

## المعايير الأكاديمية لدرجة الدكتوراة في جراحة الأطفال

### **A- Knowledge & Understanding:**

- A1:** Explain growth and development of the human body and the embryological background of surgically manageable congenital anomalies.
- A2:** Recognize principles of normal and abnormal anatomy and special anatomical considerations in pediatrics.
- A3:** Understand principles of general pathological processes responsible for different surgical diseases.
- A4:** Recognize the epidemiology, etiology and risk factors of different surgical diseases in pediatrics.
- A5:** Recognize different clinical presentations and variable signs required for diagnosis of different pediatric surgical diseases
- A6:** Predict and prevent possible complications of different pediatric surgical diseases and deal with neonatal and pediatric medical and surgical emergencies.
- A7:** Recognize the scientific basis and interpretation of common diagnostic studies with emphasis on their prioritization in management plans.
- A8:** Identify the principles and international guidelines and evidence-based perspectives & their role in guiding the management plan for pediatric surgical diseases.
- A9:** Recognize basic principles of general surgical skills and basic steps of different pediatric surgical procedures.
- A10:** Explain general principles of preoperative, operative and postoperative care.
- A11:** Recognize the principles of infection control in hospitals and within community.
- A12:** Understand the principles governing ethical decision making in clinical practice and the major ethical dilemmas in medicine, with its relevant medico-legal aspects.
- A13:** Recognize principles of inferential statistics.
- A14:** Understand principles of critical appraisal, systematic review & metaanalysis.
- A15:** Explain principles, components, recent trends & updates of communication.

### **B-Intellectual skills**

- B1:** Interpret basic embryological knowledge to understand the theories of different congenital anomalies in pediatric surgery.
- B2:** Recognize the surgical importance of the anatomical background and correlate the anatomical knowledge to the surgical practice.
- B3:** Interpret theories of pathogenesis of different pediatric surgical diseases.
- B4:** Recognize the skills to obtain and document a complete or focused medical history in the outpatient, inpatient or emergency settings.
- B5:** Interpret patient's symptoms and physical signs in terms of anatomic, pathologic and functional diagnostic significances.
- B6:** Identify surgical problems and select the most appropriate and cost effective diagnostic procedures for each problem.
- B7:** Analyze different items of differential diagnoses of pediatric surgical problems with prioritization of the common possibilities for each problem.
- B8:** Compare different treatment options and weighs the pros and cons of the proposed interventions.
- B9:** Recognize patients with life / organ threatening conditions and institute first aid and initial therapy.

- B10:** Recognize the essential steps and surgical tips to avoid intraoperative complications of different pediatric surgical procedures.
- B11:** Apply principles of critical appraisal & evidence based medicine.
- B12:** Apply basic knowledge to design different types of researches.
- B13:** Apply principles of planning, staffing, managing & evaluation in different pediatric surgical problems.
- B14:** Estimate the communication skills required for different clinical and surgical situations.

### **C- Professional/practical skills:**

- C1:** Assess normal anatomy and apply anatomical knowledge on surgical practice.
- C2:** Differentiate between healthy and pathological tissues in different body systems.
- C3:** Obtain thorough clinical history that is well-directed towards the diagnostic purposes.
- C4:** Perform effective examination and elicit key signs for different pediatric surgical diseases.
- C5:** Analyze clinical investigations' findings in relation to possible courses of therapy including indications, risks, benefits and alternatives as well as plans for follow up.
- C6:** Write clear and concise medical records including: admission sheets, progress notes, and physician' orders, referrals for consultation, discharge summaries and follow up notes.
- C7:** Achieve consensus and obtain informed consent from the patient or the parents for the treatment plan.
- C8:** Perform independently various clinical and surgical procedures and know when and how to ask for senior consultation.
- C9:** Identify his/her personal weaknesses through accurate self-assessment and/or supervisors and colleagues and practice actively to address these weaknesses using the appropriate technological means.
- C10:** Update his/her knowledge utilizing the resources of biomedical information to improve his professional practice and to follow recent innovations in pediatric surgery.
- C11:** Formulate research hypothesis and design different types of researches.
- C12:** Conduct patient and/ or parents interviews in a professional manner that is well directed to the clinical purposes.

### **D-Communication & Transferable skills**

- D1:** Deliver compassionate and non-judgmental care for all patients with respect for their privacy and dignity.
- D2:** Treat the patient as a person, not as a disease and understand that patients are human beings with beliefs, values, goals and concerns which must be respected.
- D3:** Be aware of the ethical behavior expected of doctors towards patients with recognition of patients' rights, particularly with regard to confidentiality and informed consent.
- D4:** Attain the honesty and integrity in all interactions with patients, families, colleagues and others with whom the physician must interact in their professional life.

