

AL-Azhar University  
Faculty of Medicine  
Pediatric department  
2014-2017  
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**Al- Azhar University**  
**Faculty of Medicine**  
**(Males)/Cairo**  
**Department of Pediatrics**

جامعة الأزهر  
كلية الطب (بنين)  
قسم طب الأطفال



***PEDIATRICS COURSE SPECIFICATION***

***MD***

***2014 - 2015***

***Acknowledgment***

*On behalf of the Pediatric Department I would like to express my deep appreciation and gratitude to those who participated in the production and finalization of this comprehensive curriculum for pediatric MD, aiming to implement the vision and mission of our department.*

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*Also, we would like to extend our deep thanks to all dear professors who shared by their ideas, remarks and valuable comments, their effort is indispensable to accomplish our ultimate goal to improve the knowledge , the medical skills and the attitude of our postgraduate students and consequently this will guarantee better services given to our patients.*

*Dr. Mosallam Nasser  
Professor and Head of  
The Pediatrics Department*

Al- Azhar University  
Faculty of Medicine (Males)/Cairo  
Department of Pediatrics

### Rational Statement

- The purpose of this curriculum is to describe the knowledge, skills and attitudes that must be gained by the postgraduate students in Pediatrics. The curriculum also describes teaching, learning and assessment methods that will be used.
- We derived the contents from our previous Pediatrics curriculum and in addition we consulted the “**Core Curriculum Pediatrics**” postgraduate program, medical faculties issued by THE SUPREME COUNCIL OF UNIVERSITIES.

## Vision and Mission of advanced Pediatrics Education in Al-Azhar University

### Vision

The overall vision of advanced medical education in our faculty of medicine, Al-Azhar University is to contribute to the main stream of Pediatric medical education in Egypt within the Islamic culture in past and present and to produce a graduate able to function competently according to the accepted national standards and is unique in being culturally sensitive.

### Mission

Our mission is to develop an outstanding clinician, specialist and researcher capable of applying national and international standards of medical care and following the medical ethics. Also, to provide skilled health care oriented in the fields of pediatrics capable of providing optimum care for sick children at ambulatory and inpatient level.

## Goals of the Course

The goals of this core curriculum in Pediatrics are:

1. To possess adequate knowledge about the human body in health and disease and of various causes and basic mechanisms underlying diseases.
2. To develop an appropriate knowledge and skills and attitude necessary for current clinical practice to become competent in diagnosis, differential diagnosis and the ability to formulate an appropriate management of the common pediatric health problems.
3. To develop appropriate knowledge and skills to formulate and carry out (wherever possible) an appropriate, preventive and curative role.
4. To be able to recognize and manage conditions that require urgent intervention and to apply appropriate preventive measures for them.
5. To develop positive attitude of continuous medical education and promotion of professional skills and research capabilities.

## Knowledge and Understanding

By the end of this course, all the postgraduate students will acquire knowledge to:

- € Identify the normal growth and development (including developmental milestones) through the neonatal period to adolescence, and the factors affecting them (genetic and environmental).
- € Demonstrate the basis of genetics and its influence on diseases.
- € Describe the impact of congenital and inherited diseases on children and their families.
- € Identify the unique features of neonatal immunity and pathogenesis of perinatal/neonatal infections.
- € Describe the causes, pathogenesis and clinical feature of the common neonatal and Pediatric problems.
- € Cite the management priorities for different neonatal and pediatric life threatening conditions.
- € Recognize the art of nutrition -as it relates to growing infant, child and adolescent that includes: nutritional requirements at different stages of growth, breastfeeding, formula feeding, and diseases of malnutrition.
- € Describe the clinical manifestations and differential diagnosis of common Pediatric diseases.
- € Describe appropriate diagnosis and management of chronic problems that require tertiary care
- € Identify basics of ethics, medico legal aspects of health problems, malpractice and common medical errors.

## Intellectual Skills

- € Make decisions regarding common clinical situations using appropriate problem solving skills.
- € Construct appropriate management strategies for patients with common diseases, both acute and chronic, including medical, psychiatric, and surgical conditions.
- € Design assessment and management of common problems that present in infancy, childhood and adolescence.

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- € Interpretation of common diagnostic studies and proper choice among them according to the situation.
- € Describe prevention of diseases, immunization, control, isolation and chemoprophylaxis in cases of infectious diseases.
- € Detect the life threatening situations and manage according or refer.
- € Classify factors that place individuals at risk for disease or injury, to determine strategies for appropriate response.
- € Retrieve, analyze, and 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).
- € Involvement into research and scientific methods through: **a.** Formulation of research questions that is pertinent to medicine. **b.** Recognition of the importance of precision in collecting, analyzing and interpreting medical data.

### Professional Skills

By the end of the course the postgraduate student will be able to:

- € Understand and respect the different cultural beliefs and values in the community they serve.
- € Collect relevant and focus history related to the medical problem.
- € Perform clinical examination of different systems orderly, fluently and competently and be skillful in clinical sign detection.
- € Make diagnostic and therapeutic decisions based on clinical judgment.
- € Choose the appropriate laboratory data as well as the imaging (radiological) according to the clinical condition.
- € Interpret different diagnostic tools such as radiological, ECG, and other laboratory investigations and how to implement these data in the diagnosis, management and follow up of cases.
- € Recognize criteria of life threatening conditions in children and to initiate appropriate management.
- € Perform the techniques of neonatal and pediatric resuscitation and demonstrate competency in basic and advanced life - support measures.
- € Perform efficiently different invasive maneuvers as endotracheal, chest tubes, intraosseous, umbilical and central lines.
- € Provide family-centered patient care that is culturally effective and developmentally and age appropriate.

### General Skills in the Pediatric Department

By the end of the course the postgraduate student will be able to:

- € Apply ethical principles to clinical work, such as to display patience and kindness.
- € Avoid frightening of the patients and accept the unsuitable behavior of infants and children such as: urination.
- € Deal with the patient as a person not as a disease.
- € Keep all the private information about the patient's illness confidential.
- € Deal properly with the mother, keep respecting her and evaluate well her worry about her ill child.
- € Solve problems related to patients, work management and among colleagues.
- € Respect his colleagues and a commitment to cooperate with them.
- € Exhibit and display a professional image (professional look), following the Islamic code of medical ethics.
- € Apply safety and infection control measures during practice.
- € Work efficiently within the health care team.
- € Manage time and resources effectively and set priorities.
- € 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.
- € Analyze and use numerical data including the use of simple statistical (methods).
- € Be prepared for the lifelong learning needs of the medical profession.

### Program Admission Requirements

- Hold a bachelor's degree in medicine and surgery from one University of the Arab Republic of Egypt or equivalent degree from another scientific institute recognized from Al-Azhar University.
- Has spent postgraduate one year clinical training program as a House officer in educational or governmental hospitals or its equivalent for completion the bachelor degree.
- Got the license of medical profession practice from the medical syndicate.
- Hold master degree in pediatrics from one University of the Arab Republic of Egypt or equivalent degree from another scientific institute recognized from Al-Azhar University.
- Certificate of good conduct from the Syndicate he or she belongs.

### Regulations for Progression and Program Completion

- 1- Attendance Criteria: minimum acceptance attendance in each course is 70 %.
- 2- Log book should be fulfilled and signed by coordinator of the MD degree and Head of the department.
- 3- Spent at least one year attached to the department attending the lectures, clinical rounds (6 units), the scientific days, the department conference day, the round tables and the scientific meetings.

### Curriculum structure and contents:

- a) Program duration: 12 months
- b) Program structure:
  - (i) Number of hours per week:
    - Lectures                    4 hrs (2 hrs Al-Hussein hosp. on Saturday), the meeting Hall,  
Pediatric department, 5<sup>th</sup> floor  
(2 hrs Bab Al-Shae`rya hosp. on Wednesday), the meeting Hall,  
Pediatric department, 6<sup>th</sup> floor
    - Practical/Clinical: Total 4 hrs in the Pediatric department inpatient wards.
    - Pathology/physiology: (1 hr/week) in meeting hall of Al-Hussein hosp.on Monday, Pediatric department, 5<sup>th</sup> floor
  - (ii) No. of credit hours:
  - (iii) No. of hours of basic sciences courses:
  - (iv) No. of hours of courses of social sciences and humanities:
  - (vi) No. of hours of other courses.
  - (vii) Field Training.



