WOMEN MEDICAL COLLEGE, ABBOTTABAD
Jinnah International Hospital (JIH), Abbottabad
Department of Medical Education | Department of Cardiology

DEPARTMENT OF CARDIOLOGY
JIHA CLINICAL ELECTIVE PROGRAMME

Study Guide

Cardiology Elective — 4-Week Structured Programme

For Students and Faculty

History Taking | Physical Examination | ECG Interpretation

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VISION & MISSION

WMC & JIHA — Vision	WMC & JIHA — Mission
To create ethically strong health care professionals by strengthening academic activities and patient care and to develop State of the Art University.	*To train and develop competent healthcare professionals through an ethical, innovative and culturally appropriate learning experience to cater the health needs of the community.*

LEARNING DOMAINS

Following the KMU IHPER model, all learning objectives are written in three domains:

COGNITIVE	PSYCHOMOTOR	AFFECTIVE
Knowledge & Understanding	*Clinical Skills & Practice*	*Attitude & Professionalism*
Verbs: Define, Describe, Explain, List, Classify, Identify, Differentiate, State, Discuss	*Verbs: Demonstrate, Perform, Examine, Measure, Calculate, Take, Conduct, Apply, Identify*	*Verbs: Appreciate, Counsel, Show, Respect, Accept, Reflect, Demonstrate (attitude)*

PROGRAMME OVERVIEW

Programme	JIH Cardiology Clinical Elective
Duration	4 Weeks (16 Teaching Days)
Teaching Tracks	History Taking | Physical Examination | ECG Interpretation
Assessment	Daily logbook sign-off + Final supervisor evaluation
Attendance	Minimum 90% required for Certificate of Completion

GENERAL LEARNING OBJECTIVES

At the end of the 4-week Cardiology Elective, students will be able to:

A. HISTORY TAKING

1. Take a structured cardiovascular history covering all relevant domains.
2. Elicit and characterise cardinal cardiovascular symptoms.
3. Identify and assess major cardiovascular risk factors.
4. Document and present history findings clearly and concisely.

B. PHYSICAL EXAMINATION

1. Perform a complete and systematic cardiovascular physical examination.
2. Examine peripheral pulses at all standard sites.
3. Measure and interpret blood pressure and assess jugular venous pressure.
4. Perform precordial inspection, palpation, and auscultation.

C. ECG INTERPRETATION

1. Apply a systematic approach to ECG interpretation.
2. Recognise common ECG patterns: AF, hypertrophy, and bundle branch blocks.
3. Identify ECG features of ischaemia, STEMI, and NSTEMI.
4. Produce a structured written ECG interpretation report.

D. PROFESSIONALISM & ATTITUDE

1. Demonstrate punctuality, professional dress, and respectful conduct.
2. Maintain strict patient confidentiality at all times.
3. Show commitment to learning by completing the daily logbook.
4. Appreciate the value of the elective in bridging theory and clinical practice.

WEEK 1 — FOUNDATIONS

Introduction to cardiovascular history taking, physical examination, and ECG

Day 1 Week 1, Day 1

Track	Topic	Learning Objective
History Taking	**Introduction to History Taking**	Define history taking and state its role in cardiovascular diagnosis. Describe the components of a structured cardiovascular history. Demonstrate a professional patient introduction and history opening. Appreciate the importance of empathetic communication with patients.
Physical Examination	**Introduction**	State the four components of physical examination. Describe the sequence and patient positioning for cardiovascular examination. Demonstrate correct patient positioning and adequate exposure. Respect patient dignity and privacy during examination.
ECG Interpretation	**Introduction to ECG**	Identify the 12 standard ECG leads and their anatomical territories. Define the P wave, QRS complex, T wave, and normal interval ranges. Demonstrate correct ECG electrode placement on a patient. Identify common ECG artefacts and assess recording quality.

