COURSE SPECIFICATION

Second Part– MSC (Pediatrics)

Faculty of Medicine– Mansoura University

- Administrative information

(1) Programme offering the course:	MSc Pediatrics **(PED 500)**
(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 part 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
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
Total	23				23

First module (Genetic Course):

Subjects	Lectures	Clinical	Laboratory	Field	Total Teaching Hours
Growth & development	3				3
Chromosomal abnormalities	3				3
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	24				24

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
Airway Management, CPR & Invasive procedures	3				3
Shock, Drowning & near drowning	3				3
Poisoning, Thermoregulation & Basic mechanical ventilation	3				3
Fluids and electrolyte therapy, ABG & ARDS	3				3
Respiratory physiology	3				3
Raised ICP, Coma & Brain death	3				3
Hemodynamic monitoring & ALT episodes	2				2
Hypertension, Sepsis and multiorgan failure	3				3
Total	23				23

Second module (Chest and Allergy Course)

Subjects	Lectures	Clinical	Laboratory	Field	Total Teaching Hours
Bronchial asthma	3				3
Other allergic disorders	4				4
Pneumonia & pleural diseases	3				3
Wheezy infant	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	23				23

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
Pituitary & Thyroid disorders	3				3
Parathyroid & Adrenal disorders	3				3
Obesity & Gender determination disorders	3				3
Water & electrolyte homeostasis, Endocrine emergency	3				3
Bone metabolism & turn over	2				2
diabetes mellitus (types I & II)	3				3
MODY & Neonatal diabetes	3				3
Hyperinsulinemia hypoglycemic disorders & Insulin resistance syndromes	3				3
Total	23				23

Second module (Nephrology Course)

Subjects	Lectures	Clinical	Laboratory	Field	Total Teaching Hours
Nephrotic syndrome	3				3
AGN & Hematuria	3				3
SLE & protienuria	3				3
ARF & HUS	3				3
Hypertension & UTI	3				3
Chronic renal failure	3				3
Nocturnal enuresis	2				2
RTA & Bartter's syndrome	3				3
Total	23				23

Third module (Hematology & Oncology Course)

Subjects	Lectures	Clinical	Laboratory	Field	Total Teaching Hours
Hemoglobinopathies & Other hemolytic anemias	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	23				23

Third module (Hepatology & Gastroenterology Course)

Subjects	Lectures	Clinical	Laboratory	Field	Total Teaching Hours
Hepatitis	3				3
Cholestasis & Metabolic Liver Diseases	3				3
Chronic Liver Diseases	5				5
Diarrhea and Malabsorption	3				3
Vomiting, Abdominal Pain & Constipation	3				3
Esophagitis, Gastritis & IBD	3				3
Food Allergy & GI Bleeding	3				3
Total	23				23

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. (Essay). for assessment of……. (knowledge, intellectual skills)

5.2:… Oral ……. for assessment of…….(knowledge, intellectual skills)

5.3:… OSCE Clinical … ….. for assessment of…….(knowledge, intellectual, practical skills and transferrable)

5.4 MCQ continuous assessment for assessment of…….(knowledge, intellectual, and transferrable)

Assessment schedule:

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

Percentage of each Assessment to the total mark:

Written exam:…… 480 (4 papers short essay, each one 120 marks)

Clinical exam (OSCE):…… 300 (for all pediatrics)…….

Oral exam (structural):…. 300…….

Semester MCQ:…… 120 (including 3 semesters)……..

Other types of assessment:……. …….

Other assessment without marks:

(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……

6.1: Websites:…www.google.com www.pubmed.com……

6.1: Others:……

(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.

Course coordinator: Prof. Othman E. Soliman

Head of the department: Prof. Ali Shaltout

Date: