1** Define normal immune response and specify diagnostic approach to a case of immune deficiency.
- **A19.2** List the causes, clinical features and treatment of upper and lower respiratory infections.
- **A19.3** Outline the pathogenesis, clinical picture and stepwise management of respiratory allergy.
- **A19.4** Define air leak syndrome and pleural effusion causes, types, clinical presentation and treatment.
- **A19.5** List differences between upper and lower airway obstruction and specify differential diagnosis of wheezy infant and croup.

B. Intellectual skills

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

C. Professional/practical skills

- **C1.** Construct a proper history taking according to the child's complaint.
- **C2.** Perform proper general clinical examination including to Check vital signs in neonates, infants, children and adolescents.
- **C3**. Perform clinical examination of different systems orderly, fluently and competently and be skillful in clinical sign detection.
- **C4.** Assess nutritional status and parameters of growth and development.
- **C5.** Interpret patients data in an organized and informative manner.

- **C6.** Recognize different neonatal and children emergencies and initiate appropriate management.
- **C7.** Decide which patients may be managed on a general inpatient service and which require critical care.
- **C8**. Provide family-centered patient care that is culturally effective and developmentally and age appropriate.
- **C9**. Perform efficiently different invasive maneuvers as endotracheal, chest tubes, umbilical and central lines.
- **C10.** Perform the techniques of neonatal and pediatric resuscitation and demonstrate competency in basic and advanced life-support measures.
- **C11.** Manipulate different diagnostic tools such as radiological (X ray, CT and MRI) ECG, pulmonary functions test and other laboratory investigations and how to use these data in the diagnosis, management and therapeutic drug monitoring.
- **C12.** Perform proper counseling of patients and families.

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.** Work effectively within a team.
- **D7.** Analyze and use numerical data including the use of simple statistical methods.

- **D8.** Use Evidence Based Medicine in management decisions.
- **D9.** Manage time and resources effectively and set priorities.
- **D10.** Work efficiently within the health care team.
- **D11.** Solve problems related to patients, work management, and among colleagues.
- **D12.** Cope with a changing work environment.
- **D13.** Apply safety and infection control measures during practice.
- **D14.** Evaluate their work and that of others using constructive feed back.

(3) Course content:

Distribution of Courses and subcourses of the 2nd 3rd and 4th semesters modules

First module	Second module	Third module
-Infection & Nutrition -Genetics -Neonatology -ICU	-Chest -Cardiology -Endocrinology -Nephrology	-Hematology & Oncology -Gastroenterology -Neurology

First module (Infection & Malnutrition):

Subjects	Lectures	Clinical	Laboratory	Field	Total Teaching Hours
Nutritional disorders(505)	**1**				**1**
Tuberculosis(505)	**1**				**1**
General Microbiology(507)	**1**				**1**
Clinical Microbiology(507)	**1**				**1**
Nosocomial Infection and Infection Control(507)	**1**				**1**
Growth & development	**2**				**2**
Fever & viral infections	**5**				**5**

CNS infections	2				2
Bacterial infections & TB	5				5
Infectious diarrhea, protozoal & helminthic infections	5				5
recurrent infection, Immunoprophylaxis	4				4
Antibiotic therapy & Rheumatoid arthritis	1				1
Nosocomial infection	1				1
Nutritional requirements Nutritional assessment	2				2
Infant feeding & Under nutrition	2				2
Total	34				34

First module (Genetic Course):

Subjects	Lectures	Clinical	Laboratory	Field	Total Teaching Hours
General Embryology(501)	1				1
Pharmacodynamics(506) Pharmacokinetics	2				2
Development & anomalies of face, palate, endocrine glands, brain, spinal cord, skull, vertebral column & testis(501)	2				2
Inflammation & Repair(505)	1				1
Interstitial fluid formation and pathophysiology of oedema(503)	2				2
Chromosomal abnormalities	4				4
Modes of inheritance	3				3
Dysmorphic child & Teratogenicity	3				3
Gene structure & Mutations	3				3
Genetics of Hemoglobin	3				3
Inborn error of metabolism	3				3
Mental Retardation & Prevention of genetic disorders	3				3
Total	30				30

First module (Neonatology Course)

Subjects	Lectures	Clinical	Laboratory	Field	Total Teaching Hours
Nutritional requirements Nutritional assessment	2				2
Infant feeding & Under nutrition	2				2
Vitamin deficiency, hypervitaminosis & TPN	2				2
Prematurity	2				2
Intrauterine growth restriction	1				1
Neonatal jaundice	2				2
Neonatal infections	2				2
Common neonatal problems	2				2
Basics of neonatal mechanical ventilation	2				2
Fluid balance in the neonate	2				2
Neonatal Examination & resuscitation	2				2
Bleeding tendency in newborns	1				1
Admission & discharge criteria	2				2
Total	24				24

First module (ICU Course)