- D5:** Develop written & oral presentations skills for both pediatric surgery professionals & other audiences.
- D6:** Respect the role of other health care professionals, and the need to collaborate with others in caring of individual patients.
- D7:** Recognize her/his limits of knowledge and experience by communication with his supervisors and colleagues aiming to update and improve her/his current medical practice.

## مقارنة ما يقدمه البرنامج من نتائج تعليمية مستهدفة مع المعايير المرجعية

### لبرنامج الدكتوراة في جراحة الأطفال

#### أ - المعرفة والفهم:

المقررات التي تحقق المعايير الأكاديمية للبرامج	ILOs مخرجات التعلم المستهدفة	(ARS) Benchmark المعايير الأكاديمية لدرجة الدكتوراة في جراحة الأطفال	(NARS) المعايير القومية الأكاديمية القياسية العامة لبرامج قطاع الدراسات العليا (درجة الدكتوراه في جراحة الأطفال)
<ul style="list-style-type: none"> <li>- Surgical anatomy and embryology</li> <li>- Special surgical pathology</li> <li>-Pediatric surgery</li> <li>- Microscopic surgery</li> </ul>	A1,2,3,7,8.	<ul style="list-style-type: none"> <li>- Explain growth and development of the human body and the embryological background of surgically manageable congenital anomalies.</li> <li>- Recognize principles of normal and abnormal anatomy and special anatomical considerations in pediatrics.</li> <li>- Understand principles of general pathological processes responsible for different surgical diseases.</li> <li>- Recognize the scientific basis and interpretation of common diagnostic studies with emphasis on their prioritization in management plans.</li> <li>- Identify the principles and international guidelines and evidence-based perspectives &amp; their role in guiding the management plan for pediatric surgical diseases.</li> </ul>	1- The theories, concepts and modern knowledge in the field of specialization and other related field.
<ul style="list-style-type: none"> <li>- Surgical anatomy and embryology</li> <li>- Special surgical pathology</li> <li>-Pediatric surgery</li> </ul>	A12-14.	<ul style="list-style-type: none"> <li>- Understand the principles governing ethical decision making in clinical practice and the major ethical</li> </ul>	2- The basics, methodologies, ethics of scientific research

<ul style="list-style-type: none"> <li>- Neonatal intensive care.</li> <li>- Microscopic surgery</li> </ul>		<p>dilemmas in medicine, with its relevant medico-legal aspects.</p> <ul style="list-style-type: none"> <li>- Recognize principles of inferential statistics.</li> <li>- Understand principles of critical appraisal, systematic review &amp; metaanalysis.</li> </ul>	and its versatile tools
<ul style="list-style-type: none"> <li>-Pediatric surgery</li> <li>- Neonatal intensive care.</li> <li>- Microscopic surgery</li> </ul>	A12, 15.	<ul style="list-style-type: none"> <li>- Understand the principles governing ethical decision making in clinical practice and the major ethical dilemmas in medicine, with its relevant medico-legal aspects.</li> <li>- Explain principles, components, recent trends &amp; updates of communication.</li> </ul>	3- The moral and legal ethics of the professional practice in the area of specialization
<ul style="list-style-type: none"> <li>-Pediatric surgery</li> <li>- Neonatal intensive care.</li> <li>- Microscopic surgery</li> </ul>	A5-10.	<ul style="list-style-type: none"> <li>- Recognize different clinical presentations and variable signs required for diagnosis of different pediatric surgical diseases.</li> <li>- Predict and prevent possible complications of different pediatric surgical diseases and deal with neonatal and pediatric medical and surgical emergencies.</li> <li>- Recognize the scientific basis and interpretation of common diagnostic studies with emphasis on their prioritization in management plans.</li> <li>- Identify the principles and international guidelines and evidence-based perspectives &amp; their role in guiding the management plan for pediatric surgical diseases.</li> <li>- Recognize basic principles of general surgical skills and basic steps of different pediatric surgical procedures.</li> <li>- Explain general principles of preoperative, operative and postoperative care.</li> </ul>	4- The concepts and principles of quality of the professional practice in the area of specialization

-Pediatric surgery - Neonatal intensive care. Microscopic surgery	A4,11.	- Recognize the epidemiology, etiology and risk factors of different surgical diseases in pediatrics.  - Recognize the principles of infection control in hospitals and within community.	5- The knowledge on the effects of professional practice on the environment and ways of development and maintenance of the environment
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ب - القدرات الذهنية :

