Course SPECIFICATION

Faculty of Medicine-Mansoura University

Vascular surgery MD

(A) Administrative information

(1) Programme offering the course:	Vascular surgery
(2) Department offering the programme:	Vascular surgery Department
(3) Head of the programme:	Prof. Hesham Ali Sharaf El-Din
(4) **Coordinator**	Dr. Ahmed Magdy Hamouda
(5) External Supervisor	Prof. Mostafa Soliman Abd Albary
(6) Date of last approval of programme specification by Faculty council	July, 2016
(7) Course code:	VSUR 620, VSUR 620 Ta, VSUR 620 Tb, VSUR 620 Tc, VSUR 620 Td, VSUR 620 SGS, VSUR 620 SCS, VSUR 620 VSP, VSUR 620 VSC
(8) Credit hours	55 hours
(9) Total teaching hours:	360 theoretical hours + 465 clinical

(B) Professional information:

(1) Aim of the course:

The aim of this program is to provide an organized and comprehensive postgraduate education and training course in vascular surgery, to help graduate a capable vascular surgeon, a thoughtful researcher and an educator, equipped with the appropriate knowledge, skills and attitudes necessary for a highly qualified safe academic surgeon.

(2) Intended Learning Outcomes (ILOs):

Intended learning outcomes (ILOs); Are four main categories: knowledge & understanding to be gained, intellectual qualities, professional/practical and transferable skills.

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

A- 'Knowledge and Understanding

a1-Explaintheanatomicaland pathological processes underlying common vascular diseases and conditions

a2-Explain the anatomical basis of vascular conditions, diseases and interventions

a3-Describe the embryological basis of common congenital vascular diseases and conditions

a4-Correlate common surgical& vascular infections with the causative pathogens

a5-Describe the presentations of common vascular diseases

a6-Define the relevant investigations required to reach an accurate diagnosis

a7-Explain the medical treatment of vascular patients, its indications, contraindications, side effects, and mode of administration

a8- Describe conservative management of vascular conditions, its indications, contraindications, and modalities

a9-Explain the principles of operative surgery & endovascular surgery

a10-Describe the appropriate technique and steps of common vascular & endovascular procedures

a11- Outline the principles of advanced and complex operations of vascular & endovascular procedures

a12- Outline the importance of patient education in vascular surgery

2- Intellectual activities (B)

The Postgraduate Degree provides opportunities for candidates to achieve and demonstrate the following intellectual qualities:

b1- Classify vascular diseases and conditions

b2 – Differentiate vascular diseases and conditions from each other

b3 - Select appropriate laboratory and radiological investigations for each vascular condition

b4 - Interpret the results of laboratory and radiological investigations

b5- Select the proper line of treatment

b6- Demonstrates the ability to solve common vascular problems

C- Professional/practical skills

The Postgraduate Degree provides opportunities for candidates to demonstrate the following professional/practical skills:

C1- Examine different vascular systems of the body, including the arterial, venous, lymphatics, and extremities as well as different swellings &malformations.

c2- Detect manifest clinical abnormalities

c3- Construct a plan of management for a given clinical situation

c4- Independently perform common vascular & endovascular Surgical Procedures with adequate proficiency

c5- preparethe patient as regards the postoperative management and complications

c6-Prepare the patient for vascular & endovascular procedures

c7- Consult the patient as regards the surgical & endovascular options and outcome

c8- Assist with efficiency and recognize challenges and difficulties during major vascular & endovascular procedures

D- Communication & Transferable skills

The Postgraduate Degree provides the opportunity to demonstrate the following transferable skills:

d1- Apply sound communication skills in interviewing patients and their relatives

d2- Apply team working skills in working with peers

d3- communicate and cooperate efficiently and professionally with paramedical personnel

d4- Maintain honesty and integrity in all interactions with lecturers, seniors, colleagues, patients and administrative task.

d5- Be responsible towards oneself and others in the workplace and in the community at large

d6- Maintain a professional image concerning behavior, dress and speech

A) Course content:

and part MD (VSUR 620, VSUR 620VSP, VSUR 620 ORs)

Consists of:

Main educational course divided as

- *General and Basic knowledge of vascular surgery*
- *Arterial diseases management*
- *Venous and lymphatics system management*
- *Endovascular surgery*

All of these courses are educated as lectures of **24 hours total** credit hours combined **(or 6 Hours each)**. And **13 hours** clinical or operative training combined **(or 3 Hours each)**.