Subjects	Lectures	Clinical	Laboratory	Field	Total Teaching Hours
Circulatory disturbances(**505)**	1				1
Airway Management, CPR & Invasive procedures(509)	3				3
Shock, Drowning & near drowning509)	4				3
Poisoning, Thermoregulation & Basic mechanical ventilation	4				3
Fluids and electrolyte therapy, ABG & ARDS	4				3
Respiratory physiology(509)	4				3
Raised ICP, Coma & Brain death	4				3
Hemodynamic monitoring & ALT episodes	2				2
Hypertension, Sepsis and multiorgan failure	4				3
Total	30				30

Second module (Chest and Allergy Course)

Subjects	Lectures	Clinical	Laboratory	Field	Total Teaching Hours
Development & anomalies respiratory system(501)	1				1
Respiratory function of blood & Regulation of acid – base balance(503)	1				1
Factors affecting pulmonary ventilation(503)	1				1
Respiratory system drugs(506)	1				1
Clinical Immunology(530)	1				1
Evaluation of respiratory distress (509)	1				1
Pulmonary manifestation OF CYSTIC FIBROSIS(509)	1				1
Chronic interstitial lung disease(509)	1				1
Evaluation &management of foreign body aspiration 509	1				1
Congenital stridor509	1				1
Chronic bronchitis	1				1
Bronchial asthma	3				3
Pneumonia & pleural diseases	3				3
Wheezy infant& Bronchiolitis	3				3
Evaluation of normal & abnormal immune response	3				3
Common pulmonary disorders of immunodeficiency	3				3
Croup	2				2
Immune aspects of common pediatric respiratory disorders	2				2
Total	30				30

Second module (Cardiology Course)

Subjects	Lectures	Clinical	Laboratory	Field	Total Teaching Hours
CHF & asymptomatic murmur	6				6
Cyanotic newborns or with low systemic flow	3				3
cardiac patient with fever, joint pain or pulmonary problem	3				3
Chest pain & syncope	2				2
systemic & pulmonary hypertension	2				2
Arrthmyias	4				4
Rheumatic fever & Kawasaki disease	3				3
Total	23				23

Second module (Endocrinology & diabetes Course)

Subjects	Lectures	Clinical	Laboratory	Field	Total Teaching Hours
Development & anomalies of endocrinology (501)	1				1
Disorders of carbohydrate, lipid, protein, acid–base and mineral metabolism(530)	2				2
Hormones and drugs affecting metabolism(506)	1				1
Agents affecting bone mineral homeostasis(506)	1				1
Hypothalamic – pituitary – adrenal axis (HPA axis) , Physiology of growth, and its disturbances(503)	1				1
Thyroid and suprarenal glands(503)	1				1
Thyroid disordes, POLYENDOCRINOPATHY	3				3
Parathyroid & Adrenal disorders,	3				3
Obesity & Gender determination disorders	3				3
Ostogenesis imperfect ,congenital adrenal hyperplasia	3				3
Short stature ,DSD	2				2
diabetes mellitus (types I & II)	3				3
MODY & Neonatal diabetes	3				3
Hyperinsulinemia hypoglycemic disorders & Insulin resistance syndromes	3				3
Total	30				30

Second module (Nephrology Course)

Subjects	Lectures	Clinical	Laboratory	Field	Total Teaching Hours
Concentrating & diluting ability of the kidney(503)	1				1
Role of kidney in regulation of extracellular fluid volume(503)	1				1
Glomerulopathies(505)	1				1
Kidney drugs (506)	1				1
Nephrotic syndrome (509)	4				4
AGN & Hematuria	3				3
SLE & proteinuria	3				3
ARF & HUS	4				3
Hypertension & UTI	3				3
Chronic renal failure	3				3
Nocturnal enuresis	3				2
RTA & Bartter's syndrome	3				3
Total	30				30

Third module (Hematology & Oncology Course)

Subjects	Lectures	Clinical	Laboratory	Field	Total Teaching Hours
Hematopathology(505)	1				1
Neoplasia(505)	1				1
Blood drugs(506)	1				1
Chemotherapy506)	1				1
Erythrocyte& Leucocytes(**530**)	1				1
Hemostasis & Transfusion medicine(**530)**	1				1
Haemostasis(**503)**	1				1
Hemoglobinopathies & Other hemolytic anemias**(509)**	3				3
Bone marrow failure & Iron deficiency anemia	3				3
Bleeding tendency	3				3
Leukemia & Lymphoma	3				3
Neuroblastoma & Wilm`s tumor	3				3
Bone tumors & CNS tumors	3				3
Blood transfusion	2				2
Chemotherapy, Hematological & oncological emergencies	3				3
Total	30				30

Third module (Hepatology & Gastroenterology Course)

Subjects	Lectures	Clinical	Laboratory	Field	Total Teaching Hours
Motor function of the GIT, its abnormalities GIT-secretion(**503)**	2				2
GIT drugs**(506)**	1				1
Liver, Renal & Endocrine function tests(**530)**	1				1
Hepatitis	4				3
Cholestasis & Metabolic Liver Diseases	3				3
Chronic Liver Diseases	5				5
Diarrhea and Malabsorption	4				4
Vomiting, Abdominal Pain & Constipation	3				3
Esophagitis, Gastritis & IBD	4				4
Food Allergy & GI Bleeding	3				3
Total	30				30

