

Curriculum



Diploma in Cardiology (D Card)

**Bangabandhu Sheikh Mujib Medical University
Shahbagh, Dhaka.**

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- 1. Name of the course** : **Diploma in
Cardiology (D Card)**
- 2. Duration** : Two academic years
- 3. Date of commencement** : July of each year
- 4. Aims and objectives** :

a. General

To develop a medical expert who shall acquire specialized knowledge, skill and expertise in the field of Cardiology and maintain medical ethics and professionalism.

b. Specific

The academic and training process will go side by side with aim to produce specialists in the field of cardiology who:

- shall be able to assess the patients seeking cardiology treatment by obtaining patient's history, eliciting physical findings, formulating provisional diagnosis, deciding

whether patient needs hospitalization or not.

-shall acquire knowledge, competency and expertise in cardiology practical skill and invasive techniques during training periods and should be able to manage all types of emergencies and routine problems.

- shall be aware of one's professional limitations and be able to refer to appropriate centers/specialist when required.

5. Eligibility for admission:

- a. MBBS or its equivalent degree recognized by BMDC.
- b. Minimum two years after passing MBBS or its equivalent degree.

6. Admission Test:

Entrance exam will be MCQ type, containing 60% of questions from basic subjects related to the practice of Cardiology and 40% from Cardiology.

7. Course Content:

Paper - I – Basic science (customized)

Group A: Anatomy and Pathology

Group B: Physiology, Biochemistry & Pharmacology

Paper – II – Internal Medicine

Group A: Infectious disease, Nutrition, GI diseases, liver disease, hematological disease, rheumatology, renal disease

Group B: Respiratory disease, intensive care medicine, endocrine disease & diabetes, neurology &

ophthalmology, psychological
medicine, dermatology

Paper – III – Cardiology

Group A: Prevention of CVD,
hypertension, diabetic heart disease,
IHD, myocardial disease, pericardial
disease, tumors of the heart,
congenital heart disease, pregnancy &
heart disease, valvular heart disease,
infective endocarditis

Group B: heart failure, pulmonary
hypertension, cardiac rehabilitation,
arrhythmias, syncope, sudden cardiac
death, diseases of the aorta,
peripheral arterial disease, venous
thromboembolism, cardiac consult,
cor pulmonale

8. Training rotations:**Cardiology:**

6 + 12 months, Internal Medicine 6 months
= Total 24 months.

The D-CARD will be a course of 2 Years in duration. In the 1st 6 months, students will remain under supervision of Cardiology Department. After this 6 month period they will be placed in Internal Medicine for 6 months. At the end of this placement, the students will return back to Cardiology Department and will remain in the department for 1 year for teaching and training in Cardiology. At the end of the 2 year course, the students will appear in the final exam consisting Paper 1 (Basic Science), Paper-II (Internal Medicine) and paper-III (Cardiology).

9. **Summative Examination:**

The summative or exit or final examination will be twice a year, in July and January, the date determined by the university

i) Written tests: 3 papers

Written questions: In each paper there will be 4 questions. In each of **Group A** & **Group B** there will be 1 Structured Essay Question & 5 SAQs

ii) Clinical: Clinical examination will be held on the same day.

There will be 1 long case & minimum 3 short cases. In long case 30 minutes will be for history taking & examination & 15 minutes for crossing by 2 examiners. 15 minutes will be allotted for short cases. 2 examiners will assess the candidate in long case while 2 other examiners will assess the short cases.

