

BACHELOR OF CATHETERIZATION LABORATORY TECHNOLOGY

Programme Code: BCLT.2.10- Session 2026–2027

3 Years Academic Training + 1 Year Compulsory Clinical Internship

Code	Course	Type	L+T+P	Credits	Marks IA+UE
BCLT.201	Human Anatomy	Foundation	3+0+1	4	30+70=100T 10+40=50P
BCLT.202	Human Physiology	Foundation	3+0+1	4	30+70=100T 10+40=50P
BCLT.203	Biochemistry	Foundation	2+0+1	3	30+70=100T 10+40=50P
BCLT.204	Medical Electronics	Core	2+1+0	3	30+70=100T
BCLT.205	Professional Communication & English	Core	1+0+1	2	NC
BCLT.206	Healthcare System, Medical Terminology & Documentation	Core	2+0+0	2	NC
BCLT.207	Introduction to Catheterization Laboratory Technology	Core	2+0+0	2	10+40=50
Total Credits			15+1+4	20	600
Semester II					
BCLT.208	Cardiovascular Pharmacology	Foundation	2+0+2	4	30+70=100T 30+70=100P
BCLT.209	Biophysics, Radiation Safety & Imaging Physics	Core	2+0+2	4	30+70=100T 30+70=100P
COM.250	Digital Health & Computer Applications	Core	1+0+1	2	NC
BCLT.210	Quality, Patient Safety & Infection Prevention	Core	2+0+1	3	10+40=50
BCLT.211	Basic Electrocardiography	Core	2+0+2	4	30+70=100P
BCLT.212	Emergency Care, BLS & Patient Monitoring	Core	2+0+1	3	10+40=50
Total Credits			11+0+9	20	600
Semester III					
BCLT.301	Cardiovascular Pathology	Foundation	2+0+1	3	30+70=100T 10+40=50P
BCLT.302	Advanced Basic ECG & Rhythm Recognition	Core	2+0+1	3	10+40=50T 10+40=50P
BCLT.303	Basic Echocardiography	Core	2+0+1	3	10+40=50T 10+40=50P
BCLT.304	Cath-Lab Equipment, Sterility & Radiation Safety	Core	2+0+1	3	30+70=100T 10+40=50P
BCLT.305	Clinical Medicine for Cath-Lab Practice	Core	2+1+0	3	10+40=50
BCLT.306	Cath-Lab Patient Preparation & Monitoring	Core	2+0+2	4	10+40=50
Total Credits			12+1+6	19	600
Semester IV					
BCLT.307	Basic Cardiac Catheterization	Core	3+0+2	5	30+70=100T 10+40=50P
BCLT.308	Exercise Stress Testing	Core	2+0+1	3	30+70=100T 10+40=50P
BCLT.309	Microbiology & Infection Control in Cath Lab	Core	2+0+1	3	30+70=100T 10+40=50P
BCLT.310	Clinical Cardiology & Investigation Interpretation	Core	0+1+3	4	10+40=50T 10+40=50P
BCLT.311	Contrast, Renal Safety & Periprocedural Care	Core	2+1+0	3	10+40=50T
Total Credits			10+1+7	18	600
Semester V					
BCLT.401	Advanced Electrocardiography	Core	3+0+3	6	30+70=100T 30+70=100P

BCLT.402	Advanced Echocardiography	Core	3+0+3	6	30+70=100T 30+70=100P
BCLT.403	Advanced Cath-Lab Technology & Interventional Equipment	Core	2+0+3	5	30+70=100T 30+70=100P
BCLT.404	Professional Ethics, Law & Patient Rights	Core	1+0+1	2	NC
BCLT.405	Clinical Case Seminar	Core	0+1+0	1	NC
Total Credits			9+1+10	20	600
Semester VI					
BCLT.406	Advanced Cardiac Catheterization & Interventional Cardiology	Core	3+0+4	7	30+70=100T 30+70=100P
BCLT.407	Clinical Cardiology & Advanced Patient Management	Core	2+1+2	4	30+70=100T 30+70=100P
BCLT.408	Research Methodology, Biostatistics & Evidence-Based Practice	Core	2+1+0	3	30+70=100T
BCLT.409	Professional Practice, Hospital Systems & Quality Improvement	Core	1+1+1	3	NC
BCLT.410	Clinical Case Seminar	Core	0+1+1	3	NC
Total Credits			10+1+7	18	500
BCLT.500	Clinical Internship – One Academic Year		20+20	40	-
					3500

Programme Educational Philosophy

The programme is designed to prepare students for safe, supervised participation in diagnostic and interventional cardiac catheterization services. Students are expected to understand the patient, the procedure, the equipment, the physiological changes, radiation and contrast safety requirements, emergency response, documentation and professional teamwork. Students should not be considered independently competent to perform procedures that require licensed/credentialed professional decision-making; such activities remain under the supervision and scope of the responsible medical and institutional team.

Programme Learning Outcomes

- Explain clinically relevant anatomy, physiology, pathology, pharmacology and microbiology of cardiovascular disease.
- Prepare patients for catheterization and assist with safe positioning, monitoring, asepsis, documentation and procedural workflow.
- Identify and safely handle commonly used catheterization laboratory equipment, monitors, pressure transducers, injectors and emergency devices.
- Acquire, record and communicate ECG, basic echocardiographic and haemodynamic information according to institutional protocols and supervision.
- Explain the principles and workflow of diagnostic coronary angiography, right/left heart catheterization and major interventional procedures.
- Apply radiation-protection principles and contrast-safety precautions in the catheterization laboratory.
- Recognize common procedural complications and initiate appropriate immediate supportive actions within the student's role while promptly escalating to the responsible team.
- Demonstrate professional communication, patient privacy, informed communication, teamwork and respectful patient care.
- Maintain accurate clinical records, checklists, procedure logs and equipment records.

- Read and discuss basic clinical research, interpret simple statistics and participate in quality-improvement activities.
- Demonstrate professional, ethical and medico-legal conduct.
- Complete a structured clinical internship and demonstrate minimum supervised competencies through a logbook.

Semester I – Foundation Sciences and Cath-Lab Orientation

BCLT.201: Human Anatomy

Credits: 4 L+T+P/week: 3+0+1

Teaching Objective: To provide clinically relevant anatomy needed for vascular access, catheter navigation, cardiac imaging and patient care.