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## POSTGRADUATE PEDIATRICS COURSE CONTENTS

<b>A: PEDIATRIC TOPICS</b>	<b>TOPICS WEIGHT (%)</b>
1. Growth and Development	5
2. Behavioral and Psychiatric Problems	2
3. Nutrition and Infant Feeding	10
4. Human Genetics	2
5. Neonatology	10
6. Immunology and allergic Diseases	4
7. Metabolic disorders	4
8. Rheumatic Diseases of Childhood	3
9. Infectious Diseases and Preventive Pediatrics (Vaccination)	10
10. The Digestive System / Hepatobiliary System	7
11. The Respiratory System	5
12. The Cardiovascular System	7
13. Diseases of the Blood / Cancer and Benign Tumors	7
14. Nephrology and Urology Disorders in Infancy and childhood	5
15. Endocrine System	4
16. Nervous System and Neuromuscular Disorders	7
17. Pediatric Emergencies and Environmental Health Hazards	5
18. Adolescent Medicine and Gynecological Problems of Childhood	3

### **B:PATHOLOGY**

### **C:PHYSIOLOGY**

**OSCE:** Objective structural clinical exam      **OSPE:** Objective structural practical exam

**MCQ:** Multiple choice questions                      **VIVA:** An oral examination

**The levels of competence:**

- Level 1 Observe the clinical activity.
- (The Skills)                      - Level 2 Assist a colleague performing the clinical activity.
- Level 3 Direct supervision by a senior colleague.
- Level 4 Indirect supervision by a senior colleague.
- Level 5 Independent performance of the entire activity

## Course Specifications

### A: PEDIATRIC TOPICS

#### 1. Growth and Development (5 % of the course)

INTENDED LEARNING OUTCOMES (ILOs):

**1.1 Knowledge and Understanding:** By the end of the course the student will be able to:

Description		Method of teaching	Assessment
1.1.1	Define growth, stages of growth and general principles.	Lectures	Written Exam
1.1.2	Describe factors affecting growth.		
1.1.3	Categorize different patterns of growth.		
1.1.4	Describe the changes in body proportions.		MCQ
1.1.5	Describe dental development. Enumerate causes of delay.		
1.1.6	Define development, its fields & general characteristics.	Short Essay	
1.1.7	Describe the normal milestones of development.		
1.1.8	Describe factors affecting developmental milestones.	Independent Learning (IDL)	
1.1.9	Enumerate the warning signs of poor development related to age, including the screen development tests (draw a person & Gesell figure tests).		

**1.2 Skills (Level of competence 5):** By the end of this course the student will be able to:

1.2.1 Intellectual Skill		Method of teaching	Assessment
1.2.1.1	Properly use the different growth & percentile charts. These include: Wt for age, Ht/length for age, H.C. for age, weight for length/Ht, and BMI.	Lectures	Written Exam
1.2.1.2	Interpret the findings of a given growth curve & suggest the investigations needed.	Independent Learning	OSCE Oral exam
1.2.2 Professional Skills			
1.2.2.1	Proper history taking. Accurately measure weight, length/height, and span, mid arm and head circumferences.	Clinical Rounds	Clinical Exam OSCE
1.2.2.2	Assess the development from the history & physical examination.		
1.2.3 General Skills			
Description			
1.2.3.1	Communicate properly with the mother about the findings of the growth curve.	Clinical Rounds	Clinical Exam OSCE
1.2.3.2	Give the proper advice.		

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### 1.3. Attitude

Description	Method Of Learning	Method Of Assessment
1.3.1. Advise parents about the importance of serial follow up for all body measures	Group learning and observation in outpatients and in-patients	OSCE  Clinical exam
1.3.2. Educate parents and children about the use tap and scales		
1.3.3 Advise the parents about preventive measures and vaccination needed	Problem solving sessions	

### -Clinical Cases

Case description	Minimum number of cases	Location
Underweight	25	Outpatients, emergency room, ICU and inpatients
Marasmus	20	
Kwashiorkor	20	
Kwashiorkor and Marasmus	20	
Obesity	50	
Short stature	20	
Tall stature	10	
Macro and microcephaly	20	

### Procedures

Procedure name	
Assess child growth by body measures	Observe (5) Performs under supervision (5) then perform and interpret independently (20)
Assess child development by developmental mile stones and the screen development tests (draw a person & Gesell figure tests).	Observe (5) Performs under supervision (5) then perform and interpret independently (5)

**2. Behavioral and Psychiatric Problems (2 % of the course)**

INTENDED LEARNING OUTCOMES (ILOs):

**2.1 knowledge and Understanding:** By the end of the course the student will be able to:

Description		Method of teaching	Assessment
2.1.1	Define attention-Deficit Hyperactivity disorders (ADHD) and describe the clinical types & outline the management.	Lectures	Written Exam
2.1.2	Define the diagnostic criteria of autistic disorders. Describe the etiology, clinical types & outline the management.		
2.1.3	Enumerate feeding & eating disorders (such as PICA) and refusal of feeding.	Independent Learning	Short Essay
2.1.4	Define the clinical types of enuresis and encopresis as well as the plan for treatment.		
2.1.5	Describe breath holding attacks and plan for management.		Oral Exam
2.1.6	Define Mental Retardation and enumerate the causes.		

**2.2 Skills (Level of competence 5):** By the end of the course the student will be able to:

<b>2.2.1 Intellectual Skills</b>		Method of teaching	Assessment
2.2.1.1	Choose investigation according to the condition	Lectures  Clinical Rounds	Written Exam
2.2.1.2	Design the plan of management for every condition		Clinical exam
2.2.1.3	Interpret the results laboratory data.		OSCE
<b>2.2.2 Professional Skills</b>			
2.2.2.1	Take proper history.	Clinical Rounds	Clinical exam
2.2.2.2	Perform proper physical examination.	Audiovisuals	OSCE
2.2.2.3	Formulate diagnosis from history and examination		
<b>2.2.3 General Skills</b>			
2.2.3.1	Referral to psychiatrist and neurologist.	Clinical Rounds  IDL	Clinical exam  OSCE
2.2.3.2	Counsel the parents about the health problem.		
2.2.3.3	Advice to the parent about the importance of follow up		

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### 2.3. Attitude

Description	Method Of Learning	Method Of Assessment
2.3.1. Advise parents about the importance of screening for behavioral disorders	Group learning and observation in outpatients and in-patients	OSCE  Clinical exam
2.3.2. Educate parents about the manifestations of mental retardation		
2.3.3 Advise the parents about their role in management of some behavioral disorders (enuresis, and breath holding)	Problem solving sessions	

### -Clinical Cases

Case description	Minimum number of cases	Location
attention-Deficit Hyperactivity disorders	5	Outpatients, emergency room, ICU and inpatients
autistic disorders	2	
PICA and other feeding disorders	2	
enuresis	10	
Breath holding	10	
Mental retardation	10	

**3. Nutrition and Infant Feeding (10 % of the course)**

INTENDED LEARNING OUTCOMES (ILOs):

**3.1 Knowledge and Understanding:** By the end of the course the student will be able to:

Description		Method of teaching	Assessment	
3.1.1	Describe maternal and infant reflexes associated with physiology of breast feeding.	Lectures	Written Exam	
3.1.2	Describe how to promote breast feeding & the technique of breast feeding including position and attachment.			
3.1.3	Define exclusive breastfeeding feeding, and complementary feeding.			
3.1.4	Enumerate the advantage of breast feeding.			
3.1.5	Describe the composition of breast milk (Colostrum mature breast milk).			
3.1.6	Enumerate the problems associated with breast feeding and their management.		Independent Learning	MCQ
3.1.7	Enumerate contraindication of breast feeding (Absolute and temporary).			
3.1.8	Describe the indications and hazards of formula feeding.			
3.1.9	Describe how to prepare & calculate the formula feeding.			
3.1.10	Describe the weaning plan (time, types of food & the problems of feeding).			
3.1.11	Define the daily requirement of water, calories, protein, carbohydrate and fat. Define the requirement of vitamins & micronutrients.	Short Essay		
3.1.12	Define Protein energy malnutrition, the types, etiology, clinical manifestations, investigations, prevention & outline plan of management.			
3.1.13	Define rickets, etiology, clinical examination, investigations, DD, complications & treatment. Describe Hypervitaminosis D, causes, clinical presentation & treatment.			Oral Exam
3.1.14	Describe the etiology, clinical manifestations of vitamin A deficiency & hypervitaminosis A of, as well as the prevention of deficiency & the treatment.			
3.1.15	Define Obesity, diagnosis (BMI), causes & complications and outline plan of management.			

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**3.2 Skills (Level of competence 5):** By the end of the course the student will be able to:

<b>3.2.1 Intellectual Skills</b>		Method of teaching	Assessment
3.2.1.1	Recognize the Differentiation between the animal & breast milk also between fore milk and hind milk.	<b>Lectures</b>	<b>Written Exam</b>  <b>OSCE</b>
3.2.1.2	Choose the investigations required for the diagnosis of Rickets and protein energy malnutrition		
3.2.1.3	Recognize the DD, and complications of Rickets and recognize hypervitaminosis D & A manifestations	<b>IDL</b>	
3.2.1.4	Design the management plan for PEM, Rickets and Obesity in children.	<b>Clinical Rounds</b>	
<b>3.2.2 Professional Skills</b>			
3.2.2.1	Taking proper history & perform physical examination		
3.2.2.2	Explain to the mother how to solve the problems associated with breast feeding.	<b>Clinical Rounds</b>	<b>Clinical Exam</b>  <b>OSCE</b>
3.2.2.3	Explain to the mother how to prepare formula feeding.	<b>Audiovisual</b>	
3.2.2.4	Assess the nutritional status of the infant & the child.		
<b>3.2.3 General Skills</b>			
3.2.3.1	Counsel the mother about the proper position for nursing & the promotion of breast feeding.	<b>Clinical Sessions</b>	<b>Clinical Exam</b>  <b>OSCE</b>
3.2.3.2	Plan a feeding schedule including type, preparation and method of feeding.		
3.2.3.3	Advise the mother about proper hygienic measures and follow up.		