Third module (Neurology Course)

Subjects	Lectures	Clinical	Laboratory	Field	Total Teaching Hours
Child epilepsy & Epilepsy mimic disorder	3				3
Movement disorders	3				3
Headache	3				3
Acute encephalopathy & Disturbed consciousness	2				2
Strokes	2				2
Floppy infant and flacid paralysis	3				3
Spasticity	2				2
Macrocephaly & Microcephaly	3				3
Neurocutaneous syndromes	2				2
Total	23				23

Total Teaching Hours

	Lectures	Clinical	Laboratory	Field	Total Teaching Hours
Neonatology	24				24
Genetics	24				24
Neurology	23				23
Infection	23				23
Pediatric ICU	23				23
Pediatric Hematology & Oncology	23				23
Pediatric Endocrinology	23				23
Pediatric Nephrology	23				23
Pediatric Cardiology	23				23
Pediatric Hepatology & Gastroenterology	23				23
Pediatric Chest and Allergy	23				23
Total hours	255				255

Course contents: Clinical skills **(First module)**

Clinical skill	Teaching hours
History	6
General Examination	6
Demonstrate fever with rashes and how to differentiate	6
Clinical cases for TB (Pulmonary TB,TB lymphadenitis)	6
Drug counseling for helminthes	6
Antibiotics prescription	6
Interpretation of karyotyping	6
Genetic counseling and its application	8
Down syndrome and other chromosomal disorders	6
PCR procedure and its application	8
Approach for diagnosis of metabolic disorders	6
MPS, GSD (clinical cases)	6
Methods of assessment of growth and development	6
Assessment of nutritional status	6
Technique of breast feeding	6
Clinical cases of nutritional disorders	6
Examination of the newborn	6
Neonatal resuscitation	6
Phototherapy and exchange transfusion (demonstration)	6
Basic life support	6
Advanced life support	6
Interpretation of ABG	6
How to deal with mechanical ventilation	8
Total	**144**

Course contents: Clinical skills **(Second module)**

Clinical skill	Teaching hours
Chest examination	6
Bronchial asthma (clinical cases)	6
Pneumonia (clinical cases of different types)	6
Pleural effusion (clinical cases)	6
Wheezy infant (diff. diagnosis)	6
Interpretation of pulmonary functions	8
Diagnostic tools: X-ray CT scan, MRi (Chest)	8
Cardiac examination	6
Interpretation of ECG and X-rays (heart)	8
Demonstration of pathological and innocent murmers	6
Demonstration of arrhythmias	6
Clinical signs of rheumatic heart disease	6
Clinical signs of congenital heart disease	6
Manifestations of endocrinal diseases	6
Counseling for diabetes	6
Clinical cases (Hypothyroidism, Grave's, intersex)	6
Diabetic ketoacidosis, emergency management	6
Adrenal disorders, diagnosis and clinical cases	6
Nephrotic syndrome (clinical cases)	6
AGN (clinical cases)	6
SLE (clinical cases)	6
Hemodialysis and peritoneal dialysis (demonstration)	6
Acute and chronic renal failure (diagnosis and treatment)	6
Total	**144**

Course contents: Clinical skills **(Third module)**

Clinical skill	Teaching hours
Approach for diagnosis of anemia	6
Chronic hemolytic anemia's (clinical cases, DD)	6
Interpretation of bleeding profile	6
Interpretation of CBC	6
Hemophilia cases	6
Purpura cases (signs and DD)	6
Leukemias (clinical cases)	6
Lymphoma clinical cases	6
Neuroblastoma and wilm's tumer (clinical cases)	6
Abdominal examination	6
Chronic liver disease (clinical cases)	6
Metabolic liver disease (clinical cases)	6
Neonatal chalestasis (approach to diagnosis)	6
Diarrhea cases and signs of dehydration	6
Inflammatory bowel disease (clinical cases)	6
Diagnostic tools : CT, MRI (Abdomen)	6
Neurological examination	6
Epilepsy and other mimic disorders (clinical and DD)	6
Describe movement disorders and demonstration	6
Floppy infant: approach for diagnosis and clinical cases	6
Neurocutenous syndromes (clinical diagnosis)	6
CT and MRI brain	6
Total	**132**

- Log book activities and other activities (15 credit hrs):

These activities include attendance of :

-Grand round meetings.

-Scientific seminars & thesis discussion

-Conferences

-Training courses and workshops

(4) Teaching methods:

4.1: lectures and scientific seminar

4.2: Clinical Practice under supervision

4.3: Clinical demonstrations, practice of skills, and discussions during grand rounds and case presentation.

4.4: Training courses.

4.5: Self learning

(5) Assessment methods:

5.1 Written

5.2: Oral

5.3 OSCE

5.4 MCQ continuous assessment

Assessment schedule:

Final Exam: (written, oral and OSCE): after 36 months of job admission or 30 months of MS registration

(6) References of the course:

6.1: Hand books Department book

6.2: Text books:

- 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

6.3: Journals: Pediatric Clinics of North America……

(7) Facilities and resources mandatory for course completion:

- 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:

  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 paediatric 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 paediatrics inpatient units at MUCH.

-Eleven specialized pediatric units including paediatric intensive care unit, infectious diseases, neonatology, gastroenterology and hepatology, genetics, allergy and immunology, endocrinology, haematology and oncology, cardiology, nephrology and neurology.

-General and specialized outpatient clinics serving around 500 patients daily. The clinics work for 6 days a week.

-Emergency service available through the emergency department of MUCH

- SKILLS LAB:

Paediatric resuscitation manikins.

- **MD Pediatrics**

Course SPECIFICATION

MD Pediatrics

Faculty of Medicine– Mansoura University

- ## Administrative information

(1) Programme Title & Code	MD Pediatrics (PED 600)
(2) Final award/degree	MD Pediatrics
(3) Department (s)	Pediatrics
(4) Coordinator	Dr. Noha Tantawy
(5) Date of approval by the Department`s council	**27/4/2016**
(6) Date of last approval of programme specification by Faculty council	**9/8/2016**
(7) Course title:	Pediatrics
(8) Course code:	PED 609
(9) Credit hours	22 Lectures 15 Clinical
(10) Total teaching hours:	**330 hours lectures** **450 hours clinical**

Professional information

(1) Course Aims:

The broad aims of the course are as follows:

1. To enable the candidate to take detailed history with emphasize on very important tips in symptomatology of common and uncommon diseases.
2. To provide the candidate with recent strategies in examination in order to pick up tiny and hidden signs.
3. To enable the candidate to select the most appropriate and recent investigations with less cost and how to interpret them in a systematic manner.
4. To provide the candidate with the recent guidelines in management of the majority of pediatric disorders.
5. To enable the candidate to Comprehended in critical illness of children and neonates in intensive care unit and how to perform life saving procedures.
6. To make the candidate Familiar with mechanical ventilation modes, strategies, monitoring and weaning protocols.
7. To produce a candidate who is Well trained to perform highly skilled interventions as CVC insertion, endoscopy and liver biopsy.
8. To produce a candidate who is Well trained to Perform counseling in the field of genetics including molecular diagnosis and delivering of breaking out news in a professional manner.
9. To produce a candidate who is Highly educated in nutrition and infection control by teach him TPN protocols and recent in infection control measures.
10. To produce a candidate who is Oriented with neonatal screening program for early diagnosis of endocrinal, metabolic and other inherited disorders.
11. Teach him evaluation of immune system including primary immunodeficiency disorders and updates in immunization program.

(2) Intended Learning Outcomes (ILOs):

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

A. Knowledge and Understanding

- A4.1 Define normal and abnormal patterns of child growth and development.
- A4.2 Define the principles of preventive pediatrics particularly immunization updates in pediatric practice.
- **A**5.1 Specify the biochemical, immunologic and nutritional merits of breast milk and management of breast feeding problems.
- A5.2 Define the pathogenesis, features and management of nutritional disorders including micronutrient deficiencies and over nutrition.
- A5.3 Delineate the principles of TPN and management of difficulties.
- A6.1 Specify the basics and different modes of neonatal ventilation including high frequency ventilation.
- A6.2 Specify the updates in management of neonatal pain, PDA, apnea, neonatal renal problems and chronic lung disease.
- A6.3 Underline the land marks of normal and abnormal ultrasound of head in newborns and other radiological investigations.
- A6.4 Specify components, indications, complications and prescription of TPN in neonates.
- A6.5 List admission and discharge criteria from NICU and follow up plan.
- **A**7.1 Underline the problem of health care associated infection and infection control measures.
- A7.2 Define the features, diagnostic clues and management of different viral infections particularly HIV and hemorrhagic fevers.
- A7.3 Specify different anaerobic infections and sexually transmitted diseases, common mycotic infections and invasive parasitic infections in children.

- A7.4 Specify infections in immunocompromized children and updated protocols of management of these patients.
- A7.5 Define the principles of antiviral, antihelminthic and antimycotic therapy in children.
- A7.6 Define the features, diagnostic clues and management of vasculitic disorders, periodic fevers and rheumatoid arthritis.
- A8.1 Define Mendelian and non-Mendelian modes of inheritance and principles of teratogenicity, mutations, microdeletion and genetics of hemoglobin.
- A8.2 Relate dysmorphic features in relation to common genetic syndromes and principles of genetic counseling.
- A8.3 Delineate methods of molecular and prenatal diagnosis of genetic disorders.
- A8.4 State the features and approaches for diagnosis and treatment of metabolic disorders particularly organic acidemias, hyperammonemias, perixosomal and mitochondrial disorders and hypoglycemic syndromes.
- A8.5 State definition, grades and genetic causes of mental retardation.
- **A**9.1 Specify the molecular aspects of pathogenesis and recent trends of management especially nephritic and nephrotic syndromes, renal tubular defects, renal failure and voiding disorders.
- A9.2 Specify the pathogenesis, features and management of SLE in children.
- A9.3 Define stepwise approach and management of a child with hematuria, proteinuria and hypertension.
- A9.4 Specify the pathogenesis, features and management of UTI and HUS in children.
- A10.1 Outline different CHD and the role of pharmacotherapy and catheter in the management.