Course Learning Outcomes

- Identify major structures of the cardiovascular system and their relationships.
- Explain coronary arterial and venous anatomy and major vascular access routes.
- Relate surface anatomy and imaging anatomy to common catheterization procedures.
- Identify clinically important complications related to vascular anatomy.

Detailed Course Content

Unit	Content	Hours
I	General anatomy, anatomical terminology, planes, tissues, bones, joints and clinically relevant surface anatomy.	7
II	Thorax, mediastinum, lungs, pleura, heart, pericardium and great vessels.	8
III	Cardiac chambers, valves, coronary arteries, coronary veins and conduction system.	8
IV	Aorta, upper- and lower-limb arteries and veins, carotid and jugular systems, femoral and radial access anatomy.	7
V	Abdomen, renal vessels, abdominal aorta, inferior vena cava and selected congenital vascular anatomy.	6
VI	Applied anatomy for arterial/venous access, coronary angiography, catheter pathways and basic radiological anatomy.	9

Practical / Skill Laboratory

- Identify heart, great vessels and coronary arteries on models/images.
- Demonstrate surface landmarks for radial and femoral access.
- Identify major vascular structures on selected angiographic/CT images.
- Prepare an anatomy-based case map for a diagnostic catheterization procedure.

BCLT.202: Human Physiology

Credits: 4 L+T+P/week: 3+0+1

Teaching Objective: To establish a working understanding of cardiovascular, respiratory, renal, blood and acid-base physiology relevant to catheterization and critical care.

Course Learning Outcomes

- Explain cardiac cycle, cardiac output, blood pressure and coronary circulation.
- Interpret basic physiological changes in shock and ischemia.
- Explain oxygenation, ventilation and acid-base balance.
- Relate haemodynamic variables to catheterization-laboratory monitoring.

Detailed Course Content

Unit	Content	Hours
I	Cell physiology, homeostasis, body fluids, blood, haemoglobin, coagulation and transfusion principles.	7
II	Cardiac muscle, conduction, cardiac cycle, heart sounds, cardiac output and blood pressure.	9
III	Coronary and pulmonary circulation, exercise physiology, shock and haemodynamic regulation.	8
IV	Respiratory mechanics, gas exchange, oxygen transport, ventilation-perfusion and acid-base balance.	8
V	Renal, fluid-electrolyte and temperature regulation.	6
VI	Applied cardiovascular physiology, haemodynamics, pressure-flow relationships and physiological response to procedures.	7

Practical / Skill Laboratory

- Measure BP and pulse.
- Demonstrate basic vital-sign assessment.
- Interpret simple pressure and flow scenarios.
- Case discussion: hypotension during a catheterization procedure.

BCLT.203: Biochemistry

Credits: 3 L+T+P/week: 2+0+1

Teaching Objective: To connect essential biochemical concepts with cardiovascular disease, renal function, contrast safety and clinical investigations.

Course Learning Outcomes

- Explain clinically important carbohydrates, proteins, lipids, enzymes and electrolytes.
- Interpret common biochemical investigations used before and after catheterization.
- Explain renal function and biochemical factors relevant to contrast administration.

Detailed Course Content

Unit	Content	Hours
I	Biomolecules and cell biochemistry.	5
II	Carbohydrate and lipid metabolism; dyslipidaemia and atherosclerosis.	6
III	Proteins, enzymes and clinically relevant cardiac biomarkers.	6
IV	Electrolytes, minerals, acid-base balance and renal function tests.	6
V	Liver function, glucose metabolism and nutrition relevant to cardiovascular risk.	5
VI	Clinical interpretation of common laboratory reports and contrast-related renal risk.	7

Practical / Skill Laboratory

- Basic laboratory demonstrations.
- Interpret selected lipid, glucose, renal-function and electrolyte reports.
- Case-based discussion of a patient with CKD undergoing angiography.

BCLT.204: Medical Electronics

Credits: 3 L+T+P/week: 2+1+0

Teaching Objective: To introduce the principles and safe operation of electronic and monitoring equipment used in cardiovascular care and the catheterization laboratory.

Course Learning Outcomes

- Identify major cath-lab monitoring and recording equipment.
- Explain pressure transducers, ECG, pulse oximetry and defibrillator principles.
- Describe safe equipment checks and basic troubleshooting.

Detailed Course Content

Unit	Content	Hours
I	Electrical safety, current, voltage, resistance, capacitance, grounding and patient safety.	6
II	Pressure transducers, strain gauges, amplifiers and signal conversion.	7
III	ECG machine, patient monitor, pulse oximeter and temperature monitoring.	7
IV	Defibrillator, cardioversion, external pacing and emergency equipment.	6
V	Contrast injector, haemodynamic recording system and image acquisition basics.	5
VI	Equipment checks, preventive maintenance, fault reporting and biomedical-engineering coordination.	4

Practical / Skill Laboratory

- Equipment identification station.
- Pre-use safety checklist.
- Pressure-transducer setup demonstration.
- Defibrillator and emergency equipment familiarization.

BCLT.205: Professional Communication & English

Credits: 2 L+T+P/week: 1+0+1

Teaching Objective: To develop clear, respectful communication with patients, relatives and the multidisciplinary cardiac team.

Course Learning Outcomes

- Communicate using simple patient-friendly language.
- Perform structured handover and procedure briefing.
- Prepare concise clinical notes, emails and presentations.

Detailed Course Content

Unit	Content	Hours
I	Professional language, medical vocabulary, pronunciation and listening.	5
II	Patient communication, consent-related communication and dealing with anxiety.	6
III	Team communication, SBAR handover and closed-loop communication.	6
IV	Clinical writing, email, case summary and incident documentation.	5
V	Presentation, viva and interview skills.	5
VI	Communication in emergency and high-stress situations.	5

Practical / Skill Laboratory

- Role play: patient preparation.

- SBAR handover.
- Five-minute case presentation.
- Professional email/documentation exercise.

BCLT.206: Healthcare System & Medical Terminology

Credits: 2 L+T+P/week: 2+0+0

Teaching Objective: To familiarise students with healthcare delivery, medical terminology, electronic documentation and cath-lab records.

Course Learning Outcomes

- Decode common medical roots, prefixes, abbreviations and procedure terms.
- Read basic clinical orders, reports and investigation summaries.
- Understand hospital workflow, records, confidentiality and data security.