### 3.3. Attitude

<b>Description</b>	<b>Method Of Learning</b>	<b>Method Of Assessment</b>
3.3.1. Advise parents about the importance of proper infants and children feeding	Group learning and observation in outpatients and in-patients	OSCE
3.3.2. Educate parents about the manifestations of malnutrition		Clinical exam
3.3.3 Advise the parents about their role in preparation of proper diet to their children	Problem solving sessions	

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### -Clinical Cases

<b>Case description</b>	<b>Minimum number of cases</b>	<b>Location</b>
Underweight	25	Outpatients, emergency room, ICU and inpatients
Marasmus	20	
Kwashiorkor	20	
Kwashiorkor and Marasmus	20	
Obesity	50	



**4. Human Genetics (2 % of the course)**

INTENDED LEARNING OUTCOMES (ILOs):

**4.1 Knowledge and Understanding:** By the end of the course the student will be able to:

Description		Method of teaching	Assessment
4.1.1	Define the genes, the chromosomes & the modes of inheritance.	Lectures  Independent learning	Written Exam
4.1.2	Describe Down syndrome, the genetic types, the risk of recurrence of each type, the clinical manifestations, investigations, the complications & management.		MCQ
4.1.3	Describe Turner syndrome & Klinefelter syndrome (clinical manifestations and their karyotypes).		Short Essay
4.1.4	Define & describe steps of Genetic Counseling.		Oral Exam

**4.2 Skills (Level of competence 5):** By the end of this course the student will be able to:

4.2.1 Intellectual Skills		Method of teaching	Assessment
4.2.1.1	Recognize the normal karyotype & its abnormalities by Proper interpretation.	Lectures Clinical Rounds Audiovisuals	Written Exam Clinical exam OSCE/OSPE
4.2.1.2	Formulate diagnosis from history, examination and Karyotyping		
4.2.2 Professional Skills			
4.2.2.1	Do focus history taking.	Clinical Rounds Audiovisuals	Clinical exam OSCE
4.2.2.2	Properly perform general & neurological examination.		
4.2.3 General Skills			
4.2.3.1	Counsel the parents about the recurrence risk of the genetic disorder (the genetic counseling).	Clinical Rounds	Clinical exam OSCE
4.2.3.2	Advise the parents about rehabilitation & follow up.		

**4.3. Attitude**

Description	Method Of Learning	Method Of Assessment
4.3.1 Counsel parents on the risk and benefits of perinatal screening	Group learning and observation in hospital and outpatients	OSCE
4.3.2 Counsel consanguineous subjects on the importance of premarital screening		

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### Clinical Cases:

<b>Case description</b>	<b>Minimum number of cases</b>	<b>Location</b>
Down syndrome (trisomy 21)	15	Outpatients , hospital wards and genetic clinics
Trisomy 18	2	
Trisomy 13	2	
Turner syndrome	2	
Klinefelter syndrome	2	
Fragile X syndrome	2	
Achondroplasia	2	
Marfan syndrome	2	
Multiple congenital malformations	5	
Dysmorphic features	5	

**5. Neonatology (10 % of the course)**

INTENDED LEARNING OUTCOMES:

**5.1 Knowledge and Understanding:** By the end of this course the student will be able to:

Description		Method of teaching	Assessment
5.1.1	Define and classify newborn infants.	Lectures	Written Exam
5.1.2	Describe the care of normal newborn.		
5.1.3	Describe and interpret the APGAR score & describe steps of newborn resuscitation.		
5.1.4	Describe the clinical examination of the newborn including the assessment of the gestational age.	Independent learning	MCQ
5.1.5	List the problem associated with prematurity & outline the plan of management.		
5.1.6	Describe perinatal asphyxia, the risk factors, the clinical picture, diagnosis and lines of management.		
5.1.7	Enumerate causes of neonatal convulsions & its management.		
5.1.8	Enumerate causes of respiratory distress in the neonate. Describe the risk factors, clinical picture, diagnosis and lines of management.		
5.1.9	Define Apnea, risk factors, mechanisms, types, causes of apnea (apnea of prematurity) and lines of treatment.		
5.1.10	Enumerate causes of cyanosis, etiology, clinical examination, investigations and lines of treatments.		
5.1.11	Define anemia, causes, clinical features, investigations and lines of treatment.		
5.1.12	Define polycythemia, causes, clinical features and treatment.		
5.1.13	Define indirect hyperbilirubinemia, causes, diagnosis, physical examination, investigations complications and lines of management.		
5.1.14	Define cholestasis, etiology, clinical feature, investigations, complications and lines of treatment.		Short Essay
5.1.15	Recognize congenital & acquired neonatal infection, causes, clinical picture, investigation, prevention & treatment.		
5.1.18	Describe infant of diabetic mother & enumerate the problems.		
5.1.19	List the indications of referral to the NICU & the discharge criteria.		
		Oral Exam	

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**5.2 Skills (Level of competence 5):** By the end of this course the student will be able to:

<b>5.2.1 Intellectual Skills</b>		Method of teaching	Assessment
5.2.1	Recognize and differentiate common birth injuries.	Lectures Clinical Rounds Audiovisuals	Written Exam Clinical Exam OSCE
5.2.2	Recognize and differentiate hemorrhagic disease of the newborn (HDN), and formulate diagnosis, and treatment.		
<b>5.2.2 Professional Skills</b>			
5.2.1	Attend the neonatal examination including neonatal reflexes.	Clinical Rounds Audiovisuals	Clinical Exam OSCE
5.2.2	Attend the resuscitation steps of the newborn.		
<b>5.2.3 General Skills</b>			
5.2.3.1	Advise the mother about breast feeding.	Clinical Rounds  Clinical Sessions	Clinical Exam  OSCE
5.2.3.2	Counsel the parents about schedule of vaccination.		
5.2.3.3	Counsel the parents about the screening program of hypothyroidism and others.		
5.2.3.4	Counsel the parents about the importance of follow up for the neonate.		

### 5.3. Attitude

Description	Method Of Learning	Method Of Assessment
5.3.1 Advise parents about the importance of neonatal jaundice follow up	Group learning and observation in NICU and outpatients	OSCE
5.3.2 Counsel consanguineous subjects on the importance of prenatal follow up		

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### Clinical Cases

Case description	Minimum number of cases	Location
preterm	25	Outpatients, emergency room, and NICU
Small for gestational age	20	
Infant of diabetic mother	20	
Thin and thick meconium	20	
Neonatal jaundice	50	
Neonatal sepsis	20	
Neonatal cyanotic and a cyanotic congenital heart disease	10	
RDS	20	
TTN	20	
Multiple congenital anomalies	20	

### Procedures

Procedure name	
Naso-gastric tube insertion	Observe (10)Performs under supervision (20) then perform independently (20)
Endo-tracheal intubation	Observe (10)Performs under supervision (20) then perform independently (20)
Neonatal resuscitation	Observe (5)Performs under supervision (20) then perform independently (20)
Umbilical catheterization	Observe (5)Performs under supervision (20) then perform independently (20)
Peripheral I.V line	Observe (5)Performs under supervision (20) then perform independently (20)
Exchange transfusion	Observe (5)Performs under supervision (20) then perform independently (20)
Assess neonatal gestational age	Observe (5)Performs under supervision (5) then perform and interpret independently (5)

**6. Immunology and Allergy (4 % of the course)**

INTENDED LEARNING OUTCOMES (ILOs):

**6.1 knowledge and Understanding:** By the end of the course the student will be able to:

Description		Method of teaching	Assessment
6.1.1	Define the congenital & acquired immunological disorders.	Lectures	Written Exam
6.1.2	When to suspect immunodeficiency.		
6.1.3	Describe the clinical features of the primary immune deficiency & the investigations required.	Independent learning	MCQ
6.1.4	Describe the etiology, clinical picture, investigations, complications and the treatment of Acquired Immune Deficiency Syndrome (AIDS).		Short Essay
6.1.5	Define & describe bronchial asthma; the pathogenesis, clinical picture, precipitating factors, diagnosis and the management and criteria for predicting bronchial asthma.		
6.1.6	Assess the acute attack of bronchial asthma & categorize the severity of bronchial asthma.		
6.1.7	Define status asthmaticus, describe the risk factors & outline the management in the ICU.		
6.1.8	Define anaphylaxis and describe etiology, clinical features, management as well as the prevention. Classify other allergic disorders in children (allergic rhinitis, allergic eye & ear diseases and atopic dermatitis). Describe clinical features and lines of management of these disorders.		