Day 2 Week 1, Day 2

Track	Topic	Learning Objective
History Taking	**Basics of History Taking — SOCRATES**	List the cardinal cardiovascular symptoms. Explain the SOCRATES framework and its application. Use SOCRATES to take a focused cardiovascular history. Differentiate open-ended from closed-ended questioning.
Physical Examination	**Basics of Examination — Peripheral Signs**	State normal values for heart rate, blood pressure, and respiratory rate. Describe peripheral cardiovascular signs: cyanosis, clubbing, oedema. Examine hands, face, and neck for cardiovascular signs. Correlate peripheral signs with their underlying pathology.
ECG Interpretation	**Basics of ECG — Intervals and Systematic Reading**	State normal ranges for PR interval, QRS duration, and QT interval. Measure ECG intervals on a printed tracing. Describe a systematic ECG reading protocol: rate → rhythm → axis → waveforms → impression.

Day 3 Week 1, Day 3

Track	Topic	Learning Objective
History Taking	**History of Chest Pain**	List the major causes of chest pain. Describe the features of ischaemic chest pain. Take a focused chest pain history identifying red flag features. Differentiate typical from atypical presentations of angina and MI. Appreciate the urgency of life-threatening chest pain.
Physical Examination	**Examination of the Radial Pulse**	Identify the radial pulse location and list five characteristics to assess. Demonstrate correct radial pulse palpation technique. Differentiate regular, irregularly irregular, and regularly irregular pulse. Explain the significance of radio-radial delay.
ECG Interpretation	**Assessment of Heart Rate**	State the 300 large-squares and 1500 small-squares methods of rate calculation. Calculate heart rate from an ECG using both methods. Classify ECG rate as bradycardia, normal, or tachycardia.

Day 4 Week 1, Day 4

Track	Topic	Learning Objective
History Taking	**History of Dyspnoea**	Define dyspnoea and describe the NYHA classification. List cardiovascular causes of dyspnoea. Take a focused dyspnoea history including orthopnoea and PND. Differentiate cardiac from respiratory causes of dyspnoea.
Physical Examination	**Brachial Pulse and Blood Pressure**	Describe the correct technique for manual blood pressure measurement. Demonstrate blood pressure measurement using a sphygmomanometer. Classify blood pressure: normal, pre-hypertension, Stage 1, Stage 2. Assess postural blood pressure and identify orthostatic hypotension.
ECG Interpretation	**Assessment of Rhythm — Part I**	State the criteria for normal sinus rhythm. Determine rhythm regularity by measuring RR intervals. Differentiate sinus tachycardia and sinus bradycardia on ECG.

WEEK 2 — RISK FACTORS & PERIPHERAL EXAMINATION

Cardiovascular risk factor history and peripheral pulse examination

Day 1 Week 2, Day 1

Track	Topic	Learning Objective
History Taking	**History of Hypertension**	Define hypertension and classify its severity. Describe key history components: duration, medications, end-organ damage. Take a targeted history to identify secondary causes of hypertension. Counsel a patient on lifestyle modifications for blood pressure control.
Physical Examination	**Carotid Pulse and JVP**	Describe the normal JVP waveform and state normal JVP height. Demonstrate correct JVP assessment at 45 degrees. Differentiate JVP from the carotid pulse. List causes of a raised JVP.
ECG Interpretation	**Rhythm — Part II (AF and Flutter)**	Describe ECG features of atrial fibrillation. Identify atrial fibrillation on an ECG. Differentiate atrial fibrillation from atrial flutter on ECG. Appreciate the urgency of new-onset atrial fibrillation.

Day 2 Week 2, Day 2

Track	Topic	Learning Objective
History Taking	History of Diabetes Mellitus	State the diagnostic criteria for Type 2 diabetes. Explain how diabetes contributes to cardiovascular risk. Take a cardiovascular-focused history in a diabetic patient. Counsel a diabetic patient on cardiovascular risk reduction.
Physical Examination	Femoral and Popliteal Pulses	Identify the anatomical locations of the femoral and popliteal arteries. Demonstrate palpation of femoral and popliteal pulses. Detect radio-femoral delay and explain its clinical significance. List signs of peripheral arterial disease.
ECG Interpretation	Assessment of Cardiac Axis	Define cardiac axis and state the normal range. Determine cardiac axis from a 12-lead ECG using leads I and aVF. List common causes of left and right axis deviation.