2 Hours are dedicated for attending seminars or conferences inside or outside Egypt.

Thesis which require a total of **15 credit hours.**

With a total of **60 Credit hours** for the whole course.

A) General and Basic knowledge of vascular surgery: (VSUR 620 Ga)

Credit Hours: 9
Lectures: 6 credit hour (90 actual hours)
Clinical Practice: 1 credit hours (30 actual hours)
Operative: 2credit hours (60 actual hours)

Topics	No. of hours		
	L	C	OR
OPEN VASCULAR SURGERY: BASIC CONSIDERATIONS			
1. Choice of Procedure and Technique	2		
2. Anatomy of Commonly Exposed Arteries	2	4	2
3. Basic Vascular Surgical Techniques	2		2
4. Techniques for Thromboembolectomy of Native Arteries and Bypass Grafts	2		2
5. Endarterectomy	2		2
6. Vascular Conduits	2		
7. The Autogenous Vein	2		

8. The Modified Biograft & Prosthetic Grafts	2		
MANAGEMENT OF CHRONIC ISCHEMIA OF THE LOWER EXTREMITIES			
9. The Chronically Ischemic Leg	4		
10. Natural History and Nonoperative Treatment of Chronic Lower Extremity	4		
11. Evaluation of the Patient with Chronic Lower Extremity Ischemia	4		
12. Direct Reconstruction for Aortoiliac Occlusive Disease	4		
13. Extra-anatomic Bypass	4	4	
14. Infrainguinal Bypass	2		
15. Profundaplasty	2		
16. Secondary Arterial Reconstructions in the Lower Extremity	2	8	
17. Lumbar Sympathectomy: Indications and Technique.	2		2
18. Nonatheromatous Causes of Popliteal Artery Disease	2		2
19. Management of Foot Ulcers in Diabetes Mellitus	2		10
20. Vasculogenic Erectile Dysfunction	4		2
			4
ACUTE LIMB ISCHEMIA			10
21. Acute Limb Ischemia	2		
22. Arterial Thromboembolism	2		2
23. Atheromatous Embolization	2		
NEUROVASCULAR CONDITIONS INVOLVING THE UPPER EXTREMITY			10
24. Evaluation of Upper Extremity Ischemia	2		
25 . Brachiocephalic Vessel Reconstruction	2		
26. Upper Extremity Revascularization	2		
27. Raynaud's Syndrome: Vasospastic and Occlusive Arterial Disease Involving the Distal Upper Extremity		8	10
28. Thoracic Outlet Syndrome	8		
29. Arterial Complications of Thoracic Outlet Compression	8	4	
30. Upper Extremity Sympathectomy	8		
	8	2	
IMAGING OF THE ARTERIAL SYSTEM			
a. Duplex arterial scaning	8		
b. Arteriography	8		
c. CTA	8		
d. MRA	8		
Total	90hrs	30hrs	60hrs

3.c- References:

3.c.1: Text books:

- Rutherford *Vascular Surgery.*

- Wesley Moore's textbook on vascular surgery.
- ***Jamieson*** and ***Ruckley***, Surgical management of vascular disease.

3.c.2: Websites:

- Journal of vascular surgery.
- European journal of vascular surgery
- International angiology
- Annals of Vascular surgery

3.c.3: Recommended books

- Vascular and Endovascular Surgery: A Comprehensive Reviewby Wesley Moore
- Comprehensive Vascular and Endovascular Surgery: by John W. Hallett Jr.