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**6.2 Skills** (Level of competence 5): By the end of the course the student will be able to:

<b>6.2.1 Intellectual Skills</b>		Method of teaching	Assessment
6.2.1	Recognize clinical features suggesting immunodeficiency diseases	Lectures	Clinical Exam OSCE OSPE
6.2.2	Choose the investigations required for the diagnosis	Clinical Rounds Audiovisuals	
6.2.3	Interpret the results from history and laboratory data		
6.2.4	Differentiate common types of wheezy infants & asthma in childhood.		
6.2.5	Interpret the report of peak flow meter.		
6.2.6	Choose the suitable device for treating acute attack of bronchial asthma.		
6.2.7	Recognize the symptom scores (pulmonary index) and Wood's Score of respiratory failure.		
6.2.8	Design the management plan for every patient		
<b>6.2.2 Professional Skills</b>			
6.2.2.1	Collect relevant medical history.	Clinical Rounds	Clinical Exam
6.2.2.2	Proper physical examination.		
6.2.2.3	Formulate the diagnosis from history, examination and laboratory data.	Audiovisuals	OSCE
6.2.2.4	Collect relevant history and proper physical examination.		
6.2.2.5	Use of peak flow meter.		
6.2.2.6	Use the devices for treating bronchial asthma.		
6.2.2.7	Apply the symptom scores (pulmonary index) and Wood's Score of respiratory failure.		
<b>6.2.3 General Skills</b>			
6.2.3.1	Educate the parents about the protection from repeated infections.	Clinical Rounds IDL	Clinical Exam  OSCE
6.2.3.2	Counsel the parents about the recommended vaccines		
	Advise the parents and/or caregivers about the precipitating factors of acute asthma attack.		
	Train the patient and/or the parents about the inhalation devices used for the treatment.		
6.2.3.3	Communicate properly with patients and colleagues		

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### Clinical Cases:

Case description	Minimum number of cases	Location
Bronchial asthma	<b>30</b>	Outpatients, emergency room, hospital and allergy clinics
Allergic rhinitis	<b>10</b>	
Cow milk allergy	<b>5</b>	
Angioedema	<b>2</b>	
Urticaria	<b>10</b>	
Atopic dermatitis	<b>10</b>	
Insect bite allergy	<b>10</b>	
Recurrent infections	<b>15</b>	
Immune deficiency diseases	<b>10</b>	
Food and drug allergy	<b>5</b>	
anaphylaxis	<b>3</b>	

### Procedures:

Procedure name	Level of competence
Administration of vaccination including BCG vaccine	Observes (5), Performs under supervision (5), then performs independently (10)
Administration of intravenous immunoglobulin	Observe (2), Performs under supervision (2), then performs independently (2)
Administration and interpretation of tuberculin test	Observes (2), Performs under supervision (2), then performs independently (2)



**7. Metabolic disorders (4 % of the course)**

INTENDED LEARNING OUTCOMES (ILOs):

**7.1 knowledge and Understanding:** By the end of the course the student will be able to:

Description	Method Of Learning	Method Of Assessment
7.1.1 Recognize The mode of inheritance, pathophysiology, clinical manifestations and investigations of important infant and childhood metabolic illnesses	Lectures and independent study	Written Exam MCQ Short Essay Oral Exam
7.1.2 Describe Screening programs for metabolic diseases and DD of various types of metabolic disorders		
7.1.3 Recognize The principles of treatment of metabolic diseases including vitamins, dietary change and enzyme replacement therapy		
7.1.4 Describe defect in metabolism of amino acids		
7.1.5 Describe defects in metabolism of lipids		
7.1.6 Describe defects in metabolism of carbohydrates		
7.1.7 define and list the types of Mucopolysaccharidoses		
7.1.8 Recognize disorders of purine and pyrimidine metabolism		
7.1.9 Recognize disorders of pigment (Porphyria, methemoglobinemia and hemochromatosis).		
7.1.10 Define causes, clinical criteria, complications and management of hypoglycemia		
7.1.11 enumerate cause, management, investigations and complications of hyperlipidemia		

**7.2. Intellectual and professional skills**

Description	Method Of Learning	Method Of Assessment
7.2.1 Recognize infants and children with metabolic diseases and visceromegaly and initiate appropriate investigations	Lectures Clinical Rounds Audiovisuals	1. Logbook 2. OSCE 3. Oral exam 4. Written exam
7.2.2 Recognize infants and children with suspected metabolic bone disease and refer to specialist		
7.2.3 Initiate treatment of acid base and electrolyte disturbances in sick infants and children with suspected metabolic illness		
7.2.4 Recognize when to suspect porphyria in children with abdominal pain		
7.2.5 Interpret the laboratory findings of important metabolic diseases including those that results in cot death		

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### 7.3. Skills related to health promotion and disease prevention

Description	Method Of Learning	Method Of Assessment
7.3.1 Advise parents on neonatal screening programs for metabolic diseases that are available at Egypt	Group learning and observation in outpatients	OSCE
7.3.2 Counsel young subjects on the importance of premarital screening		
7.3.3 Educate parents on methods of prevention of iron deficiency anemia		

### Clinical Cases

Case description	Minimum number of cases	Location
Phenylketonuria	2	Outpatients , hospital, Emergency and ICU
Tyrosinemia	2	
Maple syrup urine disease	2	
Homocystinuria	2	
Glycogen storage disease	5	
Galactosemia	2	
Organic acidopathies	2	
Urea cycle defect	2	
Guchier disease	5	
Mucopolysaccharidosis	2	

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### 8. Rheumatic Diseases of Childhood (3 % of the course)

INTENDED LEARNING OUTCOMES:

**8.1 Knowledge and Understanding:** By the end of the course the student will be able to:

Description		Method of teaching	Assessment
8.1.1	Enumerate the types of rheumatic disorders.	Lectures  Independent learning	Written Exam
8.1.2	Describe the clinical manifestations, complications, investigations and criteria for diagnosis and plan of management of Idiopathic Juvenile Arthritis, Systemic Lupus Erythematosus, Henoch Shonlein purpura, Familial Mediterranean Fever and Kawasaki disease.		MCQ  Short Essay  Oral Exam
8.1.3	List the differential diagnoses of arthritis.		

**8.2 Skills: (Level of competence 5):** By the end of the course the student will be able to do:

8.2.1 Intellectual Skills		Method of teaching	Assessment
8.2.1.1	.Recognize criteria for diagnosis for different rheumatic diseases	Lectures	Lectures
8.2.1.2	Formulate the diagnosis from integrating history, Clinical examination and lab. results	Clinical Rounds	Clinical Exam
8.2.1.3	Interpretation of the results of laboratory data	Audiovisual	OSCE/ OSPE
8.2.2 Professional Skills			
8.2.2.1	Proper relevant history taking.	Clinical Rounds	Clinical Exam
8.2.2.2	Proper examination of the musculoskeletal system.	Audiovisual	OSCE/ OSPE
8.2.2.3	Interpret the laboratory results		
8.2.3 General Skills			
8.2.3.1	Counsel the parents the chronic nature of the disease and describe the symptoms suggestive the side effects of the drugs.	Clinical Rounds	Clinical Exam
8.2.3.2	Give an advice about the subspecialty (ophthalmology, physiotherapy) follow up.	IDL	OSCE
8.2.3.3	Give an advice to the patient & parents for long term follow up and investigations.		
8.2.3.4	Communicate properly with patients and parents		

**Clinical Cases:**

<b>Case description</b>	<b>Minimum number of cases</b>	<b>Location</b>
Joint swelling	<b>10</b>	Outpatients, rheumatology clinics and hospital
Joint or bony pains	<b>10</b>	
Limping	<b>5</b>	
Back pain	<b>5</b>	
Bow legs and knock knees	<b>5</b>	
Torticollis	<b>2</b>	
Juvenile rheumatoid arthritis	<b>5</b>	
Systemic lupus erythematosus	<b>5</b>	
Fever of unknown origin	<b>10</b>	
Henoch Schönlein purpura	<b>5</b>	
Mediterranean fever	<b>2</b>	
Skletal deformity	<b>10</b>	
Metabolic Bone diseases	<b>5</b>	
Other connective tissue disorders	<b>5</b>	
Hyperextensible joints	<b>2</b>	
Steven Jonson syndrome	<b>3</b>	

**Procedures:**

<b>Procedure name</b>	<b>Level of competence</b>
Joint aspiration in septic arthritis	Observation (1)

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### 9. Infectious Diseases (9 % of the course)

INTENDED LEARNING OUTCOMES:

**9.1 knowledge:-** By the end of this course the student will be able to:

Description		Method of teaching	Assessment
9.1.1	Define fever, and describe pathogenesis, etiology and patterns of fever.	Lectures  Independent learning	Written Exam  MCQ Short Essay Q
9.1.2	List the causes of fever of unknown origin (FUO).		
9.1.3	Describe etiology, mode of transmission, incubation period, period of infectivity, clinical manifestations, the diagnosis, D.D., complications and treatment of Measles, German Measles, Roseola Infantum, Erythema Infectiosum and Mumps.		
9.1.4	Describe congenital rubella syndrome & lines of prevention.		
9.1.5	Enumerate the types of herpes simplex virus.		
9.1.6	Describe the types of varicella–zoster virus infections and describe the etiology, mode of transmission, incubation period, period of infectivity, clinical manifestations, D.D., complications and treatment of chicken pox.		
9.1.7	Define poliomyelitis & describe the etiology, incubation period, mode of transmission, pathogenesis, clinical manifestations, diagnosis, D.D., complications and treatment.		
9.1.8	Define scarlet fever & describe the etiology, incubation period, mode of transmission, clinical manifestations, diagnosis, D.D., prevention and treatment.		
9.1.9	Define Pertussis (whooping cough) & describe the etiology, mode of transmission, incubation period, clinical picture, diagnosis, D.D., complications and treatment.		
9.1.10	Describe the etiology, incubation period, pathogenesis, clinical picture, complications, D.D., prevention and treatment of typhoid fever (Enteric fever) & salmonella G/E "non typhoidal" and Brucellosis.		
9.1.11	Define acute bacterial meningitis & encephalitis. Describe the etiology, mode of infection, clinical manifestations, diagnosis, prevention and treatment.		
9.1.12	Describe the etiology, incubation period, route of entry, clinical manifestations, prevention, and treatment of tetanus (including tetanus neonatorum).		

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9.1.13	Define tuberculosis & describe mode of transmission predisposing factors, pathogenesis, types, clinical manifestations, diagnosis, complications, prevention and outline treatment (including the drugs doses & side effects).		
9.1.14	Describe Amebiasis and Giardiasis including the epidemiology, complications and treatment.		
9.1.15	Describe the etiology, epidemiology, clinical manifestations, diagnosis, prevention and treatment of Ancylostoma, Ascaris, Enterobiasis and Schistosomiasis.		
9.1.16	Describe the clinical manifestations, prevention and treatment of Malaria.		

**9.2 Skills :-** Level of competence (5) This course will enable the student to:

<b>9.2.1 Intellectual Skills</b>		Method of teaching	Assessment
9.2.1.1	Interpretation of the results of lab. data	Lectures	Written Exam
9.2.1.2	Differential diagnosis for pyrexia of unknown origin	Clinical Rounds	Clinical exam
9.2.1.3	Recognize illnesses require isolation and the use of Other preventive measures	IDL	OSCE
<b>9.2.2 Professional Skills</b>			
9.2.2.1	Collect relevant history.	Clinical Rounds	Clinical exam
9.2.2.2	Proper physical examination.	Audiovisuals	OSCE
9.2.2.3	Perform bedside test such as tuberculin test		OSPE
<b>9.2.3 General Skills</b>			
9.2.3.1	Advise the mother about isolation, the nutrition during the period of illness and the control of fever.	Clinical Rounds	Clinical ex
9.2.3.2	Counsel the parents about the hygienic measures and fly control.	IDL	OSCE
9.2.3.4	Communicate properly with patients and parents		

## 10. Digestive & Hepatobiliary System (7 % of the course)

INTENDED LEARNING OUTCOMES:

**10.1 knowledge :-** By the end of this course student will be able to:

	Description	Method of teaching	Assessment		
10.1.1	Point out different types, clinical features, diagnosis and treatment of (stomatitis).	Lectures	Written Exam MCQ		
10.1.2	Describe the etiology, natural history and clinical presentations of vomiting, diarrhea, abdominal pain, ascitis, constipation and jaundice.				
10.1.3	Describe types, clinical presentation, diagnosis and treatment of congenital and acquired esophageal atresia.				
10.1.3	Define gastroesophageal reflux disease (GERD) and describe pathophysiology, clinical picture, diagnosis, DD & treatment.				
10.1.4	Describe acute diarrhea; causes, pathogenesis, clinical manifestations (degree of dehydration), management (including fluid therapy). Describe the investigations and management of persistent diarrhea.				
10.1.5	Define & describe the etiology, clinical presentation, diagnosis and treatment of hypertrophic pyloric stenosis and intussusception.			Independent learning	Short Essay
10.1.6	Describe pathogenesis, clinical features, diagnosis and treatment of cow's milk allergy.				
10.1.7	Define Hirschsprung disease and describe the pathology, clinical manifestations, diagnosis, DD and treatment.				
10.1.8	Define malabsorption and describe causes, clinical pictures, types, diagnosis, DD and treatment.				
10.1.9	Enumerate causes of upper & lower GIT bleeding describe the diagnosis and treatment of each cause.				
10.1.11	Describe types, etiology, clinical manifestation, laboratory diagnosis, complications, treatment and prevention of viral hepatitis.	Oral Exam			
10.1.12	Define cholestasis and describe etiology, diagnosis, investigations and management.				
10.1.13	List causes & the clinical manifestations of liver cell failure and liver cirrhosis.				

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### 10.2 Skills :- Level of competence (5)

This course will enable the student to:

<b>10.2.1 Intellectual Skills</b>		Method of teaching	Assessment
10.2.1.1	Recognize the liver functions & its evaluation.	Lectures Clinical Rounds	Written exam
10.2.1.2	Formulate the diagnosis the type of liver disease by Analyzing history, examination, and lab.data		Clinical ex
10.2.1.3	Recognize complications of GIT diseases and plan management		OSCE
10.2.1.4	Interpret all laboratory results and radiological images		
<b>10.2.2 Professional Skills</b>			
10.2.2.1	Taking focus history of upper & lower GIT disorders.	Clinical Rounds	Clinical exam
10.2.2.2	Perform proper general and local abdominal examination.	Audiovisuals	OSCE OSPE
<b>10.2.3 General Skills</b>			
10.2.3.1	Counsel the parents about the nature & process of the disease.	Clinical Rounds	Clinical exam
10.2.3.2	Advise the mother about home treatment, prevention and follow up.	IDL	OSCE
10.2.3.3	Communicate properly with patients and parents		



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### 11. Respiratory System (5 % of the course)

INTENDED LEARNING OUTCOMES:

**11.1 knowledge and understanding :-** By the end of this course student will be able to:

Description		Method of teaching	Assessment
11.1.1	Describe the etiology, clinical manifestations, the investigations, DD and the management of upper airway obstruction.	Lectures	Written Exam MCQ
11.1.2	Recognize the etiology, clinical manifestations, investigations, DD, complications and lines of treatment of bronchitis, acute bronchiolitis, bronchiectasis and pneumonia.	Independent learning	Short Essay
11.1.3	Define cystic fibrosis and describe the pathology, clinical manifestations, diagnosis, complications, DD and outlines the management.		Oral Exam
11.1.4	Define and describe pleural disorders (types, etiology, clinical manifestations, investigations, diagnosis & treatment).		

**11.2 Skills :-** Level of competence (5) This course will enable the student to:

11.2.1 Intellectual Skills		Method of teaching	Assessment
11.2.1.1	Recognize features of respiratory emergency	Lectures	Written Exam
11.2.1.2	Formulate diagnosis from history and physical exam.	Clinical Rounds	Clinical exam OSCE
11.2.1.3	Interpret the investigations and the radiological data.		
11.2.2 Professional Skills			
11.2.2.1	Collect historic data focus on the respiratory system.	Clinical Rounds	Clinical ex OSCE
11.2.2.2	Perform proper local chest examination.	Audiovisuals	OSPE
11.2.2.3	Perform inhalation therapy and oxygen therapy.		
11.2.3 General Skills			
11.2.3.1	Discuss with the parents the dangerous signs of respiratory distress & the need for hospital admission.	Clinical Rounds	Clinical ex OSCE
11.2.3.2	Advise the parents about the treatment & follow up.		
11.2.3.3	Communicate properly with patients and parents		

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### Clinical Cases:

Case Description	Min. Number of cases	Location
Sore throat, pharyngitis, tonsillitis and cervical lymphadenopathy	<b>50</b>	Outpatients, emergency room, hospital and allergy & pulmonology clinic
Croup and stridor	<b>10</b>	
Snoring and obstructive sleep apnea	<b>10</b>	
Earache	<b>10</b>	
Bronchial asthma and the wheezy infant	<b>50</b>	
Chronic cough, congenital anomalies and pleural space disorders.	<b>10</b>	
Lower respiratory tract infections including bronchiolitis and pneumonia	<b>20</b>	
Chronic lung problems including cystic fibrosis, bronchiectasis, interstitial lung diseases and chronic chest infections	<b>10</b>	

### Procedures

Procedure Name	Observe	Perform Under Supervision	Perform Independently
Spirometry	<b>5</b>	<b>5</b>	<b>2</b>
Thoracocentesis	<b>5</b>	<b>5</b>	<b>2</b>
Endotracheal intubation	<b>5</b>	<b>5</b>	<b>10</b>
Inhalation therapy	<b>5</b>	<b>5</b>	<b>20</b>

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### 12. Cardiovascular System (7 % of the course)

INTENDED LEARNING OUTCOMES:

**12.1 knowledge and understanding :-** By the end of this course student will be able to:

Description		Method of teaching	Assessment
12.1.1	Recognize the classification of congenital heart diseases (CHD).	Lectures    Independent learning	Written exam  MCQ  Short Essay  Oral Exam
12.1.2	Describe the clinical manifestations, investigations, complications and lines of management of congenital cyanotic heart disorders.		
12.1.3	Describe the clinical manifestations, investigations, complications and lines of management of congenital acyanotic heart disorders.		
12.1.4	Describe the modified criteria for diagnosis and outline the management and prevention of rheumatic fever.		
12.1.5	Describe the etiology, predisposing factors, clinical picture and management of infective endocarditis.		
12.1.6	Describe causes, clinical manifestations and management of heart failure.		
12.1.7	Describe types, clinical manifestations and management of cardiomyopathy.		