- A10.2 Delineate the features and updated management of acquire cardiovascular disorders particularly RF/RHD, Kawasaki, collagen disorders, myocarditis, ischemic heart diseases, cardiac tumors and cardiomyopathy.
- A10.3 Specify pulmonary manifestations of heart diseases, pulmonary edema and pulmonary hypertension.
- A10.4 Underline the features and management of CHF, arrhythmia and metabolic heart diseases.
- A11.1 Name the types, pathogenesis, features and management of childhood anemias and myelodysplasia.
- A11.2 Define types, features and management of WBCs disorders including immunodeficiency.
- A11.3 Recall the process of thrombosis and thrombotic tendencies and fibrinolytic system disorders and lines of diagnosis and treatment.
- A11.4 Specify the pathogenesis, clinical criteria and management of childhood malignancies whether hematological (Leukemias and lymphomas) or solid (including bone tumors, CNS tumors, Wilm's tumor and neuroblastoma) together with early suspicion of malignancy.
- A11.5 Specify the pathogenesis, clinical criteria and management of histocytosis.
- A12.1 Specify molecular basis and neonatal screening of endocrinological problems.
- A12.2 List causes, presentation and updated management of pituitary, thyroid, parathyroid, adrenal disorders and obesity with special emphasis on emergencies and hormonal resistance syndromes.
- A12.3 Define the principles of gender determination and types of intersex.

- A12.4 Specify endocrinal metabolic disorders particularly bone metabolic defects, diabetes(type 1, type 2, MODY and neonatal DM) with new management guidelines including patient education program.
- A13.1 Define types, presentation and management of metabolic encephalopathies, developmental delay and intellectual and motor regression and updates of cerebrovascular diseases and epilepsy in children.
- A13.2 Recall diagnostic features and management of speech and language disorders, ADHD and autistic disorders in children.
- A13.3 Define types of neuropathies, muscle diseases and neurocutanous syndromes in children; diagnosis and treatment.
- A13.4 Specify common neuropsychiatric disorders in children particularly neurobehavioral disorders and autistic spectrum disorders; classification, diagnosis and management.
- A14.1 List causes, presentation, complications and updated management of acute and chronic liver diseases and its complications particularly viral hepatitis, metabolic, NASH and autoimmune liver diseases.
- A14.2 Define causes and management of neonatal cholestasis and neonatal liver failure.
- A14.3 Outline the updates in diagnosis and treatment of IBD, celiac diseses, eosinophilic GIT disorders, gastritis especially H pylori, intractable diarrhea and intestinal failure.
- A14.4 Specify feeding problems in children and nutritional care of GIT and hepatic patients.
- A 15.1 Specify the basics and different modes of mechanical ventilation including high frequency ventilation for critically ill children and MV in special clinical situations like Asthma and ARDS.

- A15.2 Specify the indications and clinical implication of non invasive ventilation.
- A15.3 Delineate mechanical ventilation graphics interpretation, extubation guidelines and principles of weaning from mechanical ventilation.
- A16.1 Define recent advances in pathogenesis and management of bronchial asthma and allergic disorders particularly insect, ocular and drug allergy.
- A16.2 Define features and detailed management of pediatric respiratory disorders especially pneumonias, collapse, airway obstruction and air leak syndrome.
- A16.3 Outline the pathophysiology of immune disorders and pulmonary manifestations of immunedeficiencies.
- A16.4 List indications of stem cell therapy in pediatrics.
- A16.5 Specify PFTs interpretation in different airway diseases.

B. Intellectual skills

- **B1.** Interpret symptoms and signs of children disease to reach proper diagnosis and differential diagnosis.
- **B2.** Interpret investigations reports concerning the most common pediatric problems.
- **B3.** Construct appropriate management strategies for patients with common diseases, both acute and chronic, including medical and psychiatric conditions.
- **B4.** Apply personal judgment for analytical and critical problem solving.
- **B5**. Design an initial course of management for stabilization of patients with serious illnesses.
- **B6**. Classify factors that place individuals at risk for disease or injury, to determine strategies for appropriate response.
- **B7**. Utilize effective methods for rationalizing drug administration for essential drugs available in pediatric practice.
- **B8**. Formulate practice development programs.
- **B9**. Evaluate relevant and current data from literature, using information technologies and library resources, in order to help solve a clinical problem based on evidence (EBM).
- **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 plane 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.