4) Vascular Arterial Course specifications ([illegible]

Title: Vascular Arterial Course
Credit Hours: 10
Lectures: 6 credit hour (90 actual hours)
Clinical Practice: 2 credit hours (30 actual hours)
Operative: 2 credit hours (120 actual hours)

Topics	No. of hours		
	L	C	OR
ARTERIAL ANEURYSMS			
31. Abdominal Aortic and Iliac Aneurysms	2	2	5
32. Ruptured Abdominal Aortic Aneurysms	2	2	5
33. Thoracoabdominal Aortic Aneurysm	2	2	5
34. Aortic Dissection: Perspectives for the	2	2	5
Vascular/Endovascular Surgeon	2	2	5
35. Lower Extremity Aneurysms	2		
36. Upper Extremity Aneurysms	2		5
37. Splanchnic Artery Aneurysms	2		5
38. Infected Aneurysms	2		
THE MANAGEMENT OF SPLANCHNIC			5
VASCULAR LESIONS AND DISORDERS			
39. Physiology and Diagnosis of Splanchnic Arterial	2		
Occlusion			
40. Treatment of Acute Intestinal Ischemia Caused by	2		
Arterial Occlusions			2
41. Diagnosis and Treatment of Nonocclusive	2		
Mesenteric Ischemia	2		
42. Chronic Mesenteric Ischemia			
43. Intestinal Ischemia Caused by Venous Thrombosis	2		
44. Portal Hypertension: Surgical Management of Its			
Complications	2		
THE MANAGEMENT OF RENOVASCULAR			2
DISORDERS			
45. Renal Artery Imaging and Physiologic Testing	2		
46. Renal Artery Fibrodysplasia and Renovascular			
Hypertension	2		

47. Atherosclerotic Renovascular Disease and Ischemic Nephropathy	2		
48. Endovascular Treatment of Renovascular Disease	2		
49. Open Surgical Repair of Renovascular Disease	2		
50. Renal Artery Aneurysms and Arteriovenous Fistulae	2		4 1
51. Acute Renovascular Occlusive Events	2		1
MANAGEMENT OF EXTRACRANIAL CEREBROVASCULAR DISEASE			
52. Fundamental Considerations in Cerebrovascular Disease	2		
53. Diagnostic Evaluation and Medical Management of Patients with Ischemic Cerebrovascular Disease	2		
54. Anatomy and Angiographic Diagnosis of Extracranial and Intracranial Vascular Disease	2		
55. The Role of Noninvasive Studies in the Diagnosis and Management of Cerebrovascular Disease	2		
56. Indications, Surgical Technique, and Results for Repair of Extracranial Occlusive Lesions	2		
57. Vertebrobasilar Ischemia: Indications, Techniques, and Results of Surgical Repair	2		4
58. Aneurysms of the Extracranial Carotid Artery	2		
59. Complications Following Carotid Endarterectomy and Perioperative Management	2		4
VASCULAR TRAUMA	2		
60.Epidemiology and Natural History of Vascular Trauma			2
61.Carotid and Vertebral Artery Injuries	2		5
62.Thoracic Vascular Trauma	2	2	
63.Abdominal Vascular Injuries	2	2	5
64.Vascular Injuries of the Extremities	2	2	2
65.Compartment Syndrome: Pathophysiology, Recognition, and Management	2	2	6
66.Causalgia and Post-traumatic Pain Syndromes	2	1	15
	2		2
EXTREMITY AMPUTATION FOR VASCULAR DISEASE			
67.Lower Extremity Amputation: Indications, Patient Evaluation, and Level Determination	2	2	5
68.Lower Extremity Amputation: Technique and Perioperative Care	2	2	5
69.Lower Extremity Amputation: Perioperative Complications	2	2	5
70.Functional Outcome and Natural History of Major Lower Extremity Amputation	2	2	5
71.Upper Extremity Amputation	2	2	5
Total	90hrs	30hrs	120hrs

3.c- References:

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- Rutherford *Vascular Surgery.*
- Wesley Moore's textbook on vascular surgery.
- ***Jamieson*** and***Ruckley,*** Surgical management of vascular disease.