Detailed Course Content

Unit	Content	Hours
I	Indian healthcare delivery: primary, secondary and tertiary care.	5
II	Medical terminology and cardiovascular/procedural vocabulary.	7
III	Clinical documentation, procedure notes, checklists and records.	6
IV	Electronic health records, data entry, privacy and information security.	6
V	Quality documentation and audit-ready records.	6

Practical / Skill Laboratory

- Medical terminology worksheet.
- Complete a sample cath-lab record.
- Electronic documentation exercise.

BCLT.207: Introduction to Catheterization Laboratory Technology

Credits: 2 L+T+P/week: 2+0+0

Teaching Objective: To introduce the catheterization laboratory environment, team roles, workflow, patient journey and professional responsibilities.

Course Learning Outcomes

- Describe the cath-lab layout and workflow.
- Identify the roles of cardiologist, anaesthesia/critical-care team, nursing staff, technologist and support staff.
- Explain basic sterile practice, patient identification and procedure checklists.

Detailed Course Content

Unit	Content	Hours
I	Cath-lab environment, zones, workflow and multidisciplinary team.	5
II	Patient journey: admission, preparation, procedure, recovery and discharge.	5
III	Basic catheter, sheath, guidewire and accessory terminology.	6
IV	Sterile technique, hand hygiene, PPE and surgical-site principles.	5
V	Patient identification, time-out, documentation and	5

	communication.	
VI	Introduction to diagnostic versus interventional procedures.	4

Practical / Skill Laboratory

- Cath-lab orientation.
- Equipment identification walk-through.
- Mock patient journey and time-out.
- Observation logbook.

Semester II – Applied Sciences, ECG, Radiation and Patient Safety

Code	Course	Type	L+T+P	Credits
BCLT.208	Pharmacology for Cardiovascular & Cath-Lab Practice	Foundation	2+0+2	4
BCLT.209	Biophysics, Radiation Safety & Imaging Physics	Core	2+1+1	4
COM.250	Digital Health & Computer Applications	Core	1+0+1	2
BCLT.210	Quality, Patient Safety & Infection Prevention	Core	2+0+1	3
BCLT.211	Basic Electrocardiography	Core	2+0+2	4
BCLT.212	Emergency Care, BLS & Patient Monitoring	Core	2+0+1	3

BCLT.208: Pharmacology for Cardiovascular & Cath-Lab Practice

Credits: 4 L+T+P/week: 2+0+2

Teaching Objective: To teach medicines commonly encountered before, during and after cardiovascular procedures, with emphasis on indications, safety, adverse effects and dose-related principles.

Course Learning Outcomes

- Explain mechanisms and clinical uses of major cardiovascular medicines.
- Recognize antiplatelet, anticoagulant, thrombolytic, anti-anginal, anti-arrhythmic and vasoactive drugs.
- Apply medication-safety principles within the technologist's role.

Detailed Course Content

Unit	Content	Hours
I	Pharmacokinetics, pharmacodynamics, routes, adverse drug reactions and medication safety.	6
II	Anti-anginal and anti-ischaemic drugs.	7
III	Antihypertensives, diuretics and heart-failure drugs.	7
IV	Anti-arrhythmic drugs and emergency cardiovascular medicines.	7
V	Antiplatelets, anticoagulants, thrombolytics and reversal principles.	8
VI	Sedation/analgesia, contrast-related medicines, antibiotics and emergency drugs.	8

Practical / Skill Laboratory

- Drug tray identification.
- Dose/volume calculation exercises.
- Anticoagulant and antiplatelet case scenarios.
- Adverse-drug-reaction reporting exercise.

BCLT.209: Biophysics, Radiation Safety & Imaging Physics

Credits: 4 L+T+P/week: 2+1+1

Teaching Objective: To provide practical understanding of X-ray production, fluoroscopy, radiation dose, image formation and radiation protection in the cath lab.

Course Learning Outcomes

- Explain basic X-ray production and image formation.
- Identify radiation hazards to patient and staff.
- Apply time, distance, shielding and dose-minimisation principles.
- Use personal radiation monitoring appropriately.

Detailed Course Content

Unit	Content	Hours
I	Medical physics, atoms, electromagnetic radiation and X-ray production.	6
II	X-ray interactions, attenuation, scatter and image formation.	7
III	Fluoroscopy, image intensification/digital systems and cine acquisition.	7
IV	Radiation dose, dose-area product, exposure monitoring and dosimetry.	7
V	Radiation protection: time, distance, shielding, PPE and staff monitoring.	8
VI	Contrast imaging, CT angiography principles and occupational safety.	5

Practical / Skill Laboratory

- Radiation-safety audit.
- TLD/dosimeter familiarization.
- Lead-apron and thyroid-shield inspection.
- Fluoroscopy dose-reduction simulation.

COM.250: Digital Health & Computer Applications

Credits: 2 L+T+P/week: 1+0+1

Teaching Objective: To develop practical computer skills for clinical documentation, data handling, presentations and digital healthcare systems.

Course Learning Outcomes

- Create and format clinical documents.
- Use spreadsheets for basic clinical data.
- Prepare presentations and simple charts.
- Understand EHR, PACS/DICOM, email and data confidentiality.

Detailed Course Content

Unit	Content	Hours
I	Word processing and clinical documentation.	5
II	Excel: tables, formulas, sorting and basic charts.	7
III	PowerPoint and scientific presentation.	5
IV	Internet, literature searching, email and file management.	5
V	EHR, HIS, PACS/DICOM and data privacy.	8

Practical / Skill Laboratory

- Prepare a sample procedure report.
- Create a simple patient-data spreadsheet.
- Prepare a 5-slide clinical presentation.

BCLT.210: Quality, Patient Safety & Infection Prevention

Credits: 3 L+T+P/week: 2+0+1

Teaching Objective: To develop a safety-first approach to cath-lab practice.

Course Learning Outcomes

- Apply patient identification, time-out and checklist principles.
- Demonstrate hand hygiene and PPE use.
- Recognize infection risks, biomedical waste and near-miss events.
- Describe basic quality-improvement methods.

Detailed Course Content

Unit	Content	Hours
I	Quality of care, patient safety, standards and audit.	5
II	BLS, primary assessment, triage and emergency response.	8
III	Infection prevention, sterilization, disinfection and PPE.	8
IV	Biomedical waste, sharps and environmental safety.	6
V	Contrast safety, medication safety and adverse-event reporting.	6
VI	Incident reporting, root-cause concepts and quality improvement.	5

Practical / Skill Laboratory

- Hand hygiene audit.
- PPE station.
- Mock time-out.
- Biomedical waste segregation.
- Near-miss reporting exercise.