(3) Course content

Distribution of Pediatric sub courses of MD 2nd part

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

Each candidate will pass 5 weeks training in each specialty

First module (Infection & Nutrition):

Subjects	Lectures	Clinical	Laboratory	Field	Total Teaching Hours
Nosocomial infection Infection control	**2**				**2**
Infection in immunocompromized host	**2**				**2**
Anaerobic infections	**2**				**2**
Sexually transmitted diseases	**2**				**2**
Hemorrhagic fevers Periodic fevers Vasculitides	**2**				**2**
HIV	**2**				**2**
Immunization update	**2**				**2**
Rheumatoid arthritis	**2**				**2**
Diagnostic microbiology-1	**2**				**2**
Invasive helminthic infections Protozoal infections	**2**				**2**
Common mycotic infections	**2**				**2**
Antiviral therapy Antihelminthic therapy Antimycotic therapy	**2**				**2**
Over nutrition	**2**				**2**
Breast feeding and counseling	**2**				**2**
TPN Micronutrient deficiency	**2**				**2**
Total	30				30

First module (Genetic):

Subjects	Lectures	Clinical	Laboratory	Field	Total Teaching Hours
Teratogenicity	2				2
Non-Menclelian inheritance	2				2
Dysmorphic child	2				2
Mental Retardation	2				2
Genetic counselling	2				2
Prenatal diagnosis	2				2
Mutations	2				2
Methods of molecular diagnosis	2				2
Molecular aspects of primary immunodeficiency	2				2
Microdeletion syndromes	2				2
Organic acidemias	2				2
Hyperammonemias	2				2
Perixosomal disorders	2				2
Mitochondrial disorders	2				2
Hypoglycemic syndromes	2				2
Total	30				30

First module (Neonatology Course):

Subjects	Lectures	Clinical	Laboratory	Field	Total Teaching Hours
Prevention of infections in NCU	3				3
Modes of ventilation (conventional 1)	2				2
Modes of ventilation (conventional 2)	2				2
Modes of ventilation in newborn (non conventional 1)	2				2
Modes of ventilation in newborn (non conventional 2)	2				2
Neonatal radiology	3				3
Neonatal pain management	2				2
Neonatal parenteral nutrition	3				3
Renal problems in newborn	2				2
PDA	2				2
Neonatal apnea	2				2
Follow up of neonates after discharge from NCU	2				2
Chronic lung disease	3				3
Total	30				30

Second Module (Gastroenterology Course):

Subjects	Lectures	Clinical	Laboratory	Field	Total Teaching Hours
Pathology of GIT & liver(**605)**	**1**				**1**
GIT motility,-secretions, bile, Absorption**(603)**	**1**				**1**
Updates in Autoimmune Hepatitis	**2**				**2**
Updates In Pediatric Chronic Viral Hepatitis	**2**				**2**
Updates In Metabolic Liver Diseases	**2**				**2**
Neonatal Cholestasis	**2**				**2**
Nutritional Care of Children with Liver dse	**2**				**2**
Portal Hypertension	**1**				**2**
NASH in Pediatric Age	**2**				**2**
Complications of Chronic Liver Diseases	**2**				**2**
IBD	**2**				**2**
Celiac disease	**2**				**2**
Intestinal Failure and Intractable Diarrhea	**2**				**2**
Medical Nutrition Therapy	**2**				**2**
Eosinophilic GI Disorders	**1**				**2**
Esophagitis, Gastritis & H. pylori infection in infancy & Childhood	**2**				**2**
Feeding problems In Infancy and Childhood	**2**				**2**
Total	30				30

Second Module (Nephrology Course):

Subjects	Lectures	Clinical	Laboratory	Field	Total Teaching Hours
Nephrotic syndrome	**2**				**2**
Approach to a child with protienuria	**2**				**2**
Acute glomerulonephritis	**2**				**2**
Approach to a child with hematuria	**2**				**2**
Systemic lupus erythromatosis	**2**				**2**
Acute renal failure	**3**				**3**
Hemolytic uremic syndrome	**2**				**2**
Hypertension	**2**				**2**
Chronic renal failure	**3**				**3**
Urinary tract infection	**2**				**2**
Nocturnal enuresis and voiding disorders	**3**				**3**
Renal tubular acidosis	**3**				**3**
Bartter syndrome	**2**				**2**
Total	30				30

Third Module (Hematology & Oncology Course):

Subjects	Lectures	Clinical	Laboratory	Field	Total Teaching Hours
Anemias (Regenerative)	2				2
Anemias (Non-regenerative)	2				2
Early suspicion of malignancy	2				2
Infection in hematological & oncological patients	2				2
Hematopoietic growth factors	2				2
Thrombosis and thrombophilia	2				2
Fibrinolytic system disorders	2				2
WBCs disorders (quantitative and qualitative)	2				2
Evaluation & Management of primary immunodeficiency	2				2
Myelodysplasia	2				2
Solid tumors (Bone and CNS tumors)	2				2
Solid tumors (Abdominal tumors)	2				2
Hematological malignancies (Acute leukemia)	2				2
Hematological malignancies (Lymphoma)	2				2
Histiocytosis	2				2
Total	30				30

Third Module (Neurology Course):