**12.2 Skills: -** Level of competence (5): By the end of this course student will be able to:

12.2.1 Intellectual Skills		Method of teaching	Assessment
12.2.1.1	Choose proper investigation according to the condition	Lectures Clinical Rounds	Written exam Clinical exam OSCE
12.2.1.2	Formulate diagnosis from data of history, examination, And investigations		
12.2.1.3	Interpret lab. Data, ECG and radiological images		
12.2.2 Professional Skills			
12.2.2.1	Thorough history taking focus on the cardiac sheet.	Clinical Rounds	Clinical exam.
12.2.2.2	Do good general and local cardiac examination.	Audiovisuals	OSCE
12.2.2.3	Interpret the historical and clinical data.		
12.2.3 General Skills			
12.2.3.1	Discuss with the parents the disease process.	Clinical Rounds	Clinical exam.
12.2.3.2	Advise the parents about follow up the plan of management & the nutrition protocol.	Audiovisuals	OSCE
12.2.3.3	Advise the parents about the prevention protocols against rheumatic fever, infective endocarditis & heart failure.		
12.2.3.4	Communicate properly with patients and parents		

### 13. Hematology & Oncology (7 % of the course)

INTENDED LEARNING OUTCOMES:

**13.1 knowledge and understanding:** - By the end of this course student will be able to:

Description		Method of teaching	Assessment
13.1.1	Define anemia & describe classifications, diagnosis and laboratory investigations.	Lectures	Written Exam MCQ
13.1.2	Describe the common causes of anemia in Egypt.		
13.1.3	Describe anemia due to decreased B.M precursor including (congenital and acquired), the clinical picture, laboratory findings and treatment.		
13.1.4	Recognize the etiology, clinical manifestations, investigations, complications and management of hemolytic anemia (acute & chronic) (congenital & acquired).		
13.1.5	Describe iron metabolism, causes of deficiency, clinical picture, investigation, diagnosis, D.D., prevention and treatment of iron deficiency anemia.	Independent learning	Short Essay  Oral Exam
13.1.6	Recognize the etiology, clinical manifestations, investigations, DD, complications and management of hemorrhagic disorders (coagulation defects & platelets disorders).		
13.1.7	Define & describe Disseminated Intravascular Coagulation (DIC).		
13.1.8	Classify leukemia, and describe the etiology, clinical manifestations, diagnosis of acute lymphoblastic leukemia (ALL).		
13.1.9	Describe the etiology, clinical manifestations and diagnosis of Hodgkin & non-Hodgkin lymphoma.		
13.1.10	Describe the clinical manifestations, investigations, DD and complications of Wilms tumor and Neuroblastoma.		
13.1.11	Describe types, clinical manifestations and diagnosis of brain tumor.		
13.1.12	Describe causes of Lymphadenopathy & splenomegaly.		

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**13.2 Skills :-** Level of competence (5) This course will enable the student to:

<b>13.2.1 Intellectual Skills</b>		Method of teaching	Assessment
13.2.1.1	Formulate diagnosis from history and examination	Lectures Clinical Rounds	Clinical exam OSCE
13.2. 1.2	Choose the required investigation and interpret the findings of laboratory data.		
<b>13.2.2 Professional Skills</b>		Method of teaching	Assessment
13.2.2.1	Collect relevant history	Clinical Rounds	Clinical exam OSCE
13.2. 2.2	Perform proper general and local examination.	Audiovisual	
<b>13.2.3 General Skills</b>		Method of teaching/ Assessment	
13.2.3.1	Advise to the mother for treatment and follow up.	Clinical Rounds / clinical exam	
13.2.3.2	Advise the parents about the proper nutrition.		

### Clinical Cases

Case description	Min Number of cases	Location
Nutritional anemia	30	Outpatients , hospital wards and hematology clinics
Sickle cell anemia	4	
Thalassemia	10	
Hemophilia	2	
von Willebrand disease	2	
Christmas disease	1	
Purpura	5	
Platelet function defect	1	
Bone marrow failure	2	
Fanconi anemia	2	
G6PD deficiency	4	
Congenital spherocytosis	2	
Autoimmune hemolytic anemia	2	
Leukemia	5	
Lymphoma	2	
Other solid tumors	2	

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### Procedures

<b>Procedure Name</b>	<b>Observe</b>	<b>Performs under supervision</b>	<b>perform independently</b>
Blood product transfusion	<b>5</b>	<b>5</b>	<b>20</b>
Bone marrow aspiration	<b>5</b>	<b>5</b>	<b>5</b>

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### 14. Nephrology & Urology (5 % of the course)

INTENDED LEARNING OUTCOMES:

**14.1 knowledge:-** By the end of this course the student will be able to:

Description		Method of teaching	Assessment
14.1.1	Define hematuria & enumerate causes. Describe Glomerulonephritis (GN), etiology, clinical picture, investigation, DD, complications and treatment.	Lectures	MCQ
14.1.2	Define proteinuria & enumerate causes. Describe Nephrotic syndrome (NS), etiology, clinical picture, investigations, DD, complications & plan of treatment.	Independent learning	Short Essay
14.1.3	Describe acute Renal Failure, etiology, clinical picture, investigations, DD, complications and plan of treatment.		
14.1.4	Define polyuria & enumerate causes.		
14.1.5	Define urinary tract infection (UTI). Describe risk factors, etiology, clinical picture, investigations, DD, complications and treatment.		Oral Exam

**14.2 Skills :-** Level of competence (5) This course will enable the student to do:

14.2.1 Intellectual Skills		Method of teaching	Assessment
14.2.1.1	Differentiate causes of generalized edema	Lectures	Written exam Clinical exam OSCE
14.2.1.2	Explain pathogenesis of red urine		
14.2.1.3	Recognize complications of renal diseases	Clinical Rounds	
14.2.1.4	Choose the radiological investigations required according to the condition.		
14.2.1.5	Interpretation of laboratory results.		

14.2.2 Professional Skills		Method of teaching	Assessment
14.2.2.1	Collect relevant history.	Clinical Rounds	Clinical exam OSCE
14.2.2.2	Perform proper clinical general & local abdominal examination.		
14.2.2.3	Proper inspection of urine, boiling & dip stick tests.	Audiovisual	
14.2.2.4	Able to measure blood pressure.		
14.2.3 General Skills		Method of teaching	Assessment
14.2.3.1	Advise the parents for the follow up of UTI/NS case	Clinical Round	Clinical exam
14.2.3.2	When to refer the patient to nephrologist / urologist	IDL	OSCE

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### 15. Endocrinology (4 % of the course)

INTENDED LEARNING OUTCOMES:

**15.1 knowledge and understanding :-** By the end of this course student will be able to:

Description		Method of teaching	Assessment
15.1.1	Describe etiology, clinical manifestations, investigations, D.D and treatment of hypopituitarism.	Lectures  Independent learning	Written exam  MCQ  Short Essay  Oral exam
15.1.2	Define Diabetes Insipidus (DI), etiology, clinical picture, investigations, DD, complications and treatment.		
15.1.3	Describe etiology, clinical manifestations, investigations, D.D, complications and treatment of congenital and acquired hypothyroidism.		
15.1.4	Describe etiology, clinical manifestations, investigations, D.D, complications and treatment of hyperthyroidism.		
15.1.5	Describe the etiology, clinical manifestations investigations, D.D, complications and treatment of hypo- and hyperparathyroidism.		
15.1.7	Describe etiology, clinical manifestations, investigations, D.D, complications and treatment of type I diabetes mellitus.		
15.1.8	Describe etiology, clinical manifestations, investigations, D.D, complications and treatment of hypoglycemia.		
15.1.9	Describe adrenal dysfunction (congenital adrenal hyperplasia); clinical manifestations, investigations and treatment.		
15.1.11	Define and describe causes, diagnosis and the management of short stature.		