Day 3 Week 2, Day 3

Track	Topic	Learning Objective
History Taking	**History of Smoking**	Explain the pack-year calculation and its role in cardiovascular risk. Conduct a smoking history and calculate pack-years. Counsel a patient on smoking cessation.
Physical Examination	**Posterior Tibial and Dorsalis Pedis Pulses**	Identify the anatomical locations of the posterior tibial and dorsalis pedis arteries. Demonstrate palpation of posterior tibial and dorsalis pedis pulses. Describe the ankle-brachial pressure index and its clinical use.
ECG Interpretation	**Atrial Dilatation — P Wave Changes**	State normal P wave parameters: duration and amplitude. Describe ECG features of P pulmonale and P mitrale. Identify P wave changes on an ECG and correlate with pathology.

Day 4 Week 2, Day 4

Track	Topic	Learning Objective
History Taking	History of Dyslipidaemia	Define dyslipidaemia and state desirable lipid levels. Explain the role of LDL in atherosclerosis. Take a targeted dyslipidaemia history. Counsel a patient on dietary modification and medication adherence.
Physical Examination	Inspection of the Precordium	List visible signs to assess on precordial inspection. Demonstrate correct precordial inspection technique. Identify the significance of a displaced apex beat and parasternal pulsation.
ECG Interpretation	Ventricular Hypertrophy — Voltage Criteria	State the Sokolow-Lyon voltage criteria for LVH and RVH. Apply voltage criteria to identify LVH on an ECG. Differentiate LVH from RVH on ECG.

WEEK 3 — HISTORY COMPLETION & PRECORDIAL EXAMINATION

Completing history tracks and mastering precordial examination and ischaemia recognition

Day 1 Week 3, Day 1

Track	Topic	Learning Objective
History Taking	**Family History**	Describe hereditary cardiovascular conditions requiring family history. Take a three-generation family history for cardiovascular disease. Identify first-degree relatives at risk and explain the need for screening.
Physical Examination	**Palpation of the Precordium**	Identify the normal position of the apex beat. Demonstrate systematic precordial palpation. Differentiate a pressure-overloaded from a volume-overloaded apex beat. Identify a left parasternal heave and its clinical significance.
ECG Interpretation	**Ischaemia — Part I (ST and T Wave Changes)**	Define myocardial ischaemia and state ECG leads per coronary territory. Describe ST depression and T wave inversion as features of ischaemia. Identify ischaemic ECG changes and localise the affected territory.

Day 2 Week 3, Day 2

Track	Topic	Learning Objective
History Taking	**Past Cardiovascular History**	List key past cardiovascular events to enquire about. Take a comprehensive past cardiovascular history including prior investigations and interventions. Correlate past history with current presentation.
Physical Examination	**Auscultation — Part I (Heart Sounds)**	Identify the four auscultation areas and the basis of S1 and S2. Demonstrate auscultation of all four areas using diaphragm and bell. Identify physiological and pathological S2 splitting and added sounds S3 and S4. Appreciate that auscultatory skill develops with sustained practice.
ECG Interpretation	**Assessment of STEMIs**	State the diagnostic ECG criteria for STEMI. Describe the ECG evolution of acute STEMI. Identify STEMI on ECG and determine the affected coronary territory. Appreciate the time-critical urgency of STEMI diagnosis and management.

Day 3 Week 3, Day 3

Track	Topic	Learning Objective
History Taking	**Systemic History**	Describe how systemic diseases affect cardiovascular function. Conduct a systems review to identify cardiovascular comorbidities. Identify cardioactive drugs in the drug history.
Physical Examination	**Auscultation — Part II (Murmurs)**	Define a cardiac murmur and state the Levine grading scale. Demonstrate auscultation for murmurs using dynamic manoeuvres. Differentiate common systolic and diastolic murmurs and their likely valve pathology.
ECG Interpretation	**Assessment of NSTEMIs**	Define NSTEMI and describe its ECG features. Identify NSTEMI features on ECG and document findings. Differentiate NSTEMI from unstable angina.