Subjects	Lectures	Clinical	Laboratory	Field	Total Teaching Hours
Perinatal metabolic encephalopathies	2				2
Mitochondrial disorders	2				2
Peroxisomal disorders	2				2
Neuro cutaneous syndromes	2				2
Global developmental delay	2				2
Intellectual and motor regression	2				2
Spech and language disorders	2				2
Dyslexia	2				2
Attention deficit- Hyperactive disorders	2				2
Neurobehavioural disorders	2				2
Autistic spectrum disorders	2				2
Childhood epilepsy (up dates)	2				2
Cerebrovascular diseases (updates)	2				2
Peripheral neuropathies in children	2				2
Muscle disease in children	2				2
Total	30				30

Third Module (Endocrinology Course):

Subjects	Lectures	Clinical	Laboratory	Field	Total Teaching Hours
Pathology of bone & joints(605)	**1**				
-Pituitary,Thyroid,Adrenal gland(603)	**1**				
-Molecular basis of endocrinological disorders -Pituitary disorders	**2**				**2**
-Thyroid disorders	**2**				**2**
-Parathyroid disorders	**2**				**2**
-Adrenal disorders	**2**				**2**
-Obesity - Neonatal screening of endocrinological disorders	**2**				**2**
-Hyperinsulinemia & hypoglycemia	**2**				**2**
-Gender determination disorders -Autoimmune endocrinopathy	**2**				**2**
-Water & electrolyte homeostasis	**2**				**2**
-Endocrine emergencies -Hormone resistance syndrome	**2**				**2**
-Bone metabolism & turn over	**2**				**2**
-Endocrinology & Childhood disease	**1**				**2**
-Type I diabetes mellitus	**2**				**2**
-Type II diabetes mellitus	**1**				**2**
-MODY -Neonatal diabetes	**2**				**2**
-Insulin resistance syndromes -Patient education schedule	**2**				**2**
Total	30				30

Fourth Module (Intensive Care Course):

Subjects	Lectures	Clinical	Laboratory	Field	Total Teaching Hours
Basics of mechanical ventilation.	**3**				**3**
Modes of mechanical ventilation.	**3**				**3**
Mechanical ventilation in asthmatics.	**2**				**2**
Non invasive ventilation in asthmatics.	**2**				**2**
Mechanical ventilation in ARDS.	**2**				**2**
Role of HFOV in ARDS.	**2**				**2**
Ventilator graphics.	**2**				**2**
Non invasive monitoring of ventilated child.	**3**				**3**
Invasive monitoring of ventilated child.	**3**				**3**
Weaning from mechanical ventilation.	**3**				**3**
Extubation readiness tests.	**2**				**2**
New techniques in mechanical ventilation.	**3**				**3**
Total	30				30

Fourth Module (Chest & Allergy Course):

Subjects	Lectures	Clinical	Laboratory	Field	Total Teaching Hours
Bronchial asthma	4				4
Allergic march	4				4
Insect, Ocular & drug allergy	2				2
Pneumonia	2				2
Atelectasis	2				2
Air & Fluid in pleural space	2				2
Upper & Lower airway obstruction	2				2
Pulmonary function test	2				2
Evaluation of immune system	4				4
Pulmonary manifestation of immunedeficiency	4				4
Stem cell, clinical implication	2				2
Total	30				30

Fourth Module (Cardiology Course):

Subjects	Lectures	Clinical	Laboratory	Field	Total Teaching Hours
Role of pharmacotherapy and catheter intervention in CHD.	2				2
Cardiovascular manifestations of CTD	2				2
Updates in the diagnosis of IE.	2				2
Updates in the diagnosis of RF/RHD.	2				2
Updates in the diagnosis of K.D.	2				2
Updates in the diagnosis of myocarditis.	2				2
Myocardial ischemia and infarction	2				2
Cardiomyopathies	2				2
Metabolic heart disease.	2				2
Pulmonary manifestations of HD	2				2
Pulmonary edema: cardiogenic versus noncardiogenic.	2				2
management of arrhythmia.	2				2
Therapy of pulmonary hypertension.	2				2
Management of acute CHF	2				2
Cardiac tumors.	2				2
Total	30				30

Total Teaching Hours

	Lectures	Clinical	Laboratory	Field	Total Teaching Hours
Neonatology	30				30
Genetics	30				30
Neurology	30				30
Infection	30				30
Pediatric ICU	30				30
Pediatric Hematology & Oncology	30				30
Pediatric Endocrinology	30				30
Pediatric Nephrology	30				30
Pediatric Cardiology	30				30
Pediatric Hepatology & Gastroenterology	30				30
Pediatric Chest and Allergy	30				30
Total hours	330				330