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**15.2 Skills :-** Level of competence (5) By the end of this course the student will be able to:

<b>15.2.1 Intellectual Skills</b>		Method of teaching	Assessment
15.2.1.1	Recognize calcium homeostasis and the etiology of hypo- and hypercalcemia.	Clinical Rounds  Audiovisuals	Clinical exam  OSCE/OSPE
15.2.1.2	Choose the appropriate investigation required for each condition		
15.2.1.3	Interpret the laboratory investigations.		
15.2.1.4	Recognize physiology of puberty.		
<b>15.2.2 Professional Skills</b>			
15.2.2.1	Collect relevant history.	Clinical Rounds  Audiovisuals	Clinical exam  OSCE/OSPE
15.2.2.2	Perform good clinical examination.		
15.2.2.3	Formulate diagnosis from history and examination		
15.2.2.4	Assess sexual development and apply Tanner scale.		
<b>15.2.3 General Skills</b>		Method of teaching /Assessment	
15.2.3.1	Counsel the parents about the problem & to avoid the complications.	Clinical rounds	Clinical exam
15.2.3.2	Advise the patients about the follow up and the management plan.		

### Clinical Cases

Case description	Minimum number of cases	Location
tetany	2	Outpatients , hospital, Emergency and ICU
Congenital hypothyroidism	2	
Short stature	2	
Tall stature	2	
Delayed puberty	5	
Precocious puberty	2	
DKA	2	

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### 16. Neurology (7 % of the course)

INTENDED LEARNING OUTCOMES:

#### 16.1 knowledge :-

By the end of this course the student will be able to:

Description		Method of teaching	Assessment
16.1.1	Describe the circulation of C.S.F. Describe causes, the clinical manifestations, investigations & plan for treatment of hydrocephalus.	Lectures	Written exam MCQ
16.1.2	Define seizure and epilepsy & its types. Describe causes, clinical manifestations, investigations and treatment of each type of epilepsy.	Independent learning	Short Essay  Oral exam
16.1.3	Describe febrile seizures, definition, types, incidence, causes, investigations and management as well as the prognosis.		
16.1.4	Define cerebral palsy & its types. Describe the clinical pictures, investigations, complications, DD and management.		
16.1.5	Enumerate the types of myopathy. Describe Duchenne Muscular Dystrophy, etiology, clinical presentation, investigations, complications, DD and treatment.		
16.1.6	Define flaccid paralysis. Describe causes, investigations.		

**16.2 Skills :-** Level of competence (5) This course will enable the student to:

16.2.1 Intellectual Skills		Method of teaching	Assessment
16.2.1.1	.Recognize the serious complications of neurological diseases	Lectures	Written exam
16.2.1.2	Interpret laboratory results	Clinical Rounds IDL	Clinical exam  OSCE
16.2.1.3	Interpret the historical and clinical data to formulate The diagnosis.		
16.2.2 Professional Skills		Method of teaching	Assessment
16.2.2.1	Thorough history taking focus on the neurology sheet.	Clinical Round	Clinical exam OSCE
16.2.2.2	Do good general and local neurologic examination.		
16.2.2.3	Perform bedside neurological tests	Audiovisual	
16.2.3 General skills		Method of teaching/ Assessment	
16.2.3.1	Counsel the parents about the indications for hospital admission.	Clinical rounds IDL	Clinical exam
16.2.3.2	Advise the parents about consultation of other specialist & follow up.		

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### 17. Pediatric Emergencies & Environmental Hazards (5 % of the course)

INTENDED LEARNING OUTCOMES:

**17.1 knowledge and understanding :-** By the end of this course student will be able to:

Description		Method of teaching	Assessment
17.1.1	Describe the management of cardiopulmonary arrest.	Lectures	MCQ
17.1.2	Define and describe different types of shock, clinical manifestations, investigations & treatment.		
17.1.3	Enumerate the common types of poisonings (organophosphorus, kerosin, corrosives & lead); clinical picture and management.	Independent learning	Short Essay
17.1.4	Enumerate types of drug toxicity (iron, hypnotic and paracetamol); clinical picture & management.		
17.1.5	Define coma & enumerate causes, the levels of coma, investigations and the plan of management.		
			Oral exam

**17.2 Skills :-** Level of competence (5) By the end of this course the student will be able to:

17.2.1 Intellectual Skills		Method of teaching	Assessment
17.2.1	Recognize complications & management of burne and near- drowning	Lectures	Written exam Clinical exam OSCE
17.2.2	Recognize that urgent treatment is essential in life threatening conditions	Clinical Rounds	
17.2.3	Choose rapidly the urgent investigation for each condition.		
17.2.4	Interpret laboratory results.		
17.2.2 Professional Skills			
17.2.1	Collect relevant & focus history.	Clinical Rounds	Clinical exam OSCE
17.2.2	Do general examination & check for dangerous signs.	Audiovisuals	
17.2.3	Properly do local examination.		
17.2.4	Interpret laboratory results.		
17.2.3 General Skills		Method of teaching/ Assessment	
17.3.1	Counsel the parents about the problem.	Clinical rounds, IDL	clinical exam
17.3.2	Advise parents about preventive measures and follow up the management.		

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Clinical cases (All cases are expected to be seen in the ER, pediatric ICU:

Case description	Min Number of cases	Case description	Min Number of cases
<b>Respiratory emergencies</b>		<b>Metabolic emergencies</b>	
1. Stridor	<b>5</b>	• Electrolyte disturbances	<b>5</b>
2. Wheezing & bronchial asthma	<b>15</b>	• Acid-base disturbances	<b>5</b>
3. Pneumonia , effusion and pneumothorax	<b>10</b>	• Diabetic ketoacidosis	<b>4</b>
4. Foreign body inhalation	<b>5</b>	• Addisonian crises	<b>1</b>
5. Respiratory failure	<b>2</b>	• Urea cycle defects	<b>1</b>
<b>Cardiac emergencies</b>		• Aminoacidopathies	<b>1</b>
1. Arrhythmias	<b>5</b>	• Hepatic coma	<b>2</b>
2. Cyanotic spell	<b>4</b>	<b>Hematological emergencies</b>	
3. Heart failure	<b>5</b>	• Acute hemolytic crises	<b>5</b>
4. Cardiogenic shock	<b>2</b>	• Sickle cell anemia in crises	<b>2</b>
<b>Neurological emergencies</b>		• Febrile neutropenia	<b>2</b>
1. Coma	<b>4</b>	• Severe pallor for D.D	<b>5</b>
2. Convulsions	<b>10</b>	• Hypercoagulable state & DIC	<b>2</b>
3. Stroke	<b>2</b>	<b>Other emergencies</b>	
4. Sudden weakness/ paralysis	<b>2</b>	• Childhood injuries	<b>10</b>
5. Increased intracranial tension	<b>2</b>	• Burns and surgical emergencies	<b>10</b>
6. Hypertensive encephalopathy	<b>1</b>	• Shock and sepsis	<b>8</b>

Procedures in the ER and in Pediatric ICU:

Procedure Name	Observe	Perform under supervision	Perform independently
1. Cardiopulmonary resuscitation	<b>10</b>	<b>10</b>	<b>2</b>
2. Intravenous line insertion	<b>5</b>	<b>5</b>	<b>5</b>
3. Nasal-gastric tube insertion	<b>5</b>	<b>5</b>	<b>5</b>
4. Oro- pharyngeal suction	<b>5</b>	<b>5</b>	<b>5</b>
5. Urinary catheter application	<b>5</b>	<b>5</b>	<b>2</b>
6. Fluid therapy	<b>2</b>	<b>10</b>	<b>10</b>
7. Blood product transfusion	<b>2</b>	<b>10</b>	<b>2</b>
8. Total parenteral nutrition	<b>5</b>	<b>5</b>	
9. Endotracheal intubation	<b>10</b>	<b>5</b>	<b>5</b>
10. Cardio version	<b>2</b>	<b>2</b>	
11. Arterial sample	<b>10</b>	<b>5</b>	
12. Insertion of chest tube	<b>10</b>	<b>2</b>	
13. Mechanical ventilation	<b>10</b>	<b>10</b>	<b>10</b>
14. Exchange transfusion	<b>3</b>	<b>2</b>	<b>2</b>
15. Ascites tap	<b>2</b>	<b>2</b>	
16. Venous cut down	<b>5</b>	<b>2</b>	
17. Wound dressing	<b>5</b>	<b>5</b>	<b>5</b>
18. Simple Suturing	<b>10</b>	<b>10</b>	<b>10</b>
19. Control of external hemorrhage	<b>10</b>	<b>10</b>	<b>10</b>

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### 18. Social & Preventive Pediatric (Vaccination) (4 % of the course)

INTENDED LEARNING OUTCOMES:

**18.1 knowledge and understanding:** - By the end of this course student will be able to:

Description		Method of teaching	Assessment
18.1.1	Use IMCI program.	Lectures  Independent learning	Written exam MCQ  Short Essay  Oral exam
18.1.2	List the vaccinations of the compulsory immunization program of Egypt from birth through adolescence; the indications, adverse side effects & contraindication of each vaccine.		
18.1.3	List other non-compulsory vaccines, the indications, adverse side effects & contraindications of each vaccine.		