Marks: Long case-50 and short cases-50:Total 100

iii) Practical: OSCE= 10 Stationsx10=100 marks

iv) Oral: There will be 2 boards for viva. In each board there will be two examiners. 15 minutes for each board will be equally divided between 2 examiners. 50% examiners will be external out of total 4 examiners; one of them from Internal Medicine

To pass, the candidate have to secure at least 60%marks, in each of the components of written (3 paper combined), clinical and practical (OSCE) & oral examination

Nature of examination	No. of papers and topics	Marks allotted	Pass Marks
A. Written	Paper I Basic science	100	60%
	Paper II Internal Medicine	100	
	Paper III Cardiology	100	
B. Clinical-Practical	Clinical	100	60%
	OSCE	100	
C. Oral		100	60%
	Total	600	360

10. Formative Assessment:

There will be 3 formative assessments after each 6 months of training by the department/supervisor. 3 satisfactory certificates along with other requirements must be fulfilled before appearing in the final exit examination. The last 6 month will end with summative examination.

11. Core Clinical Syllabus:

Topics to be taught in 1st 6 months:

(Paper-1)

Gross anatomy of heart, great vessels, lungs, kidneys and brain

Gross anatomy of vascular tree: Great vessels of heart and coronary artery, venous drainage of heart, pulmonary vasculature

Vascular supply and venous drainage of kidney, brain and 4 limbs

Applied Basic science related to cardiology:

1. Hypertension:

- i. Pathophysiology of hypertension.
- ii. Physiology of BP regulation.
- iii. Aetiology and pathogenesis of secondary hypertension.
- iv. Target organ involvement in hypertension

2. Coronary Artery disease:

Anatomy of coronary artery and its developmental anomalies pathophy-siology of stable angina pectoris and acute coronary syndrome Lipids in health and disease

3. Congenital heart disease:

Development of heart and great vessels
Developmental anomaly of heart and great vessels
Pathophysiology of cyanosis (central and peripheral)

4. Valvular heart disease:

Structure and function of heart valves
Pathophysiology of valvular stenosis and regurgitation
Physiology of coagulation
Lab assessment of coagulation disorder

5. Infection of heart and pericardium:

Pathophysiology of infective endocarditis

Pericarditis aetiopathology

6. Myocarditis and cardiomyopathy:

Physiology of normal myocardium

Altered myocardial function in disease

7. Pulmonary Artery disease:

Pulmonary hypertension:

Normal Pulmonary Pressure

Pathophysiology of Pulmonary hypertension

Pulmonary embolism (PE) and infarction

Risk factor and pathogenesis of PE

8. Arrhythmia:

Anatomy and Physiology of junctional tissue

Pathogenesis of arrhythmia

9. Heart failure:

Physiology of heart including Cardiac cycle,

Starling law in health and disease

Alteration of myocardial function in diseases

leading to heart failure

Pathophysiology of heart failure

10. Pharmacology of drugs used in CVS

Topics to be taught in Internal Medicine rotation (Paper-II)

Infection:

1. Respiratory tract infection
Pneumonia (community acquired and atypical), lung abscess
2. Urinary tract infection broad based
3. Meningitis and encephalitis
4. Tropical infection, malaria, kala azar.
Filariasis
5. G I infection: diarrhoea and dysentery
6. STD: Syphilis, HIV

Nutrition:

1. Vitamin deficiency and its effects on heart.
2. Obesity
3. Alcohol and its effects

G I diseases:

1. Peptic ulcer disease & GERD
2. Inflammatory bowel disease
3. G I hemorrhage

Liver disease:

1. Viral hepatitis
2. Chronic liver disease
3. Acute pancreatitis

Hematological disease:

1. Anemia
2. Polycythaemia
3. Thrombotic disorders

Rheumatology:

1. Autoimmune diseases affecting the heart
2. Spondyloarthropathies
3. Vasculitis

Renal disease

1. Glomerulonephritis
2. Chronic renal failure
3. Poly cystic kidney disease
4. Acute renal feature
5. Electrolyte imbalance
6. Acid base disorders

