

**مقارنة ما يقدمه البرنامج من نتائج تعليمية مستهدفة مع المعايير المرجعية لبرنامج  
الدكتوراة في جراحة القلب والصدر.**

أ – المعرفة والفهم:

المقررات التي تحقق المعايير الأكاديمية للبرنامج	ILOs مخرجات التعلم المستهدفة	(ARS) Benchmark المعايير الأكاديمية لقسم جراحة القلب والصدر كلية الطب – جامعة المنصورة	(NARS) المعايير القومية الأكاديمية القياسية العامة لبرنامج قطاع الدراسات العليا (درجة الدكتوراة في طب جراحة القلب والصدر)
Thesis	-----	Demonstrate a rigorous approach to research.	1- Recent advances and areas under research in the field of cardiothoracic surgery.
Cardiac surgery Thoracic surgery Cardiac bioengineering Thesis	D1,D2	Make clinical decisions and judgments based upon sound evidence for the benefit of individuals and the population served. Be an effective member in a team work. Demonstrate a rigorous approach to research	2- Scientific research ethics, research methodology & research design. Curriculum must advance knowledge of the basic principles of research, including how research is conducted, evaluated, explained to patients, and applied to patient care.
Cardiac surgery Thoracic surgery Log book Thesis	D1,D2	Create effective doctor/patient communication. Make clinical decisions and judgments based upon sound evidence for the benefit of individuals and the population served.	3- Legal aspects in practice of cardiothoracic surgery as well as medical ethics.
Cardiac surgery Thoracic surgery Logbook Post-cardiac surgery ICU Cardiac assist devices	B1-4,C1-3,D2	Diagnose congenital heart diseases. Diagnose adult cardiac diseases. Diagnose thoracic diseases Interpret various investigational and radiological tools to confirm diagnosis. Analyze Case presentation including history taking, clinical examination, investigations & radiology needed and finally differential diagnosis of the case Evaluate and manage a patient undergoing thoracic Surgery including surgical management where appropriate. Evaluate and manage a traumatized patient including surgical management where appropriate Evaluate and manage uncomplicated surgical aspects of a patient with aortovascular disease, including operative management where appropriate. Evaluate and manage a patient with both uncomplicated and complicated heart valve disease, including operative management. Evaluate and manage all the surgical aspects of a patient with ischaemic heart disease including the complications of ischaemic heart disease. Evaluate and manage all the surgical aspects of uncomplicated congenital heart diseases. Create effective doctor/patient communication. Make clinical decisions and judgments based upon sound evidence for the benefit of individuals and the population served.	4- Principles and basic concepts of quality in professional practise including planning, improvement of performance and control of practising outcomes.
Cardiac surgery Thoracic surgery Cardiac assist devices and cardiopulmonary bypass	A1-5	Basic knowledge: Describe embryological development of the heart and thoracic structures with knowledge of congenital anomalies related. Describe anatomy of the heart and thoracic structures with knowledge of	5- Knowledge related to cardiothoracic surgery and research results in improving public health outcomes.

		<p>applied anatomy. Describe pathology of cardiac and thoracic diseases.</p> <p>Clinical knowledge: Match symptomatology of congenital and adult cardiac diseases. Match symptomatology of thoracic diseases.</p> <p>Operative knowledge: List techniques and complications of cardiopulmonary bypass, myocardial protection and mechanical support.</p>	
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ب – القدرات الذهنية :

المقررات التي تحقق المعايير الأكاديمية للبرامج	مخرجات التعلم المستهدفة ILOs	(ARS) Benchmark المعايير الأكاديمية لقسم جراحة القلب والصدر	(NARS) المعايير القومية الأكاديمية القياسية العامة لبرامج قطاع الدراسات العليا (درجة الدكتوراة في جراحة القلب والصدر)
Cardiac surgery Thoracic surgery	B1-4	Diagnose congenital heart diseases. Diagnose adult cardiac diseases. Diagnose thoracic diseases Interpret various investigational and radiological tools to confirm diagnosis. Analyze Case presentation including history taking, clinical examination, investigations & radiology needed and finally differential diagnosis of the case	6- Medical data analysis, interpretation and proper therapy choice.
Cardiac surgery Thoracic surgery	B1-4	Diagnose congenital heart diseases. Diagnose adult cardiac diseases. Diagnose thoracic diseases Interpret various investigational and radiological tools to confirm diagnosis. Analyze Case presentation including history taking, clinical examination, investigations & radiology needed and finally differential diagnosis of the case	7- Medical problem solving and Evidence-based medicine.
Thesis	--	Be an effective member in a team work. Demonstrate a rigorous approach to research	8- Participation in research development and innovation.
Thesis	--	Be an effective member in a team work. Demonstrate a rigorous approach to research	9- Scientific paper reviewing.
Cardiac surgery Thoracic surgery Cardiac assist devices Post-cardiac surgery ICU	C1-3	Evaluate and manage a patient undergoing thoracic Surgery including surgical management where appropriate. Evaluate and manage a traumatized patient including surgical management where appropriate Evaluate and manage uncomplicated surgical aspects of a patient with aortovascular disease, including operative	10- Risk assessment in cardiothoracic surgery.