BCLT.211: Basic Electrocardiography

Credits: 4 L+T+P/week: 2+0+2

Teaching Objective: To develop reliable acquisition and basic interpretation of a 12-lead ECG relevant to cardiac patients.

Course Learning Outcomes

- Prepare the patient and correctly place electrodes.
- Acquire a technically acceptable 12-lead ECG.
- Recognize rate, rhythm, axis and major abnormalities.
- Escalate urgent ECG findings promptly.

Detailed Course Content

Unit	Content	Hours
I	ECG principles, cardiac conduction and ECG machine.	6
II	Patient preparation, electrode placement and artefact reduction.	7
III	Rate, rhythm, intervals and axis.	7
IV	Normal ECG and common conduction abnormalities.	7
V	Ischaemia, injury and infarction patterns.	8
VI	Electrolyte-related changes, pacemaker rhythms and urgent patterns.	5

Practical / Skill Laboratory

- Minimum 20 supervised ECG acquisitions.

- ECG logbook.
- Artefact identification.
- Case-based ECG interpretation.

BCLT.212: Emergency Care, BLS & Patient Monitoring

Credits: 3 L+T+P/week: 2+0+1

Teaching Objective: To prepare students to recognize deterioration and assist the team during emergencies.

Course Learning Outcomes

- Perform BLS according to institutional/current training requirements.
- Measure and document vital signs accurately.
- Recognize shock, arrhythmia, hypoxia and cardiac arrest.
- Assist with emergency equipment and escalation.

Detailed Course Content

Unit	Content	Hours
I	Primary assessment, ABC approach and vital signs.	6
II	BLS/CPR, AED/defibrillator and emergency trolley.	7
III	Shock, syncope, chest pain, dyspnoea and acute deterioration.	7
IV	Patient monitoring: ECG, SpO ₂ , BP, temperature and urine output.	6
V	Safe patient transfer and recovery-area monitoring.	5
VI	Cath-lab emergency scenarios and team communication.	5

Practical / Skill Laboratory

- BLS simulation.
- Emergency trolley check.
- Patient transfer simulation.
- Mock cardiac-arrest drill.

Semester III – Clinical Sciences and Patient Preparation

Code	Course	Type	L+T+P	Credits
BCLT.301	Cardiovascular & Relevant Pathology	Foundation	2+0+2	4
BCLT.302	Advanced Basic ECG & Rhythm Recognition	Core	2+0+2	4
BCLT.303	Basic Echocardiography	Core	2+0+2	4
BCLT.304	Microbiology & Infection Control in Cath Lab	Foundation	2+0+1	3
BCLT.305	Clinical Medicine for Cath-Lab Practice	Core	2+1+0	3
BCLT.306	Cath-Lab Patient Preparation & Monitoring	Core	2+0+2	2

BCLT.301: Cardiovascular & Relevant Pathology

Credits: 4 L+T+P/week: 2+0+2

Teaching Objective: To explain the pathological basis of diseases commonly encountered in diagnostic and interventional cardiology.

Course Learning Outcomes

- Explain CAD, valvular disease, cardiomyopathies, heart failure and congenital heart disease.
- Recognize pathological mechanisms underlying vascular disease and complications.
- Relate pathology to angiographic and clinical findings.

Detailed Course Content

Unit	Content	Hours
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I	Atherosclerosis, coronary artery disease and myocardial infarction.	7
II	Valvular disease, rheumatic disease and infective endocarditis.	6
III	Heart failure, cardiomyopathies and pericardial disease.	6
IV	Arrhythmias and conduction-system disease.	5
V	Congenital heart disease and pulmonary hypertension.	6
VI	Peripheral vascular disease, aneurysm, dissection and thromboembolism.	5

Practical / Skill Laboratory

- Interpret selected pathology reports.
- Correlate case history with likely pathology.
- Review angiographic examples under supervision.

BCLT.302: Advanced Basic ECG & Rhythm Recognition

Credits: 4 L+T+P/week: 2+0+2

Teaching Objective: To progress from basic ECG acquisition to recognition of clinically important rhythm and conduction abnormalities.

Course Learning Outcomes

- Recognize atrial and ventricular arrhythmias.
- Identify AV blocks and bundle-branch abnormalities.
- Recognize ECG patterns requiring urgent escalation.

Detailed Course Content

Unit	Content	Hours
I	Atrial enlargement and ventricular hypertrophy.	6
II	Bundle branch and fascicular blocks.	7
III	ST-T abnormalities, myocardial ischaemia and infarction.	7
IV	Atrial fibrillation/flutter and supraventricular tachycardia.	7
V	Ventricular ectopy, VT/VF and long-QT patterns.	6
VI	AV blocks, pacemaker rhythms and emergency ECG recognition.	7

Practical / Skill Laboratory

- ECG case portfolio.
- Rhythm-strip station.
- CCU/cath-lab supervised ECG posting.

BCLT.303: Basic Echocardiography

Credits: 4 L+T+P/week: 2+0+2

Teaching Objective: To introduce echocardiographic principles, patient preparation, standard views and recognition of common findings; advanced diagnostic interpretation remains under qualified supervision.

Course Learning Outcomes

- Explain basic ultrasound and Doppler principles.
- Prepare and position patients for echocardiography.
- Identify standard cardiac views and basic structures.
- Recognize major abnormalities for communication to the supervising professional.

Detailed Course Content

Unit	Content	Hours
I	Ultrasound physics, transducers and safety.	6

II	Patient preparation, positioning and standard windows.	7
III	Chambers, valves, pericardium and great vessels.	7
IV	Basic Doppler and haemodynamic concepts.	6
V	Valvular disease, LV function and pericardial effusion.	6
VI	Congenital heart disease and introduction to TEE/advanced imaging.	6

Practical / Skill Laboratory

- Transducer identification.
- Standard-view demonstration.
- Echo observation log.
- Case-based image recognition.

BCLT.304: Microbiology & Infection Control in Cath Lab

Credits: 3 L+T+P/week: 2+0+1

Teaching Objective: To prevent procedure-related infection and promote safe aseptic practice.

Course Learning Outcomes

- Explain common healthcare-associated infections.
- Demonstrate hand hygiene and aseptic principles.
- Describe sterilization/disinfection and device safety.
- Apply infection-prevention measures during procedures.