المقررات التي تحقق المعايير الأكاديمية للبرامج	ILOs مخرجات التعلم المستهدفة	(ARS) Benchmark المعايير الأكاديمية لدرجة الدكتوراه في جراحة الأطفال	(NARS) المعايير القومية الأكاديمية القياسية العامة لبرامج قطاع الدراسات العليا (درجة الدكتوراه في جراحة الأطفال)
- Surgical anatomy and embryology  - Special surgical pathology  -Pediatric surgery	B1-5.	- Interpret basic embryological knowledge to understand the theories of different congenital anomalies in pediatric surgery.  - Recognize the surgical importance of the anatomical background and correlate the anatomical knowledge to the surgical practice.  - Interpret theories of pathogenesis of different pediatric surgical diseases.  - Recognize the skills to obtain and document a complete or focused medical history in the	1- Analyze and evaluate of information in the field of specialization and make full use of such information to solve problems

		<p>outpatient, inpatient or emergency settings.</p> <ul style="list-style-type: none"> <li>- Interpret patient's symptoms and physical signs in terms of anatomic, pathologic and functional diagnostic significances.</li> </ul>	
<ul style="list-style-type: none"> <li>-Pediatric surgery</li> <li>- Neonatal intensive care.</li> <li>- Microscopic surgery</li> </ul>	B6-8.	<ul style="list-style-type: none"> <li>- Identify surgical problems and select the most appropriate and cost effective diagnostic procedures for each problem.</li> <li>- Analyze different items of differential diagnoses of pediatric surgical problems with prioritization of the common possibilities for each problem.</li> <li>- Compare different treatment options and weighs the pros and cons of the proposed interventions.</li> </ul>	2- Solve specific problems on the basis of limited and contradictory information
<ul style="list-style-type: none"> <li>- Surgical anatomy and embryology</li> <li>- Special surgical pathology</li> <li>-Pediatric surgery</li> <li>- Neonatal intensive care.</li> <li>- Microscopic surgery</li> </ul>	A13,14. B11-13.	<ul style="list-style-type: none"> <li>- Recognize principles of inferential statistics.</li> <li>- Understand principles of critical appraisal, systematic review &amp; metaanalysis.</li> <li>- Apply principles of critical appraisal &amp; evidence based medicine.</li> <li>- Apply basic knowledge to design different types of researches.</li> </ul>	3- Carry out a research studies to add new information to the knowledge.

		<ul style="list-style-type: none"> <li>- Apply principles of planning, staffing, managing &amp; evaluation in different pediatric surgical problems.</li> </ul>	
<ul style="list-style-type: none"> <li>- Surgical anatomy and embryology.</li> <li>- Special surgical pathology.</li> <li>- Pediatric surgery.</li> </ul>	B8,11,12.	<ul style="list-style-type: none"> <li>- Compare different treatment options and weighs the pros and cons of the proposed interventions.</li> <li>- Apply principles of critical appraisal &amp; evidence based medicine.</li> <li>- Apply basic knowledge to design different types of researches.</li> </ul>	4- Write scientific papers.
<ul style="list-style-type: none"> <li>- Pediatric surgery</li> <li>- Neonatal intensive care.</li> </ul>	B9,10.	<ul style="list-style-type: none"> <li>- Recognize patients with life / organ threatening conditions and institute first aid and initial therapy.</li> <li>- Recognize the essential steps and surgical tips to avoid intraoperative complications of different pediatric surgical procedures.</li> </ul>	5- Assess and analyze risks in the field of specialization
<ul style="list-style-type: none"> <li>- Surgical anatomy and embryology.</li> <li>- Special surgical pathology.</li> <li>- Pediatric surgery.</li> <li>- Neonatal intensive</li> </ul>	B6,7,8.	<ul style="list-style-type: none"> <li>- Identify surgical problems and select the most appropriate and cost effective diagnostic procedures for each problem.</li> <li>- Analyze different items of differential diagnoses of pediatric surgical problems with prioritization of the common possibilities for each problem.</li> </ul>	6- Plan to improve performance in the field of specialization.

