

**STATE COUNCIL OF MEDICAL
SCIENCES ODISHA**



**CERTIFIED ECG TECHNICIAN
(CECGT)**

SYLLABUS OF CERTIFIED ECG TECHNICIAN (CECGT)

This course is of 6 months duration, After 6 months of Theory, Practical & Clinical classes, students have to appear one Final exam at the end to obtain the certificate(CECGT).Final examination will be held at the end of 6th month. To obtain the certificate the student has to secure 50% of the total mark. Theory class attendance of 75% & Practical class attendance of 85% is mandatory to appear the final examination.

EXAMINATION PATTERN:

Theory	-----	40
Clinical& Practical	-----	50
Internal Assessment	-----	10

Total Marks 100

THEORY CLASSES

Sl. No.	TOPIC	Estimated Hrs
	HUMAN ANATOMY & PHYSIOLOGY	
1	Study of General Anatomy and Physiology of Human Body	
2	Anatomy of Circulatory System- <ul style="list-style-type: none"> ➤ Size of the Heart ➤ Position ➤ Coverings ➤ Chambers ➤ Blood Supply ➤ Nerve Supply ➤ The blood Vessels ➤ General Plan of Circulation ➤ Pulmonary Circulation ➤ Name of the arteries& veins ➤ Their position with special emphasis on Coronary Circulation 	
	PHYSIOLOGY OF CARDIOVASCULAR SYSTEM	
3	i) Function of Cardiovascular system. <ul style="list-style-type: none"> ▪ Cardiac cycle, ▪ Functional tissue of heart & their function, ii) Cardiac output, Blood pressure, Heart Rate iii) E.C.G: Basic principle of Electrocardiogram	

ECG (ELECTROCARDIOGRAM)		
4	<ul style="list-style-type: none"> ➤ History of ECG. ➤ Cardiac Electrical Activity ➤ Anatomical orientation of heart ➤ Cardiac cycle, ➤ Cardiac impulse formation & Conduction, ➤ Recording of long axis cardiac electrical activity ➤ Recording short axis cardiac electrical activity. 	
5	<ul style="list-style-type: none"> ➤ Recording the Electrocardiogram, ➤ Evolution of frontal plane leads, ➤ Transverse plane leads, ➤ Correct & Incorrect leads placement, ➤ Electrocardiography leads placement, ➤ Display of 12 standard electrocardiogram leads. 	
6	<ul style="list-style-type: none"> ➤ Interpretation of normal ECG, ➤ Electro- cardio- graphic features, ➤ Rate & regularity, ➤ P wave, PR interval, QRS complex, ➤ ST segment, T wave, U wave, QTC interval, ➤ Cardiac rhythm. 	
7	<ul style="list-style-type: none"> ➤ Interval measurement, ➤ Horizontal measurement, ➤ Vertical measurement, ➤ ECG wave's interval & segments. 	
8	<ul style="list-style-type: none"> ➤ Heart Rate ➤ Introduction, ➤ Measuring of heart rates using caliper. 	
9	<ul style="list-style-type: none"> ➤ Electrical Axis ➤ Determining electrical axis, ➤ Normal axis, ➤ Right Axis Deviation & Left Axis Deviation , ➤ Methods of electrical axis estimation. 	
10	<ul style="list-style-type: none"> ➤ Assessment of arrhythmias, ➤ Supraventricular v/s ventricular rhythms, ➤ Rhythmic Disorders. 	
CARDIAC DISEASES & TERMINOLOGY		
1 1	<ul style="list-style-type: none"> ➤ CAD (Coronary Artery Diseases), ➤ Effects of MI injury & infarction on ECG, ➤ Manifestation of Q wave infarction, ➤ Manifestation of non-Q wave infarction, ➤ Anterior infarction ➤ Antero-Lateral infarction, ➤ Inferior infarction 	

12	<ul style="list-style-type: none"> ➤ Enlargement of chambers & Hypertrophy, Conduction defect, ➤ AV block First degree, ➤ AV block second degree, ➤ AV block third degree, ➤ AV block bundle, ➤ Branch Block, ➤ RBBB, LBBB ➤ Chamber Enlargement: <ul style="list-style-type: none"> i. Right Atrial Enlargement ii. Left Atrial Enlargement ➤ Hypertrophy <ul style="list-style-type: none"> i. Right ventricular hypertrophy ii. Left ventricular hypertrophy iii. Biventricular hypertrophy. 	
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PRACTICALS

Sl. No	Clinical Cardiology	Estimated Hrs
1	<ul style="list-style-type: none"> i. Basic Principles of instruments, ii. Recording the electro cardiogram, iii. Correct & incorrect lead placement. iv. Chest leads, Limb leads, v. Display of 12 standard lead ECG, vi. Recognition & interrelation of ECG Equipment, vii. Usage (Pediatrics/Adults.) 	
2	<ul style="list-style-type: none"> ➤ Indication, Contraindication, ➤ Repair & maintenance (operations, calibrations servicing) ECG Monitoring in ICCU patient, ➤ Recording of holter/stress ECG, ➤ Ambulatory BP. ➤ Temporary- pace-maker/ permanent pace maker, ➤ Coronary Angiography, ➤ Coronary Angio Plasty, ➤ Balloon Plasty, ➤ Cardiac Resynchronisation Therapy, ➤ Cardiac Resynchronisation Therapy with Dfibrillator. 	

Theory – 250 Hrs.

Practical / Clinical – 350 Hrs.

Total – 600 Hrs. of classes

At the end of 6th month final exam will be held. A candidate has to secure 50% to get the certificate of (CEMGT)

Distribution of Marks

Theory – 40

Clinical / Practical – 50

Internal Assessment – 10

Total – 100

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