**18.2 Skills :-** Level of competence (5)

By the end of this course the student will be able to:

18.2.1 Intellectual Skills		Method of teaching	Assessment
18.2.1.1	.Recognize immunization in immune-compromized patients	Lectures Clinical Rounds  IDL	Written exam Clinical exam OSCE
18.2.1.2	Recognize complications of vaccination		
18.2.1.3	Formulate diagnosis and design the plan of management by using IMCI program		
18.2.2 Professional Skills			
18.2.2.1	Assess the dangerous signs of the disease.	Clinical Rounds	Clinical exam OSCE
18.2.2.2	Proper history taking.		
18.2.2.3	Properly elicit the physical signs.	Audiovisuals	
18.2.3 General Skills			
18.2.3.1	Counsel the parents about the clinical problem.	Clinical Rounds  IDL	Clinical exam OSCE
18.2.3.2	Advise the parents about the management, the referral & the follow up.		
18.2.3.3	Communicate appropriately with patients and parents		

## II) Pathology

**Knowledge;** By the end of the training program, trainees must have adequate knowledge and deep understanding of

Description	Method Of Learning	Method Of Assessment

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II.1.1 The basic microscopic and macroscopic changes that occur during the course of common pediatric diseases	Lectures , and independent study	Written exam
II.1.2 The structural abnormalities in pediatric diseases and their correlation with disease presentation and course		Oral exam

<b>Topic</b>	
II.1.3 Rheumatic fever and rheumatic heart disease	II.1.19 Congenital anomalies of the GIT
II.1.4 Infective endocarditis	II.1.20 Enterocolitis
II.1.5 Non Infective Cardiac vegetations	II.1.21 Malabsorption syndromes
II.1.6 Myocarditis	II.1.22 Idiopathic inflammatory bowel disease
II.1.7 Pericarditis	II.1.23 Intestinal obstruction
II.1.8 Congenital anomalies of the lung	II.1.24 Gastrointestinal lymphoma
II.1.9 Neonatal respiratory distress syndrome (RDS)	II.1.25 Viral hepatitis
II.1.10 Pulmonary infections	II.1.26 Bacterial,protozoal and helminthes infections
II.1.11 Inflammatory pleural effusions	II.1.27 Congenital anomalies of the biliary tract
II.1.12 Non inflammatory pleural effusions	II.1.28 Cystic fibrosis (Mucoviscidosis)
II.1.13 Congenital anomalies of the kidney	II.1.29 Type I Diabetes Mellitus
II.1.14 Glomerular diseases	II.1.30 Meningitis and encephalitis
II.1.15 Diseases affecting tubules and interstitium	II.1.31 CNS Tumors
II.1.16 Wilms tumor	II.1.32 Histiocytosis
II.1.17 Sarcoidosis	II.1.33 Diseases of the spleen
II.1.18 Lymphoma and leukemia	II.1 34 Pulmonary tuberculosis

### **III) Applied physiology**

Module Intended Learning Outcomes

III.1.Knowledge By the end of the training program, trainees must have adequate knowledge and deep understanding of

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Description	Method Of Learning	Method Of Assessment
III.1.1 The normal functions of the body at cell and organ/system level and how deviation from normal can lead to different disease processes in the pediatric age group	Lectures , and independent study	Written exam  Oral exam

Topic	
III.1.2 Body fluids , electrolytes composition and their homeostasis	III.1.5 Acid-base balance
III.1.3 Respiratory physiology <ul style="list-style-type: none"> <li>• III.1.3.1 Pulmonary circulation</li> <li>• III.1.3.2 Gas exchange</li> <li>• III.1.3.3 Dyspnea and Control of respiration</li> <li>• III.1.3.4 Oxygen dissociation curve</li> </ul>	III.1.6 Gastrointestinal tract <ul style="list-style-type: none"> <li>• III.1.6.1 Gut hormones</li> <li>• III.1.6.2 Digestion and absorption</li> <li>• III.1.6.3 Liver functions</li> </ul>
III.1.4 Cardiovascular physiology <ul style="list-style-type: none"> <li>• III.1.4.1 Cardiac cycles</li> <li>• III.1.4.2 Cardiac output</li> <li>• III.1.4.3 Blood pressure</li> <li>• III.1.4.III Capillary circulation</li> <li>• III.1.III.5 Interstitial fluids and Edema</li> <li>• III.1.4.6 Principles of ECG</li> </ul>	III.1.7 Central nervous system <ul style="list-style-type: none"> <li>• III.1.7.1 CSF circulation and blood brain barriers</li> <li>• III.1.7.2 Muscle physiology: tone, stretch reflex, control of movement</li> <li>• III.1.7.3 Cerebellum and coordination</li> <li>• III.1.7.4 Pain</li> </ul>

Physiology Topic (continue)	
4.1.8 Endocrine system	4.1.11 The kidney

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<ul style="list-style-type: none"> <li>• 4.1.8.1 Obesity, growth and puberty</li> <li>• 4.1.8.2 Pituitary, thyroid and suprarenal glands</li> <li>• 4.1.8.3 Short stature</li> <li>• 4.1.8.4 Calcium homeostasis</li> <li>• 4.1.8.5 Sex differentiation</li> </ul>	<ul style="list-style-type: none"> <li>• 4.1.11.1 Renal functions</li> <li>• 4.1.11.2 Control of micturition</li> </ul>
<p>4.1.9 Metabolism</p> <ul style="list-style-type: none"> <li>• 4.1.9.1 Food intake and energy balance</li> <li>• 4.1.9.2 Temperature regulation and fever</li> </ul>	<p>4.1.12 Neonatal physiology</p> <ul style="list-style-type: none"> <li>• 4.1.12.1 Adaptation to extra-uterine life</li> <li>• 4.1.12.2 Neonatal growth and hormonal changes</li> <li>• 4.1.12.3 Fetal and neonatal oxygen saturation</li> </ul>
<p>4.1.10 Haematology</p> <ul style="list-style-type: none"> <li>• 4.1.10.1 Haematopoiesis</li> <li>• 4.1.10.2 Haemostasis</li> </ul>	



*The Distributed Teaching Hours of the Pediatric Course*

THE TOPICS	WEIGHT (%)	THE ASSUMED
1. Growth and development	5	5
2. Behavioral & psychiatric problems	2	2
3. Nutrition & Infant Feeding	10	10
4. Human Genetics	2	2
5. Neonatology	10	10
6. Immunology and Allergic diseases	4	4
7. Inborn Error of Metabolism	4	4
8. Rheumatic (collagen) diseases	3	3
9. Infectious diseases	9	9
10. Digestive system / Hepatobiliary system	7	7
11. Respiratory system	5	5
12. Cardiovascular system	7	7
13. Hematology / Oncology	7	7
14. Nephrology & Urology	5	5
15. Endocrinology	4	4
16. Neurology	7	7
17. Pediatric emergencies & environmental hazards	5	5
18. Social & Preventive Pediatric (IMCI & vaccination)	4	4
<b>THE TOTAL</b>	<b>100</b>	<b>100</b>
Pathology and physiology	-----	15

### *Teaching Hours for Pediatric Course*

Total teaching hours: **230** hours in **3** months duration for each group

Distributed as follow:

- **Lectures:** 2 hours × 50 days = **100 hours.**
- **Clinical sessions:** 2 hours × 50 days = **100 hours.**
- **IDL sessions:** 1 hour × 30 days = **30 hours.**
- **Pathology and physiology:** 1 hour × 15 days + lectures in Pathology and physiology departments

The students study the pediatrics curriculum in 3 months for each group.

They study 5 days/ week, for 12 weeks.

- 2 weeks were abstracted for final revision and evaluation.

- 10 weeks studying the pediatric course specification.

- Every day 9-11 am for **Pediatrics Lectures**, 11- 1 pm for **Clinical rounds**  
1-2 noon for **IDL classes.**

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### ***EXAMINATION DESCRIPTION***

<b>Examination</b>	<b>Description</b>	<b>Marks</b>
Written examination	paper 1	100
	paper 2	100
	paper 3 (problem solving)	100
	paper 4 (Pathology and physiology)	100
Clinical examination	- long case	50
	- Three Short cases	50
Oral examination	- Oral question on general pediatrics	70
	- OSPI	30
	Physiology	50
	pathology	50
<b>TOTAL</b>		<b>700 Marks</b>

***LEARNING AND REFERENCE MATERIALS:***

**BASIC MATERIALS:**

- Nelson Textbook of Pediatrics (Behrman)
- Manual of Neonatal care
- Signs and symptoms in Pediatrics (Tunnessen).
- Forfar Textbook of Pediatrics (Campbell).

**OTHER MATERIALS:**

- Periodicals of Pediatric Clinics of North America
- Journal of Pediatrics
- Recent Advances in Pediatrics
- Update in pediatrics