care.		<ul style="list-style-type: none"> <li>- Compare different treatment options and weighs the pros and cons of the proposed interventions.</li> </ul>	
-Pediatric surgery - Neonatal intensive care. - Microscopic surgery	B5,8,13.	<ul style="list-style-type: none"> <li>- Interpret patient's symptoms and physical signs in terms of anatomic, pathologic and functional diagnostic significances.</li> <li>- Compare different treatment options and weighs the pros and cons of the proposed interventions.</li> <li>- Apply principles of planning, staffing, managing &amp; evaluation in different pediatric surgical problems.</li> </ul>	7- Make good decisions in different professional aspects.
- Pediatric surgery - Microscopic surgery	B11,12.	<ul style="list-style-type: none"> <li>- Apply principles of critical appraisal &amp; evidence based medicine.</li> <li>- Apply basic knowledge to design different types of researches.</li> </ul>	8- Have innovation/creativity
-Pediatric surgery - Neonatal intensive care. - Microscopic surgery	A15. B11, 14.	<ul style="list-style-type: none"> <li>- Explain principles, components, recent trends &amp; updates of communication.</li> <li>- Apply principles of critical appraisal &amp; evidence based medicine.</li> <li>- Estimate the communication skills required for different clinical and surgical situations.</li> </ul>	9- Discuss and negotiate in high level of confidence based upon proofs and evidences



ج - المهارات العملية:

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<ul style="list-style-type: none"> <li>- Surgical anatomy and embryology</li> <li>- Special surgical pathology</li> <li>- Pediatric surgery</li> <li>- Neonatal intensive care.</li> <li>- Microscopic surgery.</li> </ul>	C1-4.	<ul style="list-style-type: none"> <li>- Assess normal anatomy and apply anatomical knowledge on surgical practice.</li> <li>- Differentiate between healthy and pathological tissues in different body systems.</li> <li>- Obtain thorough clinical history that is well-directed towards the diagnostic purposes.</li> <li>- Perform effective examination and elicit key signs for different pediatric surgical diseases.</li> <li>-</li> </ul>	1- Apply modern and principle professional skills in the area of specialization
<ul style="list-style-type: none"> <li>- Pediatric surgery</li> <li>- Neonatal intensive care.</li> <li>- Microscopic surgery</li> </ul>	C6,7.	<ul style="list-style-type: none"> <li>- Write clear and concise medical records including: admission sheets, progress notes, and physician' orders, referrals for consultation, discharge summaries and follow up notes.</li> <li>- Achieve consensus and obtain informed consent from the patient or the parents for the treatment plan.</li> </ul>	2- Write and evaluate technical reports.
<ul style="list-style-type: none"> <li>- Pediatric surgery</li> <li>- Neonatal intensive care.</li> </ul>	C5, 8.	<ul style="list-style-type: none"> <li>- Analyze clinical investigations' findings in relation to possible courses of therapy including indications, risks, benefits and alternatives as well as plans for follow up.</li> <li>-</li> </ul>	3- Adopt assessment methods and tools existing in the area of specialization

		<ul style="list-style-type: none"> <li>- Perform independently various clinical and surgical procedures and know when and how to ask for senior consultation.</li> </ul>	
<ul style="list-style-type: none"> <li>- Pediatric surgery.</li> <li>- Neonatal intensive care.</li> <li>- Microscopic surgery.</li> </ul>	C8-10.	<ul style="list-style-type: none"> <li>- Perform independently various clinical and surgical procedures and know when and how to ask for senior consultation.</li> <li>- Identify his/her personal weaknesses through accurate self-assessment and/or supervisors and colleagues and practice actively to address these weaknesses using the appropriate technological means.</li> <li>- Update his/her knowledge utilizing the resources of biomedical information to improve his professional practice and to follow recent innovations in pediatric surgery.</li> </ul>	4- Use of the appropriate technological means to serve the professional practice.
<ul style="list-style-type: none"> <li>- Pediatric surgery</li> <li>- Neonatal intensive care.</li> <li>- Microscopic surgery.</li> </ul>	C9-12.	<ul style="list-style-type: none"> <li>- Identify his/her personal weaknesses through accurate self-assessment and/or supervisors and colleagues and practice actively to address these weaknesses using the appropriate technological means.</li> <li>- Update his/her knowledge utilizing the resources of biomedical information to improve his professional practice and to follow recent innovations in pediatric surgery.</li> <li>- Formulate research hypothesis and design different types of researches.</li> <li>- Conduct patient and/ or parents interviews in a professional manner that is well directed to the clinical purposes.</li> </ul>	5- Plan to improve the performance of the professional practice and development of the performance of others

د- مهارات الاتصال:

المقررات التي تحقق المعايير الأكاديمية للبرامج	ILOs مخرجات التعلم المستهدفة	(ARS) Benchmark المعايير الأكاديمية لدرجة الدكتوراة في جراحة الأطفال	(NARS) المعايير القومية الأكاديمية القياسية العامة لبرامج قطاع الدراسات العليا (درجة الدكتوراه في جراحة الأطفال)
<ul style="list-style-type: none"> <li>- Surgical anatomy and embryology .</li> <li>- Special surgical pathology</li> <li>-Pediatric surgery.</li> <li>- Neonatal intensive care.</li> <li>- Microscopic surgery.</li> </ul>	D1,3,4.	<ul style="list-style-type: none"> <li>- Deliver compassionate and non-judgmental care for all patients with respect for their privacy and dignity.</li> <li>- Be aware of the ethical behavior expected of doctors towards patients with recognition of patients' rights, particularly with regard to confidentiality and informed consent.</li> <li>- Attain the honesty and integrity in all interactions with patients, families, colleagues and others with whom the physician must interact in their professional life..</li> </ul>	1- Communicate effectively in different aspects.
<ul style="list-style-type: none"> <li>-Pediatric surgery</li> <li>- Neonatal intensive care.</li> <li>- Microscopic surgery</li> </ul>	D5-7	<ul style="list-style-type: none"> <li>- Develop written &amp; oral presentations skills for both pediatric surgery professionals &amp; other audiences.</li> <li>- Respect the role of other health care professionals, and the need to collaborate with others in caring of individual patients.</li> <li>- Recognize her/his limits of knowledge and experience by communication with his supervisors and colleagues aiming to update and improve her/his current medical practice.</li> </ul>	2- Demonstrate efficient IT capabilities in such a way that serves in the development of the professional practice.
<ul style="list-style-type: none"> <li>-Pediatric surgery</li> <li>- Neonatal intensive care.</li> </ul>	D5,6.	<ul style="list-style-type: none"> <li>- Develop written &amp; oral presentations skills for both pediatric surgery professionals &amp; other audiences.</li> </ul>	3- Manage the scientific meetings and manage time

- Microscopic surgery		<ul style="list-style-type: none"> <li>- Respect the role of other health care professionals, and the need to collaborate with others in caring of individual patients.</li> </ul>	
<ul style="list-style-type: none"> <li>- Pediatric surgery</li> <li>- Neonatal intensive care.</li> <li>- Microscopic surgery</li> </ul>	.C9. D7.	<ul style="list-style-type: none"> <li>- Identify his/her personal weaknesses through accurate self-assessment and/or supervisors and colleagues and actively set a clear learning plan to address these weaknesses.</li> <li>- Recognize her/his limits of knowledge and experience by communication with his supervisors and colleagues aiming to update and improve her/his current medical practice.</li> </ul>	<p>4- Adopt self-assessment and Adopt life-long learning.</p>
<ul style="list-style-type: none"> <li>- Pediatric surgery</li> <li>- Neonatal intensive care.</li> <li>- Microscopic surgery</li> </ul>	.C10. D7.	<ul style="list-style-type: none"> <li>- Update his/her knowledge utilizing the resources of biomedical information to improve his professional practice and to follow recent innovations in pediatric surgery.</li> <li>- Recognize her/his limits of knowledge and experience by communication with his supervisors and colleagues aiming to update and improve her/his current medical practice.</li> </ul>	<p>5- Use different resources for information and knowledge</p>
- Pediatric surgery.	D1,2,6,7.	<ul style="list-style-type: none"> <li>- Deliver compassionate and non-judgmental care for all patients with respect for their privacy and dignity.</li> <li>- Treat the patient as a person, not as a disease and understand that patients are human beings with beliefs, values, goals and concerns which must be respected.</li> <li>- Respect the role of other health care professionals, and the need to collaborate with others in caring of individual patients.</li> <li>- Recognize her/his limits of knowledge and experience by communication with his supervisors and colleagues aiming to update and improve her/his current medical practice.</li> </ul>	<p>6- Collaborate effectively within multidisciplinary team and lead team works.</p>

<p>-Pediatric surgery</p> <p>- Neonatal intensive care.</p> <p>- Microscopic surgery</p>	<p>D5,6.</p>	<ul style="list-style-type: none"> <li>- Develop written &amp; oral presentations skills for both pediatric surgery professionals &amp; other audiences.</li> <li>- Respect the role of other health care professionals, and the need to collaborate with others in caring of individual patients.</li> <li>-</li> </ul>	<p>7- Demonstrate a high level of competence in the management of time and scientific meetings</p>
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