Respiratory disease

1. T B
2. Interstitial lung disease
3. Asthma & COPD

Intensive care medicine

1. Shock
2. Respiratory failure
3. Brain death
4. ARDS

Endocrine disease & diabetes

1. Acromegaly
2. Thyroid disorder
3. Addison disease & Cushing syndrome

4. Diabetes mellitus
5. Complications of Diabetes
6. Diabetes and heart disease
7. Dyslipidemia

Neurology & ophthalmology

1. Stroke & CVD
2. Muscular dystrophy
3. Diabetes and hypertensive retinopathy
4. Optic atrophy
5. Peripheral neuropathy

Psychological medicine

1. Depressive disorder
2. Anxiety disorder
3. Dementia

Dermatology

1. Leg ulcer
2. Erythema nodosum, Erythema multiforme, Erythema marginatum

**Topics to be taught in Cardiology Rotation
(Paper-III)**

1. Morphology of ECG: ECG normal variant and abnormal ECG in different disease states
2. Cardiac Ultrasound: 2D, M-mode & Doppler, transoesophageal, DSE
3. Nuclear Medicine: myocardial perfusion imaging
4. Invasive imaging & Haemodynamics: right and left heart catheterization, coronary and peripheral angiography
5. Genetics of Cardiovascular disease (CVD)
6. Clinical pharmacology of cardiovascular drugs: practical implication
7. Prevention of CVD: Risk factor detection & modification.
8. Hypertension
9. Diabetes & heart disease

10. Acute coronary syndrome: Diagnosis & Risk assessment.
11. Management of ACS
12. Chronic ischemic heart disease and its management
13. Myocardial Diseases
14. Pericardial Diseases
15. Tumors of the heart
16. Congenital heart disease: cyanotic & acyanotic: presentation & management
17. Pregnancy & heart disease
18. Valvular heart disease: Rheumatic & nonrheumatic
19. Infective Endocarditis.
20. Heart failure: epidemiology & diagnosis.
21. Management of acute & chronic heart failure
22. Pulmonary Hypertension

23. Cardiac Rehabilitation
24. Bradycardia
25. Supraventricular Tachycardia
26. Atrial fibrillation: Epidemiology, Pathogenesis & Diagnosis
27. Atrial fibrillation : Treatment
28. Syncope
29. Ventricular Tachycardia
30. Sudden cardiac death & resuscitation.
31. Disease of the aorta
32. Peripheral Arterial Disease
33. Venous thromboembolism
34. Cardiac Consult: Evaluation of patients with heart disease undergoing noncardiac surgery
35. Cor pulmonale

11. Procedural skill:

A trainee has to do the following procedures in different level of competences as per logbook instruction during his training period

1. ECG
2. ETT
3. Holter
4. ABP monitoring
5. Echo/Doppler
6. DSE
7. MPI
8. Arterial puncture
9. ABG
10. TPM/PPM
11. DC cardioversion
12. CAG/PCI
13. Cardiac cath
14. Pericardiocentesis
15. ICD
16. IABP
17. EP study

12. Writing Case-note:

Each trainee will complete at least 5 longitudinal case studies during their training period. Each case study will contain summary of presentation, principal diagnosis and other diagnoses, each follow up notes, investigations done with their interpretation, brief account of any procedure done. At the end, the trainee will write a discussion with short conclusion. He will submit the case notes in a binding form along with the logbook.

13. Eligibility for appearing in the final exam:

1. 2 year in-course training
2. 3 satisfactory report of formative assessment
3. 70% attendance in schedule lectures and attendance in other academic activities
4. Satisfactory completion of logbook
5. Submission of case notes



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Shahbag, Dhaka**

Diploma trainee's Block progress report

Name of the trainee : Session :
 Name of the course : Reg. No:
 Name of the institute :
 Period of block :

Performance	Poor	Satisfactory	Good	Excellent
Written*				
Clinical- Practical*				
Oral*				
Attendance*				
Attitude				

* Poor: <50%, Satisfactory: ≥50-60%, Good: >60-75%, Excellent : >75%

Note: "Poor" grade in more than two performance during a particular block means deficient training and also cause disqualification for appearing in the final examination unless training in particular block is complete.

Signature:
 Head of the Department
 (Seal)