Detailed Course Content

Unit	Content	Hours
I	Microorganisms and healthcare-associated infection.	6
II	Sterilization, disinfection and environmental cleaning.	7
III	Aseptic technique, PPE and sterile-field principles.	6
IV	Blood-borne infections and occupational exposure.	5
V	Antimicrobial resistance and antimicrobial stewardship.	5
VI	Cath-lab infection surveillance and outbreak response.	5

Practical / Skill Laboratory

- Hand hygiene assessment.
- Sterile-field setup.
- Sharps injury scenario.
- Infection-control checklist.

BCLT.305: Clinical Medicine for Cath-Lab Practice

Credits: 3 L+T+P/week: 2+1+0

Teaching Objective: To provide practical clinical knowledge of common medical conditions affecting patients undergoing cardiovascular procedures.

Course Learning Outcomes

- Recognize common cardiovascular and systemic diseases.
- Understand indications for common investigations and procedures.
- Identify comorbidities relevant to procedural risk.

Detailed Course Content

Unit	Content	Hours
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I	Hypertension, diabetes, dyslipidaemia and cardiovascular risk.	6
II	Ischaemic heart disease and acute coronary syndromes.	7
III	Heart failure, valvular disease and cardiomyopathies.	6
IV	Arrhythmias, syncope and thromboembolic disease.	6
V	Renal, respiratory and neurological comorbidities.	5
VI	Pre-procedure assessment and interpretation of common investigations.	5

Practical / Skill Laboratory

- Case discussions.
- Pre-procedure assessment exercise.
- Interpretation of basic laboratory reports.

BCLT.306: Cath-Lab Patient Preparation & Monitoring

Credits: 2 L+T+P/week: 2+0+2

Teaching Objective: To develop safe, supervised skills for preparing, monitoring and transferring patients in the catheterization laboratory.

Course Learning Outcomes

- Verify identity, procedure, consent status and relevant investigations.
- Prepare monitoring equipment and assist with positioning.
- Maintain accurate observations and communicate deterioration.
- Assist with safe transfer to recovery/ward.

Detailed Course Content

Unit	Content	Hours
I	Pre-procedure checklist, identification and documentation.	5
II	Consent verification, fasting, allergies, medication and laboratory review.	5
III	Monitoring, IV access support and oxygen therapy.	5
IV	Positioning, pressure areas, privacy and comfort.	5
V	Post-procedure observation, access-site monitoring and discharge criteria.	5
VI	Case-based workflow and escalation.	5

Practical / Skill Laboratory

- Minimum 10 supervised patient-preparation episodes.
- Monitoring checklist.
- Post-procedure observation chart.

Semester IV – Basic Cardiac Catheterization and Cath-Lab Practice

Code	Course	Type	L+T+P	Credits
BCLT.401	Basic Cardiac Catheterization	Core	3+0+3	6
BCLT.402	Exercise Stress Testing	Core	2+0+2	4
BCLT.403	Cath-Lab Equipment, Sterility & Radiation Safety	Core	2+0+2	4
BCLT.404	Clinical Cardiology & Investigation Interpretation	Core	2+1+0	3
BCLT.405	Contrast, Renal Safety & Periprocedural Care	Core	1+0+2	3

BCLT.401: Basic Cardiac Catheterization

Credits: 6 L+T+P/week: 3+0+3

Teaching Objective: To provide a structured introduction to diagnostic cardiac catheterization, coronary angiography, haemodynamic recording and cath-lab workflow.

Course Learning Outcomes

- Describe indications, contraindications and preparation for diagnostic catheterization.
- Identify common catheters, guidewires, sheaths, manifolds and accessories.
- Assist safely with right/left heart catheterization and coronary angiography.
- Understand pressure recording and basic haemodynamic calculations.
- Recognize common complications and escalate immediately.

Detailed Course Content

Unit	Content	Hours
I	History of cardiac catheterization, indications, contraindications, patient selection and consent workflow.	8
II	Cath-lab setup, sterile preparation, access sites, sheaths, wires, catheters and manifolds.	9
III	Radial and femoral approaches; vascular access assistance and haemostasis.	8
IV	Right and left heart catheterization; pressure waveforms and haemodynamic measurements.	9
V	Coronary angiography: projections, contrast injection, image acquisition and documentation.	8
VI	Complications: bleeding, haematoma, arrhythmia, hypotension, allergy, contrast injury, perforation and emergency response.	8

Practical / Skill Laboratory

- Equipment identification.
- Manifold and pressure-line setup simulation.
- Catheter and guidewire handling on models/simulation.
- Observe and document diagnostic angiography cases.
- Pressure-waveform interpretation.
- Access-site and post-procedure care.

BCLT.402: Exercise Stress Testing

Credits: 4 L+T+P/week: 2+0+2

Teaching Objective: To provide supervised competency in preparation, monitoring and safe conduct of treadmill exercise testing.

Course Learning Outcomes

- Prepare patient and equipment safely.
- Record baseline ECG and vital signs.
- Apply standard monitoring and recognize termination criteria.
- Document test data and promptly report abnormal findings.

Detailed Course Content

Unit	Content	Hours
I	Principles, indications, contraindications and patient preparation.	6

II	Exercise protocols, monitoring and ECG recording.	7
III	Blood pressure, symptoms, workload and functional capacity.	6
IV	Positive/abnormal responses and termination criteria.	6
V	Complications and emergency preparedness.	5
VI	Reporting, documentation and case interpretation.	5

Practical / Skill Laboratory

- Equipment check.
- Patient preparation.
- Supervised stress-test observation.
- Emergency-stop simulation.
- Minimum 5 documented supervised cases.

BCLT.403: Cath-Lab Equipment, Sterility & Radiation Safety

Credits: 4 L+T+P/week: 2+0+2

Teaching Objective: To develop safe equipment handling, sterile practice and radiation protection in the procedural environment.

Course Learning Outcomes

- Perform a pre-procedure equipment checklist.
- Identify common disposable and reusable cath-lab components.
- Apply radiation protection and sterile-field principles.
- Report equipment faults and contamination risks.

Detailed Course Content

Unit	Content	Hours
I	Cath-lab table, C-arm/fluoroscopy system and image chain.	6
II	Contrast injector, pressure recording, ECG and haemodynamic monitoring.	7
III	Catheters, guidewires, sheaths, balloons and stents—identification and safe handling.	7
IV	Sterile supply, CSSD interface and infection-control workflow.	6
V	Radiation safety, PPE, dosimetry and dose optimisation.	7
VI	Equipment troubleshooting, maintenance records and emergency preparedness.	6

Practical / Skill Laboratory

- Daily cath-lab checklist.
- Equipment identification OSPE.
- Radiation-protection station.
- Sterile trolley setup.
- Fault-reporting exercise.