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3.c.3: Recommended books

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- Comprehensive Vascular and Endovascular Surgery: by John W. Hallett Jr.

Credit Hours: 9
Lectures: 6 credit hour (90 actual hours)
Clinical Practice: 2 credit hours (60 actual hours)
Operative: 1 credit hours (100 actual hours)

Topics	No. of hours		
	L	C	OR
ARTERIOVENOUS FISTULAS, VASCULAR MALFORMATIONS, AND VASCULAR TUMORS			
1. Diagnostic Evaluation of Arteriovenous Fistulas and Vascular Anomalies	4	8	
2. Arteriovenous Fistulas of the Aorta and Its Major Branches	4		
3. Traumatic Arteriovenous Fistulas	4		
4. Vascular Tumors and Malformations in Childhood	4		
5. Surgical Management of Vascular Malformations	4	2	
6. Medical Management of Vascular Malformations	4		
7. Primary Tumors of Major Blood Vessels: Diagnosis and Management		2	2
ARTERIOVENOUS HEMODIALYSIS ACCESS			
8. Strategies of Arteriovenous Dialysis Access	4		
9. Venous Transpositions in the Creation of Arteriovenous Access	4	20	25
10. Management of Thrombosed Dialysis Access	4		10
11. Nonthrombotic Complications of Arteriovenous Access for Hemodialysis	4	2	5
THE MANAGEMENT OF VENOUS DISORDERS			
12. Pathophysiology and Natural History of Acute Deep Venous Thrombosis	4		
13. Clinical Evaluation of the Patient with Deep Venous Thrombosis	4		
14. Diagnostic Evaluation of the Patient with Deep Venous Thrombosis	4		
15. Prevention and Medical Treatment of Acute Deep Venous Thrombosis	4	6	
16. Surgical Thrombectomy for Acute Deep Venous Thrombosis	4		
17. Vena Caval Interruption Procedures	4		

18. Subclavian-Axillary Vein Thrombosis	4		4
19.Superficial Thrombophlebitis: Diagnosis and Management	4		
20.The Pathophysiology of Chronic Venous Insufficiency			4
21.Classification and Clinical and Diagnostic Evaluation of Patient with Chronic Venous Disorders	4		10
22.Nonoperative Treatment of Chronic Venous Insufficiency	4		
23.Varicose Veins: Treatment by Intervention Including Sclerotherapy	4	4	
24.Management of Perforator Vein Incompetence	4		
25.The Surgical Treatment of Deep Venous Valvular Incompetence			
26.Surgical Treatment of Chronic Occlusions of the Iliac Veins and the Inferior Vena Cava	4	10	
27.Evaluation and Management of Malignant Tumors of the Inferior Vena Cava	4		
28.Surgical Treatment of Superior Vena Cava Syndrome	4	4	10
THE MANAGEMENT OF LYMPHATIC DISORDERS			10
1.Lymph Circulatory Dynamics	4		
2. Lymphangiogenesis	4		
3.Pathophysiology of the Lymphovascular System	4		2
4.Clinical Diagnosis and Evaluation of Lymphedema	4		8
5.Nonoperative Management of Chronic Lymphedema	4		
6.Surgical Treatment of Chronic Lymphedema and Primary Chylous Disorders	4		
IMAGING OF THE VENOUS SYSTEM			
a. Duplex venous scaning	4		
b. VEnography	3		10
c. CTV			
d. MRV			
IMAGING OF THE LYMPHATIC SYSTEM			
a. MRI	4		
b. Lymph cyntgraphy	4		
Total	90hrs	60hr	100hrs

3.c- References:

3.c.1: Text books:

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- Wesley Moore's textbook on vascular surgery.
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Credit Hours: 9
Lectures: 6 credit hour (90 actual hours)
Clinical Practice: 1 credit hours (30 actual hours)
Operative: 2 credit hours (120 actual hours)

