

Revised Syllabus For DIPLOMA IN ECG TECHNOLOGY



**LAL BAHADUR SHASTRI HEALTH SCIENCES
AND TECHNICAL COUNCIL, INDIA**

**लाल बहादुर शास्त्री आरोग्य विज्ञान एवं प्राविधिक परिषद,
भारत**

मुख्य कार्यालय : 4वीं मंजिल, प्राइम प्लाजा, इंद्रा नगर, लखनऊ

प्रशासनिक कार्यालय : द्वितीय तल, सुनील कम्पलेक्स, वेस्टर्न कचेरी रोड, मेरठ

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**Exam :March and April
(To be implemented from 2026-27 session)
Syllabus of Diploma in ECG Technology**

FIRST YEAR (1st)

S.NO	Subject	Distribution Of Mark			
		TH	PR	Viva -Voce	Total
ECG-1	Pathology & Terminology	100	-	-	100
ECG-2	Human Anatomy & Physiology	100	-	-	100
ECG-3	ECG Instruments & Maintenance	100	-	-	100
ECG-4	Clinical Cardiology	100	-	-	100
ECG-5	Practical	-	50	50	100
	Total	400	-	-	500

SECOND YEAR (2nd)

S.NO	Subject	Distribution Of Mark			
		TH	PR	Viva -Voce	Total
2ECG-1	Pharmacology	100	-	-	100
2ECG-2	Communication Skills in English	100	-	-	100
2ECG-3	Computer Application	100	-	-	100
2ECG-4	General Principles of Hospital Practice and Patient Care	100	-	-	100
2ECG-5	Clinical Internship / OJT	-	50	50	100
	Total	400	50	50	500

FIRST YEAR(1ST YEAR)

Subject 1: Pathology & Terminology

Unit 1: Medical Terminology

- Medical prefixes, suffixes, roots and abbreviations.
- Common hospital and diagnostic terminology.
- Medical vocabulary used in cardiology.

Unit 2: General Pathology

- Definition of health, disease, signs and symptoms.
- Inflammation, infection, immunity and healing.
- Anaemia, thrombosis, haemorrhage and shock.

Unit 3: Cardiovascular Pathology

- Coronary artery disease and myocardial infarction.
- Hypertension and heart failure.
- Arrhythmias and conduction disorders.
- Valvular and congenital heart diseases.

Subject 2: Human Anatomy & Physiology

Unit 1: Basic Anatomy

- Cells, tissues, organs and body systems.
- Anatomical position, planes and directions.

Unit 2: Anatomy of the Heart

- Location, chambers, valves and layers of the heart.
- Coronary circulation and major blood vessels.
- Pericardium and cardiac structures.

Unit 3: Cardiovascular Physiology

- Cardiac cycle and heart sounds.
- Heart rate, pulse and blood pressure.
- Cardiac output and circulation.

Unit 4: Electrical Conduction System

- SA node, AV node, Bundle of His and Purkinje fibres.
- Relationship between cardiac conduction and ECG waveforms.

Subject 3: ECG Instruments & Maintenance

Unit 1: ECG Equipment

- Introduction to ECG machines and their components.
- Display, printer, electrodes, cables and lead wires.
- ECG paper, calibration, gain and paper speed.

Unit 2: ECG Leads

- Standard limb leads.
- Augmented limb leads.
- Chest leads V1–V6.
- Electrode placement and skin preparation.

Unit 3: Equipment Operation

- Machine setup and pre-use inspection.
- Patient cable connections and test recordings.
- Identification of baseline wander, muscle artefacts and electrical interference.

Unit 4: Maintenance and Safety

- Routine cleaning and disinfection.
- Equipment inspection and maintenance records.
- Electrical safety and fault reporting.

Subject 4: Clinical Cardiology

Unit 1: Introduction to Cardiology

- Structure and functions of cardiology departments.
- Role and responsibilities of an ECG technician.
- Clinical teamwork and referral procedures.

Unit 2: Common Cardiac Conditions

- Chest pain, palpitations and breathlessness.
- Hypertension, heart failure and coronary artery disease.
- Myocardial infarction and cardiac arrhythmias.

Unit 3: Basic ECG Interpretation Concepts

- P wave, PR interval, QRS complex, ST segment and T wave.
- Heart rate, rhythm and intervals.
- Introduction to normal sinus rhythm and common abnormalities.

SECOND YEAR (2ND YEAR)

Subject 1: Pharmacology

Unit 1: General Pharmacology

- Definition and classification of drugs.
- Routes of administration and dosage forms.
- Drug absorption, distribution and elimination.
- Adverse drug reactions and medication safety.

Unit 2: Cardiovascular Drugs

- Antihypertensive drugs.
- Antianginal drugs.
- Antiarrhythmic drugs.
- Anticoagulants and antiplatelet medicines.
- Diuretics and medicines used in heart failure.

Unit 3: Drug Safety

- Medication labels and storage.
- Drug allergies and adverse-reaction reporting.
- Effects of selected medicines on heart rate and blood pressure.

Subject 2: Communication Skills in English

Unit 1: Basic Communication

- Greetings, introductions and polite conversation.
- Listening and speaking skills.
- Medical and hospital vocabulary.

Unit 2: Patient Communication

- Explaining ECG procedures in simple English.
- Communicating with patients and attendants.
- Handling anxious patients respectfully.

Unit 3: Reading and Writing

- Reading hospital instructions.
- Writing reports, notices and basic clinical notes.
- Appointment messages and handover communication.

Subject 3: Computer Application

Unit 1: Computer Fundamentals

- Introduction to computer hardware and software.
- Operating systems, files and folders.
- Keyboard and printing operations.

Unit 2: Office Applications

- Word processing and document formatting.
- Spreadsheet entries, tables and basic formulas.
- Presentation preparation.

Unit 3: Healthcare Documentation

- Patient registration and appointment registers.
- ECG record management.
- Report preparation and printing.

Unit 4: Data Security

- Confidentiality of patient records.

- Password safety and secure data handling.
- Backup and authorised access.

Subject 4: General Principles of Hospital Practice and Patient Care

Unit 1: Hospital Organisation

- Hospital departments and their functions.
- Roles of healthcare professionals.
- Patient admission, referral and discharge processes.

Unit 2: Patient Care

- Patient identification and preparation.
- Privacy, dignity and respectful behaviour.
- Positioning and assisting patients during ECG recording.

Unit 3: Infection Prevention

- Hand hygiene and personal protective equipment.
- Cleaning and disinfection of equipment.
- Biomedical waste management according to applicable rules.

Unit 4: Patient Safety

- Recognising urgent symptoms.
- Reporting chest pain, fainting and severe breathlessness.
- Emergency escalation and incident reporting.

Unit 5: Documentation

- Patient records and ECG labelling.
- Confidentiality and professional ethics.
- Communication and clinical handover.