		<p>management where appropriate.</p> <p>Evaluate and manage a patient with both uncomplicated and complicated heart valve disease, including operative management.</p> <p>Evaluate and manage all the surgical aspects of a patient with ischaemic heart disease including the complications of ischaemic heart disease.</p> <p>Evaluate and manage all the surgical aspects of uncomplicated congenital heart diseases.</p>	
<p>Cardiac surgery</p> <p>Thoracic surgery</p>	C1-3	<p>Evaluate and manage a patient undergoing thoracic Surgery including surgical management where appropriate.</p> <p>Evaluate and manage a traumatized patient including surgical management where appropriate</p> <p>Evaluate and manage uncomplicated surgical aspects of a patient with aortovascular disease, including operative management where appropriate.</p> <p>Evaluate and manage a patient with both uncomplicated and complicated heart valve disease, including operative management.</p> <p>Evaluate and manage all the surgical aspects of a patient with ischaemic heart disease including the complications of ischaemic heart disease.</p> <p>Evaluate and manage all the surgical aspects of uncomplicated congenital heart diseases.</p>	<p>11- Planning for improvement of professional performance in the field of cardiothoracic surgery. Fellows are expected to develop skills and habits to be able to meet the following goals. (1) identify strengths, deficiencies, and limits in one's knowledge and expertise; (2) set learning and improvement goals; (3) identify and perform appropriate learning activities; (4) systematically analyze practice using quality improvement methods, and implement changes with the goal of practice improvement; (5) Incorporate formative evaluation feedback into daily practice; (6) locate, appraise, and assimilate evidence from scientific studies related to their patients' health problems; (7) use information technology to optimize learning; and participate in the education of patients, families, students, residents and other health professionals.</p>
<p>Cardiac surgery</p> <p>Thoracic surgery</p>	B1-4,C1-3	<p>Diagnose congenital heart diseases.</p> <p>Diagnose adult cardiac diseases.</p> <p>Diagnose thoracic diseases</p> <p>Interpret various investigational and radiological tools to confirm diagnosis.</p> <p>Analyze Case presentation including history taking, clinical examination, investigations&amp; radiology needed and finally differential diagnosis of the case</p> <p>Evaluate and manage a patient undergoing thoracic Surgery including surgical management where appropriate.</p> <p>Evaluate and manage a traumatized patient including surgical management where appropriate</p> <p>Evaluate and manage uncomplicated surgical aspects of a patient with aortovascular disease, including operative management where appropriate.</p> <p>Evaluate and manage a patient with both uncomplicated and complicated heart valve disease, including operative management.</p> <p>Evaluate and manage all the surgical aspects of a patient with ischaemic heart disease including</p>	<p>12- Decision making skill.</p>

		the complications of ischaemic heart disease. Evaluate and manage all the surgical aspects of uncomplicated congenital heart diseases.	
Thesis	-----	-----	13- Development, innovation and medical breakthrough.
Cardiac surgery Thoracic surgery	D1,2	Create effective doctor/patient communication. Make clinical decisions and judgments based upon sound evidence for the benefit of individuals and the population served. Develop and deliver a teaching module or unit and supporting lecture notes for an undergraduate or peer teaching session. Supervise and guide learners (trainees) in a work setting. Be an effective member in a team work.	14- Safety culture of medical practise.