BCLT.404: Clinical Cardiology & Investigation Interpretation

Credits: 3 L+T+P/week: 2+1+0

Teaching Objective: To integrate symptoms, examination, ECG, echo, laboratory findings and imaging into a basic clinical picture relevant to catheterization.

Course Learning Outcomes

- Recognize common cardiovascular presentations.

- Relate ECG/Echo/laboratory findings to likely disease.
- Understand the clinical purpose of common cardiac investigations.

Detailed Course Content

Unit	Content	Hours
I	Chest pain and acute coronary syndromes.	6
II	Dyspnoea, heart failure and valvular disease.	6
III	Arrhythmias and syncope.	5
IV	Hypertension, diabetes and dyslipidaemia.	5
V	Peripheral vascular disease and aortic disease.	5
VI	Integrated case interpretation.	5

Practical / Skill Laboratory

- Case-based tutorials.
- Investigation-report interpretation.
- Clinical presentation.

BCLT.405: Contrast, Renal Safety & Periprocedural Care

Credits: 3 L+T+P/week: 1+0+2

Teaching Objective: To develop safe practice around contrast administration, renal risk, hydration, allergy precautions and post-procedure care.

Course Learning Outcomes

- Identify patients at increased risk of contrast-associated kidney injury.
- Explain contrast types and basic adverse reactions.
- Assist with monitoring, documentation and escalation of contrast reactions.
- Provide appropriate post-procedure observations within the team protocol.

Detailed Course Content

Unit	Content	Hours
I	Contrast media: types, properties and indications.	5
II	Contrast reactions and emergency response.	6
III	Renal function, risk assessment and preventive strategies.	6
IV	Hydration, medication review and post-procedure monitoring.	6
V	Access-site care, bleeding and vascular complications.	5
VI	Documentation and case scenarios.	4

Practical / Skill Laboratory

- Contrast checklist.
- Renal-risk case assessment.
- Allergy/emergency simulation.
- Post-procedure observation chart.

Semester V – Advanced Diagnostic and Imaging Skills

Code	Course	Type	L+T+P	Credits
BCLT.501	Advanced Electrocardiography	Core	3+0+3	6
BCLT.502	Advanced Echocardiography	Core	3+0+3	6
BCLT.503	Advanced Cath-Lab Technology & Interventional Equipment	Core	2+0+3	5
BCLT.504	Professional Ethics, Law & Patient Rights	Core	1+0+1	2
BCLT.505	Clinical Case Seminar & Logbook-I	Core	0+1+0	1

BCLT.501: Advanced Electrocardiography

Credits: 6 L+T+P/week: 3+0+3

Teaching Objective: To develop advanced ECG acquisition and pattern-recognition skills relevant to acute and procedural cardiology.

Course Learning Outcomes

- Recognize major atrial, ventricular and conduction abnormalities.
- Recognize ECG evidence of ischaemia/infarction and electrolyte effects.
- Understand pacemaker-related ECG patterns.
- Communicate urgent ECG findings promptly.

Detailed Course Content

Unit	Content	Hours
I	Chamber enlargement and hypertrophy.	7
II	Bundle branch/fascicular blocks and conduction delay.	7
III	Ischaemia, infarction, ST-T and QRS changes.	7
IV	Atrial and supraventricular arrhythmias.	7
V	Ventricular arrhythmias, AV block and emergency rhythms.	8
VI	Pacemaker rhythms, electrolyte changes and integrated ECG cases.	8

Practical / Skill Laboratory

- Minimum 30 supervised ECGs across basic/advanced cases.
- ECG portfolio.
- CCU/cath-lab posting.
- OSPE interpretation stations.

BCLT.502: Advanced Echocardiography

Credits: 6 L+T+P/week: 3+0+3

Teaching Objective: To develop supervised competence in echocardiographic acquisition and recognition of common advanced findings.

Course Learning Outcomes

- Understand standard transthoracic views and Doppler principles.
- Assist with advanced echo studies under supervision.
- Recognize valvular, ventricular, pericardial and congenital abnormalities.
- Understand the clinical role of TEE, 3D/4D and tissue Doppler.

Detailed Course Content

Unit	Content	Hours
I	Advanced 2D imaging and image optimisation.	7
II	Doppler, spectral Doppler and colour Doppler.	7

III	Valvular stenosis/regurgitation and prosthetic valves.	8
IV	LV/RV function, cardiomyopathies and pulmonary hypertension.	7
V	Congenital disease, pericardial disease and intracardiac masses.	7
VI	TEE, 3D/4D, tissue Doppler and advanced applications.	8

Practical / Skill Laboratory

- Supervised echo-room posting.
- Standard-view logbook.
- Image-quality checklist.
- Minimum 10 supervised examinations/observations, subject to institutional case volume.

BCLT.503: Advanced Cath-Lab Technology & Interventional Equipment

Credits: 5 L+T+P/week: 2+0+3

Teaching Objective: To introduce the equipment, workflow and safety considerations of contemporary interventional cardiology.

Course Learning Outcomes

- Identify guiding catheters, guidewires, balloons, stents and support devices.
- Explain basic workflow for PCI and selected structural/electrophysiology procedures.
- Assist with preparation and equipment checks under supervision.
- Recognize major procedural complications.

Detailed Course Content

Unit	Content	Hours
I	PCI laboratory setup and equipment.	7
II	Guiding catheters, guidewires, balloons and stents.	8
III	Pressure/flow assessment and adjunctive imaging concepts.	7
IV	Complications: dissection, perforation, no-reflow, thrombosis and bleeding.	8
V	Temporary pacing, EP-lab equipment and device procedures—overview.	7
VI	Structural interventions and newer cath-lab technologies—overview.	8

Practical / Skill Laboratory

- PCI equipment identification.
- Mock procedure setup.
- Emergency-device checklist.
- Case-based complication drill.

BCLT.504: Professional Ethics, Law & Patient Rights

Credits: 2 L+T+P/week: 1+0+1

Teaching Objective: To ensure ethical, respectful and legally responsible conduct in catheterization laboratory practice.

Course Learning Outcomes

- Apply confidentiality, privacy and informed-communication principles.
- Recognize professional negligence, documentation and medico-legal responsibilities.
- Respect patient autonomy and rights.
- Follow institutional codes of conduct.

