

## Operation of Clinical Equipment (Level 1)

<b>Name of the Module</b>	: <b>Operation of Clinical Equipment (Level 1)</b>
<b>Sector</b>	: <b>Electronics</b>
<b>Code</b>	: <b>ELC112</b>
<b>Duration</b>	: <b>180 Hrs</b>
<b>Entry qualification</b>	: <b>8<sup>th</sup> std pass with age at least 14 years. Should be able to read and write English.</b>
<b>Terminal competency</b>	: <b>Should be able to “operate the clinical Instruments”</b>

### **Contents**

<b>Practical Competencies</b>	<b>Underpinning Knowledge (Theory)</b>
<ol style="list-style-type: none"> <li>1. Practice procedures for safety and health hazards measures</li> <li>2. Identify and Operate centrifuges, incubator, colorimeter, spectrophotometer, flame photometer, gamma Counter, Microscope.</li> <li>3. Perform calibration on centrifuge</li> <li>4. Perform preventive maintenance on centrifuges, incubator, colorimeter, spectrophotometer, flame photometer, gamma Counter, Microscope.</li> </ol>	<ul style="list-style-type: none"> <li>• Safety and security, health hazards</li> <li>• List out various instruments in clinical laboratory,</li> <li>• Hot plate and magnetic stirrer – operating procedure, care important specification</li> <li>• Centrifuges – construction, working principle, use, care rpm calibration, timer calibration, thermometer calibration, preventive maintenance, selection of centrifuge, various types of centrifuges.</li> <li>• Hot air oven – use, operating procedure, construction procedure, use, care, important specification</li> <li>• Incubator – use, construction, care.</li> <li>• Temperature bath: - use, construction, care.</li> <li>• Body fluids- blood, urine, CSF &amp; other body fluids</li> <li>• Colorimetry and photometry – define:               <ul style="list-style-type: none"> <li>- light wave, wavelength, unit of wavelength, monochromator, light source, cuvette, photodetector, coloured solution</li> </ul> </li> <li>• Colorimeter – use, construction, front panel controls, operating procedure, care, important specification</li> <li>• Spectrophotometer - use, construction, front panel controls, operating procedure, care, important specification</li> <li>• Flame photometer - use, construction, front panel controls,</li> </ul>

Practical Competencies	Underpinning Knowledge (Theory)
	<p>operating procedure, care, important specification</p> <ul style="list-style-type: none"> <li>• Gamma counter - use, construction, front panel controls, operating procedure, care, important specification</li> <li>• Use of pH strip</li> <li>• Microscope with oil immersion - use, construction, operating procedure, care and maintenance, important specification</li> <li>• Glucometer - use, construction, accessories, front panel controls, operating procedure, care and maintenance, important specification</li> <li>• Semi auto analyzer - use, construction, accessories, front panel controls, operating procedure, care and maintenance, important specification</li> </ul>

***List of Equipment:***

1. Hot plate and magnetic stirrer
2. Centrifuge
3. Hot air oven
4. Incubator
5. Constant temperature bath
6. Colorimeter
7. Spectrophotometer
8. Flame photometer
9. Gamma counter
10. Microscope with oil immersion
11. Glucometer
12. Stop watch
13. Semi-auto analyzer