Day 4 Week 3, Day 4

Track	Topic	Learning Objective
History Taking	**Socioeconomic History**	Describe how socioeconomic factors contribute to cardiovascular risk. Take a social history covering occupation, diet, exercise, and stress. Show sensitivity and a non-judgemental attitude when discussing social circumstances.
Physical Examination	**Peripheral Oedema and Hepatomegaly**	List peripheral signs of right heart failure. Demonstrate examination for pitting oedema and hepatomegaly. Differentiate cardiac oedema from oedema of other causes.
ECG Interpretation	**Ischaemia — Part II (Bundle Branch Blocks)**	Define LBBB and RBBB and state the QRS duration criterion. Identify LBBB and RBBB on ECG using the WiLLiaM and MaRRoW mnemonics. Explain the significance of new LBBB in a patient with chest pain.

WEEK 4 — ASSESSMENT & CONSOLIDATION

Palpitations, complete examinations, ECG quizzes, and open Q&A sessions

Day 1 Week 4, Day 1

Track	Topic	Learning Objective
History Taking	**History of Palpitations**	Define palpitations and list cardiovascular and non-cardiovascular causes. Take a focused palpitation history. Differentiate benign ectopic beats from significant arrhythmia.
Physical Examination	**Complete CVS Examination — Assessment I**	Perform a complete cardiovascular examination under assessment conditions. Correlate all examination findings to form a clinical impression. Demonstrate confidence and professionalism during examination assessment.
ECG Interpretation	**ECG Quiz I — Rate and Rhythm**	Analyse unknown ECG tracings for rate and rhythm. Justify the clinical diagnosis assigned to each ECG. Produce a structured written ECG report for each tracing.

Day 2 Week 4, Day 2

Track	Topic	Learning Objective
History Taking	**History Taking Assessment — Day I**	Perform a complete cardiovascular history under formal assessment. Summarise a cardiovascular history accurately in written format. Accept constructive feedback and commit to improving skills.
Physical Examination	**Complete CVS Examination — Assessment II**	Present cardiovascular examination findings verbally to the supervisor. Differentiate findings of common cardiovascular diagnoses. Accept peer and supervisor feedback and identify areas for improvement.
ECG Interpretation	**ECG Quiz II — Axis and Hypertrophy**	Determine axis and apply voltage criteria to unknown ECG tracings. Correlate axis and hypertrophy findings with clinical pathology. Document a written ECG report for each tracing.

Day 3 Week 4, Day 3

Track	Topic	Learning Objective
History Taking	**Open Q&A — History Taking**	Demonstrate improved history taking incorporating supervisor feedback. Discuss the rationale for each component of the cardiovascular history. Design a brief peer-teaching activity on cardiovascular history taking.
Physical Examination	**Open Q&A — Physical Examination**	Demonstrate any cardiovascular examination component on request. Explain the clinical significance of findings encountered during the elective. Appreciate the value of peer discussion in consolidating clinical skills.
ECG Interpretation	**ECG Quiz III — Ischaemia and Infarction**	Apply STEMI and NSTEMI criteria to unknown ECG tracings. Differentiate anterior, inferior, lateral, and posterior infarction patterns. Write a structured ECG report including diagnosis and recommended action.

Day 4 Week 4, Day 4

Track	Topic	Learning Objective
History Taking	**Final Open Q&A — History Taking**	Demonstrate history taking for any cardiovascular presentation on request. Summarise key learning points from all four weeks of history taking. Evaluate progress and set post-elective learning goals.
Physical Examination	**Final Open Q&A — Physical Examination**	Perform any cardiovascular examination component fluently and accurately. Differentiate normal from abnormal findings for each examination component. Propose a self-directed practice plan for post-elective skill maintenance.
ECG Interpretation	**Final Open Q&A — ECG Interpretation**	Apply the systematic ECG interpretation protocol to any ECG presented. Analyse complex ECG patterns and generate a differential diagnosis. Reflect on ECG competency and commit to continued self-directed learning.

ASSESSMENT PLAN

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S.No	Assessment Component	Method	Timing	By Whom
1	Daily Logbook	Student documents topics, cases & self-assessment	Daily	Student + Supervisor sign off

RECOMMENDED REFERENCES