Detailed Course Content

Unit	Content	Hours
I	Ethical principles and professional conduct.	5
II	Consent, autonomy, confidentiality and privacy.	6
III	Medical records, medico-legal documentation and incident reporting.	6
IV	Negligence, professional responsibility and indemnity.	5
V	Human rights, organ donation and end-of-life issues.	4
VI	Research ethics and professional digital conduct.	4

Practical / Skill Laboratory

- Ethics case discussion.
- Consent communication role-play.
- Medico-legal documentation exercise.

BCLT.505: Clinical Case Seminar & Logbook-I

Credits: 1 L+T+P/week: 0+1+0

Teaching Objective: To develop structured clinical presentation, reflection and documentation skills.

Course Learning Outcomes

- Present a cardiovascular case clearly.
- Link symptoms, investigations and procedure planning.
- Maintain a professional clinical logbook.

Detailed Course Content

Unit	Content	Hours
I	Case selection and documentation.	5
II	ECG/Echo integration.	5
III	Cath-lab workflow case.	5
IV	Complication case.	5
V	Professional reflection.	5
VI	Seminar presentation.	5

Practical / Skill Laboratory

- One case presentation.
- One journal/article discussion.
- Logbook review.

Semester VI – Advanced Catheterization, Cardiology and Research

Code	Course	Type	L+T+P	Credits
BCLT.601	Advanced Cardiac Catheterization & Interventional Cardiology	Core	3+0+4	7
BCLT.602	Clinical Cardiology & Advanced Patient Management	Core	2+1+2	4
BCLT.603	Research Methodology, Biostatistics & Evidence-Based Practice	Core	2+1+0	3
BCLT.604	Professional Practice, Hospital Systems & Quality Improvement	Core	1+1+1	3
BCLT.605	Clinical Case Seminar & Logbook-II	Core	0+1+1	3

BCLT.601: Advanced Cardiac Catheterization & Interventional Cardiology

Credits: 7 L+T+P/week: 3+0+4

Teaching Objective: To prepare students for supervised participation in advanced diagnostic and interventional catheterization procedures.

Course Learning Outcomes

- Explain the workflow and equipment for PCI and selected structural interventions.
- Assist with preparation of devices and procedural equipment under supervision.
- Understand contrast, haemodynamic and access-site management.
- Recognize and immediately escalate major complications.
- Understand EP, pacing and selected structural-heart procedures at an appropriate undergraduate level.

Detailed Course Content

Unit	Content	Hours
I	Coronary angiography review, haemodynamic assessment and advanced diagnostic techniques.	8
II	PCI: guiding catheters, guidewires, balloons, stents and laboratory setup.	9
III	Complications: dissection, perforation, thrombosis, no-reflow, bleeding and shock.	8
IV	Peripheral interventions, aortic angiography, thromboembolic disease and selected vascular procedures.	8
V	Paediatric/congenital interventions and structural procedures—overview.	8
VI	Pacing, electrophysiology, radiofrequency ablation and device-based procedures—overview.	8

Practical / Skill Laboratory

- Advanced procedure observation log.
- PCI setup simulation.
- Device/equipment identification.
- Complication-response simulation.
- Minimum supervised procedure observations according to institutional case availability.

BCLT.602: Clinical Cardiology & Advanced Patient Management

Credits: 4 L+T+P/week: 2+1+2

Teaching Objective: To integrate clinical cardiology with pre-, intra- and post-procedure patient management.

Course Learning Outcomes

- Assess cardiovascular risk factors and major comorbidities.
- Recognize acute coronary syndrome, heart failure, arrhythmia and shock.
- Interpret common laboratory, ECG, echo and imaging information in context.
- Assist with safe post-procedure monitoring and escalation.

Detailed Course Content

Unit	Content	Hours
I	ACS, STEMI/NSTEMI and reperfusion strategies.	6
II	Heart failure, cardiogenic shock and mechanical support overview.	7
III	Arrhythmias, pacing and electrophysiology.	6
IV	Valvular/structural heart disease.	6

V	Renal, respiratory and neurological comorbidity.	5
VI	Integrated peri-procedural cases.	6

Practical / Skill Laboratory

- Case conferences.
- Pre/post procedure assessment.
- Emergency case simulation.

BCLT.603: Research Methodology & Biostatistics

Credits: 3 L+T+P/week: 2+1+0

Teaching Objective: To enable students to read, interpret and participate responsibly in clinical research and quality-improvement activities.

Course Learning Outcomes

- Formulate a simple clinical question.
- Differentiate common study designs.
- Understand descriptive statistics, confidence intervals and p-values at an introductory level.
- Read tables/figures and identify common biases.
- Prepare a simple audit or observational project.

Detailed Course Content

Unit	Content	Hours
I	Research questions, literature search and study designs.	5
II	Sampling, variables, data collection and ethics.	5
III	Descriptive statistics, graphs and tables.	6
IV	Probability, confidence intervals and basic hypothesis testing.	6
V	Correlation, diagnostic accuracy and introduction to regression.	6
VI	Critical appraisal, reporting, plagiarism and research integrity.	7

Practical / Skill Laboratory

- Literature-search exercise.
- Simple spreadsheet analysis.
- Critical appraisal of one article.
- Mini audit/research proposal.

BCLT.604: Professional Practice, Hospital Systems & Quality Improvement

Credits: 3 L+T+P/week: 1+1+1

Teaching Objective: To prepare students for responsible transition from classroom learning to supervised professional practice.

Course Learning Outcomes

- Understand cath-lab staffing and workflow.
- Maintain equipment, inventory and documentation systems.
- Participate in audit and quality-improvement activities.
- Demonstrate professional teamwork and career readiness.

Detailed Course Content

Unit	Content	Hours
I	Hospital organization and cath-lab administration.	5
II	Inventory, consumables, equipment maintenance and biomedical engineering interface.	5
III	Quality indicators, audit and incident reporting.	6
IV	Documentation, scheduling and data management.	5
V	Teamwork, leadership, conflict management and communication.	5
VI	Career planning, CV, interview and continuing professional development.	4

Practical / Skill Laboratory

- Quality audit.
- Inventory exercise.
- Mock incident report.
- Professional portfolio.

BCLT.605: Clinical Case Seminar

Credits: 3 L+T+P/week: 0+1+1

Teaching Objective: To consolidate clinical reasoning and prepare students for internship.

Course Learning Outcomes

- Present an advanced cath-lab case.
- Demonstrate readiness for supervised clinical responsibilities.
- Maintain a competency-based logbook.