Course contents: Clinical skills **(First module)**

Clinical skill	Teaching hours
Counseling for breast feeding	6
Immunization up date program	6
Infection control (methods and planes)	6
Drug prescription counseling (antiviral, anti mycotic)	6
Diagnostic microbiology	6
TPN: preparation, technique	6
Nosocomial infections & its prevention	6
Genetic counseling	6
Methods of prenatal diagnosis	6
Methods of molecular diagnosis	6
Micro deletion syndromes (clinical cases)	6
Approach to dysmorphic child	6
Approach for diagnosis of inborn errors of metabolism	6
Modes of ventilation (conventional)	6
Modes of ventilation (non-conventional)	6
Neonatal radiology (US, CT, MRI)	6
Parental nutrition in newborn	6
Prevention of infection in NCU	6
Follow up after dischange from NCU	6
Plane for pain management in newborn	6
Total	120

Course contents: Clinical skills **(Second module)**

Clinical skill	Teaching hours
Abdominal examination	6
investigations of liver diseases (Lab & radiology)	6
investigations of GIT diseases (Lab & radiology)	6
Nutritional care of children with liver disease	6
Feeding problems in infancy and childhood	6
Celiac disease (clinical, diagnosis)	6
Inflammatory bowel disease (clinical, diagnosis)	6
Diagnostic tools for proteinuria	6
Diagnostic tools for hematuria	6
Investigations for voiding disorders	6
Clinical cases (Nephrotic, AGN)	6
Clinical cases (SLE, Bartter syndrome)	6
diagnosis of UTI	6
Hypertension: approach for diagnosis	6
Management of renal failure	6
Total	90

Course contents: Clinical skills **(Third module)**

Clinical skill	Teaching hours
Approach for diagnosis of anemia	6
Early markers of malignancy	6
Solid tumors (bone, CNS, abdominal) up dates in diagnosis & management	6
Infection in malignancy and how to manage?	6
Evaluation of primary immunodeficiency	6
Approach for diagnosis of thrombophilia	6
Histiocytosis (clinical cases)	6
Hematological malignancies (Leukemia and lymphoma cases)	6
Neurological examination and imaging	6
diagnosis of peripheral neuropathies	6
diagnosis of muscle disease	6
Clinical diagnosis (mitochondrial, peroxisomal and neurocutenous disorders)	6
childhood epilepsy	6
speech and language disorders (demonstration)	6
Molecular basis of endocrinal disorders	6
Neonatal screening of endocrinal disorders	6
Endocrine emergencies and how to manage?	6
Approach for diagnosis of disorders of sex (DSD)	6
Diabetes mellitus management and educations	6
Problems of obesity and how to manage?	6
Total	120

Course contents: Clinical skills **(Fourth module)**

Clinical skill	Teaching hours
Basics of mechanical ventilation in ICU	6
Modes of mechanical ventilation in ICU	6
Technique of mechanical ventilation in asthmatics & ARDS	6
Monitoring of ventilated child	6
Extubation and weaning from mechanical ventilation	6
New techniques in mechanical ventilation	6
Bronchial asthma updates	6
Interpretation of pulmonary function tests	6
Clinical implication of stem cells	6
Clinical cases (Pneumonia, pleural effusion, pneumothorax)	6
Evaluation of the immune system	6
How to diff. between upper and lower airway obstruction	6
Cardiac examination	6
diagnosis of IE	6
diagnosis of K.D	6
diagnosis of myocarditis	6
Role of cardiac catheter intervention in CHD	6
Approach for diagnosis of myocardial ischemia and infarctic	6
Arrhythmias: types & how to manage?	6
diagnosis and management of cardiomyapathies	6
Total	120

- Log book activities and other activities (3credit hrs):

These activities include attendance of :

-Grand round meetings.

-Scientific seminars & thesis discussion

-Conferences

-Training courses and workshops

(4) Teaching methods:

4.1: lectures and scientific seminar

4.2: Clinical Practice under supervision

4.3: Clinical demonstrations, practice of skills, and discussions during grand rounds and case presentation.

4.4: Training courses.

4.5: Self learning

(5) Assessment methods:

5.1: Written.

5.2: Oral

5.3: OSCE

5.4: MCQ continuous assessment

Assessment schedule:

Written, oral, OSCE exams after 6 semesters of MD registration

MCQ: at the end of each semester

Semester & Final Exam.

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

(6) References of the course :

6.1: Text books:

- Illustrated text book of paediatrics 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.

6.2: Journals:…Pediatric Clinics of North America……

(7) Facilities and resources mandatory for course completion:

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-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:**

Paediatric resuscitation manikins.

-Fellowship programs

- ***Arab board of Pediatrics***

Objectives of the training program to obtain a certificate of specialization in pediatrics:

1. Finding a training program recognized by the Arab countries and providing training in the field of pediatrics to enable the graduate to obtain basic and applied medical information in pediatrics.

2. Securing the basic resources for the trainee to be able to acquire the basic skills to work as a qualified pediatrician

3. Providing the trainee with medical information, skills, and behaviors to enable him to take the appropriate decision in treating each patient.

4. Securing a suitable environment for scientific research.

5. Providing the trainee with professional medical behaviors.

6. Qualifying the graduate to know the causes of the spread of children's diseases in the environment in which he lives and to work on ways to combat and prevent them.

All participants will be trained in 11 pediatric subspecialties including ICU, NICU, and ER.