### ج - المهارات العملية:

المقررات التي تحقق المعايير الأكاديمية للبرامج	مخرجات التعلم المستهدفة ILOs	(ARS) Benchmark المعايير الأكاديمية لقسم جراحة القلب والصدر	(NARS) المعايير القومية الأكاديمية القياسية العامة لبرامج قطاع الدراسات العليا (درجة الدكتوراة في جراحة القلب والصدر)
Cardiac surgery Thoracic surgery	C1-3	Evaluate and manage a patient undergoing thoracic Surgery including surgical management where appropriate. Evaluate and manage a traumatized patient including surgical management where appropriate Evaluate and manage uncomplicated surgical aspects of a patient with aortovascular disease, including operative management where appropriate. Evaluate and manage a patient with both uncomplicated and complicated heart valve disease, including operative management. Evaluate and manage all the surgical aspects of a patient with ischaemic heart disease including the complications of ischaemic heart disease. Evaluate and manage all the surgical aspects of uncomplicated congenital heart diseases	15- Professionalism and up to date practise. Providing patient care that is compassionate, appropriate, & effective for the treatment of health problems and the promotion of health. In this context; Fellows must demonstrate a commitment to carrying out professional responsibilities & an adherence to ethical principles. Fellows are expected to demonstrate: (1) compassion, integrity, and respect for others; (2) responsiveness to patient needs that supersedes self-interest; (3) respect for patient privacy and autonomy; (4) accountability to patients, society and the profession; and,(5) sensitivity and responsiveness to a diverse patient population, including but not limited to diversity in gender, age, culture, race, religion, disabilities, and sexual orientation.
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			learning.
Thesis	-----	-----	18- Effective use of IT and healthcare information system in medical practise and patient medical records to optimize learning; and participate in the education of patients, families, students, residents and other health professionals
Cardiac surgery Thoracic surgery	D1,2	Create effective doctor/patient communication. Make clinical decisions and judgments based upon sound evidence for the benefit of individuals and the population served. Develop and deliver a teaching module or unit and supporting lecture notes for an undergraduate or peer teaching session. Supervise and guide learners (trainees) in a work setting. Be an effective member in a team work.	19- Planning for improvement of professional performance in the field of cardiothoracic surgery. Fellows are expected to develop skills and habits to be able to meet the following goals: (1) identify strengths, deficiencies, and limits in one's knowledge and expertise; (2) set learning and improvement goals; (3) identify and perform appropriate learning activities; (4) systematically analyze practice using quality improvement methods, and implement changes with the goal of practice improvement; (5) incorporate formative evaluation feedback into daily practice; (6) locate, appraise, and assimilate evidence from scientific studies related to their patients' health problems; (7) use information technology to optimize learning; and participate in the education of patients, families, students, residents and other health professionals

د- مهارات الاتصال:

المقررات التي تحقق المعايير الأكاديمية للبرامج	مخرجات التعلم المستهدفة ILOs	(ARS) Benchmark المعايير الأكاديمية لقسم جراحة القلب والصدر	(NARS) المعايير القومية الأكاديمية القياسية العامة لبرامج قطاع الدراسات العليا (درجة الدكتوراة في جراحة القلب والصدر)
Cardiac surgery Thoracic surgery	D1-2	Create effective doctor/patient communication. Develop and deliver a teaching module or unit and supporting lecture notes for an undergraduate or peer teaching session. Supervise and guide learners (trainees) in a work setting. Be an effective member in a team work.	20- Interpersonal and communication skills that result in the effective exchange of information and collaboration with patients, their families, and other health professionals
logbook	-----	Develop and deliver a teaching module or unit and supporting lecture notes for an undergraduate or peer teaching session. Supervise and guide learners (trainees) in a work setting. Be an effective member in a team work.	21- Teaching and evaluation skills as senior staff.
Thesis	-----	Be an effective member in a team work. Demonstrate a rigorous approach	22- Self-appraisal and life-long learning.

		to research	
Logbook	-----	Develop and deliver a teaching module or unit and supporting lecture notes for an undergraduate or peer teaching session.	23- Accessibility to specialty-specific and other appropriate reference material in print or electronic format. Electronic medical literature databases with search capabilities.
logbook	D1,2	Develop and deliver a teaching module or unit and supporting lecture notes for an undergraduate or peer teaching session. Supervise and guide learners (trainees) in a work setting. Be an effective member in a team work.	24- Teamwork/leadership.
logbook	D1,2	Develop and deliver a teaching module or unit and supporting lecture notes for an undergraduate or peer teaching session. Supervise and guide learners (trainees) in a work setting. Be an effective member in a team work.	25- Time management and meeting organization