Detailed Course Content

Unit	Content	Hours
I	Diagnostic angiography case.	5
II	PCI case.	5
III	Complication case.	5
IV	Echo/ECG integrated case.	5
V	Emergency case.	5
VI	Internship readiness portfolio and viva.	5

Practical / Skill Laboratory

- Portfolio review.
- Case presentation.
- Internship competency viva.

Clinical Internship – One Academic Year

The internship should begin only after successful completion of all academic requirements through Semester VI. It should be compulsory and competency based. The exact duty hours, attendance and assessment regulations should be approved by the University/competent authority. The source curriculum contains both one-year and earlier six-month/1800-hour wording; this revised draft adopts one academic year consistently for programme planning.

Posting	Suggested duration/focus	Core competencies
Orientation	1 week	Hospital orientation, infection control, patient safety, documentation, emergency codes, radiation safety.
Catheterization Laboratory	Majority of internship	Patient preparation, monitoring, equipment setup, sterile workflow, diagnostic angiography, PCI observation/assistance, access-site care, documentation.
Cardiac/Coronary Care Unit	4 weeks	ECG, haemodynamic monitoring, post-procedure care, emergency recognition, handover.
Echocardiography/Non-invasive Cardiology	2 weeks	Patient preparation, echo observation, ECG correlation, reporting workflow.
Radiology/Imaging & Radiation Safety	1 week	Fluoroscopy safety, dosimetry, imaging workflow.
CSSD/Sterile Services	1 week	Sterilization, sterile supply, infection prevention.
Blood Bank/Laboratory	1 week	Blood grouping, compatibility, relevant laboratory reports.
Emergency/Casualty	1 week	BLS, triage, emergency communication and safe transfer.
Quality/Medical Records	1 week	Audit, documentation, incident reporting, data confidentiality.
Elective/Advanced Cath-Lab Exposure	2 weeks	EP/pacing/structural/peripheral intervention exposure as available.

Minimum Internship Competency Framework

- Patient identification and pre-procedure checklist.
- Review of consent status, allergies, relevant medications and investigations.
- Preparation of ECG, SpO2, BP and other monitoring equipment.
- Patient positioning, privacy and safe transfer.
- Sterile-field awareness and infection-control compliance.
- Identification of sheaths, catheters, guidewires, balloons, stents and common accessories.
- Pressure-transducer and haemodynamic-monitoring setup under supervision.
- Observation/assistance in diagnostic coronary angiography.
- Observation/assistance in PCI according to institutional scope and supervision.
- Recognition and escalation of bleeding, haematoma, arrhythmia, hypotension, contrast reaction and other complications.
- Radiation-protection compliance.
- Post-procedure access-site monitoring.
- Accurate clinical documentation and procedure log.
- Effective SBAR/closed-loop communication.
- Participation in at least one quality-improvement/audit activity.
- Professional conduct, confidentiality and patient dignity.

14. Competency Levels

Level	Meaning
L1 – Observe	Student observes the procedure and explains its purpose.
L2 – Assist	Student assists a qualified professional under direct

	supervision.
L3 – Perform under direct supervision	Student performs the defined skill under direct supervision after demonstration of knowledge.
L4 – Demonstrate competency	Student consistently performs the defined skill safely under the supervision framework approved by the institution.

Students must not independently undertake procedures outside their legal/institutional scope. Final competency sign-off remains the responsibility of the designated qualified supervisor.

Student-Friendly Teaching-Learning Methods

- Short interactive lectures rather than long uninterrupted lectures.
- Case-based learning using common cath-lab scenarios.
- Simulation before first patient exposure.
- Equipment demonstration followed by supervised student practice.
- Weekly ECG/echo/cath-lab image interpretation sessions.
- Small-group tutorials and peer learning.
- Clinical logbook from Semester II onward.
- One structured case presentation each semester from Semester III.
- Journal/article discussion from Semester VI.
- Use of checklists and competency cards for practical learning.

Suggested OSPE/OSCE Stations

- 12-lead ECG electrode placement and artefact correction.
- Interpret a basic ECG and identify an urgent abnormality for escalation.
- Identify cath-lab catheters, guidewires, sheaths, balloons and stents.
- Set up a pressure transducer and identify zeroing/leveling requirements.
- Demonstrate radiation-protection principles.
- Prepare a patient for diagnostic coronary angiography.
- Perform a cath-lab time-out using a checklist.
- Identify and respond to a contrast-reaction scenario.
- Identify access-site bleeding/haematoma and state escalation steps.
- Prepare an emergency trolley/defibrillator check.
- Interpret a basic echocardiographic image.
- Complete a procedure record accurately.

Clinical Case-Based Learning Plan

Semester	Example case	Expected integration
I	Patient with chest pain	Anatomy + physiology + terminology + communication
II	Patient scheduled for angiography with diabetes/HTN	Pharmacology + safety + ECG + radiation
III	Acute coronary syndrome	Pathology + ECG + echo + clinical medicine
IV	Diagnostic coronary angiography	Cath-lab workflow + equipment + haemodynamics + contrast safety

V	PCI with arrhythmia	Advanced ECG + echo + interventional equipment + ethics
VI	Complex PCI with renal dysfunction	Advanced catheterization + cardiology + contrast/renal safety + emergency response
Internship	Real supervised case	Integrated competency, documentation and teamwork

Recommended Logbook Format

Skill	Observe	Assist	Perform under supervision	Supervisor sign/date
Patient identification/checklist	☐	☐	☐	
ECG acquisition	☐	☐	☐	
Patient monitoring	☐	☐	☐	
Cath-lab equipment setup	☐	☐	☐	
Pressure-transducer setup	☐	☐	☐	
Sterile-field preparation	☐	☐	☐	
Diagnostic angiography observation	☐	☐	☐	
PCI equipment preparation	☐	☐	☐	
Access-site monitoring	☐	☐	☐	
Contrast safety checklist	☐	☐	☐	
Radiation-safety practice	☐	☐	☐	
Emergency response	☐	☐	☐	
Clinical documentation	☐	☐	☐	

Recommended Graduate Profile

At the end of the programme, the graduate should be able to function as a safe, ethical and clinically aware entry-level catheterization laboratory technologist within the scope defined by the employing institution and applicable professional regulations. The graduate should be able to prepare patients, support diagnostic and interventional procedures, operate/assist with relevant equipment, maintain monitoring and documentation, apply radiation and infection-safety principles, recognize deterioration, communicate effectively and escalate problems promptly.

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