Topics	No. of hours		
	L	C	OR
Arterial:			
1. Fundamental Techniques in Endovascular Surgery	10		
2. Iliac and Femoral Angioplasty	8	5	30
3. Tibial Angioplasty	8	5	20
4.Carotid Angioplasty		5	10
5. Basic Techniques of Endovascular Aneurysm Repair	8	5	15
6. Intra-arterial Catheter-Directed Thrombolysis	8		5
7. Complications of Endovascular Procedures	6		
8. Endovascular repair of AAA	6	2	5
Venous:			
8. IVC Filter insertion	6	2	5
9. Management of arterio-venous malformation	6	4	15
10. Endovascular management of venous hypertention	8	1	5
11.Endovascular Treatment of Chronic Occlusions of the Iliac Veins and the Inferior Vena Cava	8		
12.Endovascular Treatment of Vena Caval Occlusions	8	1	5
		1	5
Total	90hrs	30h	120hrs

3.c- References:

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- Wesley Moore's textbook on vascular surgery.
- ***Jamieson*** and ***Ruckley***, Surgical management of vascular disease.

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b) Elective Courses

Title: Medical statistics course
Credit Hours: 1 hour
Lecture: 1h/week **Total:** 30 hours

General Surgery Course (Elective course) VSUR 620 x5

Topics	L	Op
1. Abdominal Incision & Exploration	4	10
2. Abdominal trauma & acute abdomen	4	10
3. Abdominal compartmental syndrome	4	5
4. Blood transfusion and blood substitutes	4	
5. Electrolytes implance	4	
6. Surgical infection	4	
7. Surgical Wound Closure	4	
8. Organ transplantation	4	5
Total	32	30

b) Elective courses

Title: Medical statistics course
Credit Hours: 1 hour
Lecture: 1h/week **Total:** 30 hours

Cardiothoracic Surgery Course (Elective course) VSUR 620 x5

Topics	L	Op
1. Thoracotomy	4	4
2. Exploration of great vessels	10	6
3. Dissecting aortic aneurysm & Thoraco-abdominal aortic aneurysm	4	6
4. Thoraco-abdominal exploration	4	6

5. Different sternotomy approaches	4	4
6. Chest trauma Insertion of intercostals tubes	4	4
Total	30	30

Teaching methods

4.1:Lecture

4.2:Practical class

4.3:Small group discussion

Assessment methods

5.1:Written Examination for assessment of knowledge ILOs and intellectual

5.2: Oral examinationfor assessment ofknowledge and intellectual ILOs.

5.3:MCQ exam for assessment on knowledge and intellectual skills

5.4 Clinical exam for assessment of practical skills, clinical communication skills

5.5 Log book for activities for assessment of: Practical skills which are acquired throughattending various conferences, thesis discussions, seminars, workshops, scientific lectures as well as self-learning.

5.6: Seminars: The candidate should prepare and present at least one seminar in the weekly Journal club in atopic related to the course and determined by the supervisors in front of the department staff (without marks).

Assessment schedule:

Assessment 1:written exam After 36 months from the start of the job.

Assessment 2:Oral exam After 36 months from the start of the job.

Assessment 3 :MCQ at the end of the semester (15^{th} week)

Assessment 4 :Practical tests After 36 months from the start of the job.

Assessment 5:The candidate should prepare and present at least one seminar in atopic related to the course and determined by the supervisors in front of the department staff (without marks).

Percentage of each Assessment to the total mark:

2nd Part MD assessment:

Written exam: 252 Marks
MCQ: 63 Marks
Structured Oral exam: 100 Marks
OSCE exam: 100 Marks
Operative exam: 100 Marks

(6) Facilities and resources mandatory for course completion:

A. **Lecture hall:** In the Auditorium of Surgery department and lecture hall of the outpatient clinic (Jehan Street). Each hall is equipped with white board, overhead projector, computer, LCD projector, laser pointers, remote slide advancer, DVD player and wireless phones. It is air conditioned.

Library:

The library is located on the 4th floor of Faculty of medicine, Mansoura University

Head of the department:
Name: Hesham Ali Sharaf El Din