

**Model Curriculum**

**NSQF Qualification File – Repair & Maintenance Assistant  
(Dental Equipment)**

## Section 1:

S. No	Module Title	Topics	Duration (Hours)		Learning Outcome
			Theory	Lab	
1.	a. Tools b. DC & AC Electricity c. Test & Measuring instruments	<ul style="list-style-type: none"> <li>Tools &amp; aids for servicing &amp; maintenance, Hard &amp; soft tools</li> <li>Fundamentals ,concept of voltage ,current ,power ,AC waveform</li> <li>Use of Multimeter, Cathode Ray Oscilloscope, Logic Analyser, Signal generator, LCR meters.</li> </ul>	5	5	After successful completion of the module, the students shall be able to: <ul style="list-style-type: none"> <li>Understand Voltage and current waveforms.</li> <li>Use of Multimeters, CRO.</li> </ul>
2.	Passive components	<ul style="list-style-type: none"> <li>Resistance, value Calculation, different types of resistance, working and testing.</li> <li>Capacitors, value Calculation, different types of capacitors, working and testing.</li> <li>Inductors, magnetic materials, self &amp; mutual inductance, Transformers - Step Up &amp; Down.</li> </ul>	10	10	After successful completion of the module, the students shall be able to: <ul style="list-style-type: none"> <li>Identify and calculate values, use passive component.</li> <li>Idea about magnetism, transformer and its use.</li> </ul>
3.	Active Components	<ul style="list-style-type: none"> <li>Semiconductor theory, testing, working, use and identification various active components, linear and digital ICs.</li> </ul>	15	10	After successful completion of the module, the students shall be able to: <ul style="list-style-type: none"> <li>Identify, test and use various active components.</li> </ul>
4.	Soldering and Desoldering	<ul style="list-style-type: none"> <li>Soldering, Desoldering Techniques. Theory and practice.</li> </ul>	10	20	After successful completion of the module, the students shall be able to:

					<ul style="list-style-type: none"> <li>Perfectly Solder and Desolder on PCB's</li> </ul>
5.	Dental Chairs	<ul style="list-style-type: none"> <li>Parts of a dental chair, Up/down motion, front and back motions, hydraulic system, Light System, X-Ray viewer, foot rest, compressor etc.</li> </ul>	10	20	<p>After successful completion of the module, the students shall be able to:</p> <ul style="list-style-type: none"> <li>Operate Dental Chair successfully.</li> </ul>
6.	Study of Dental Chair functions	<ul style="list-style-type: none"> <li>Study of all associated parts in dental chair.</li> <li>Electronic circuit controls</li> <li>Study of electronic circuits.</li> </ul>	30	40	<p>After successful completion of the module, the students shall be able to:</p> <ul style="list-style-type: none"> <li>Understand different sections of dental chair and its electronic circuits and its maintenance.</li> </ul>
7.	Dental X Ray	<ul style="list-style-type: none"> <li>Basic theory of X Rays , X Ray tube, control circuit.</li> <li>Various controls i.e. exposure time control, KV control. Specifications for dental X Ray Unit.</li> </ul>	20	10	<p>After successful completion of the module, the students shall be able to:</p> <ul style="list-style-type: none"> <li>Use dental X-ray unit and its maintenance.</li> </ul>
8.	The Ultrasonic Scalar	<ul style="list-style-type: none"> <li>Theory of ultrasonic waves, working, different controls and use on patients for removal of plaque on teeth., Internal circuit of ultrasonic scalar system.The scalar hand piece.</li> </ul>	20	10	<p>After successful completion of the module, the students shall be able to:</p> <ul style="list-style-type: none"> <li>Use Ultrasonic Scalar and its maintenance.</li> </ul>
9.	Troubleshooting	<ul style="list-style-type: none"> <li>Troubleshooting Skills, Safety &amp; Security Procedures</li> </ul>	10	25	<p>After successful completion of the module, the students shall be able to:</p>

					<ul style="list-style-type: none"> <li>• Repair, maintain and use dental chair along with its associated peripherals.</li> </ul>
10.	Total		120	150	
11.	Employability Skills	<ul style="list-style-type: none"> <li>• Introduction to Employability Skills</li> <li>• Career Development &amp; Goal Setting</li> <li>• Becoming a Professional in the 21st Century</li> <li>• Basic English Skills</li> <li>• Communication Skills</li> <li>• Financial and Legal Literacy</li> <li>• Entrepreneurship</li> <li>• Diversity &amp; Inclusion</li> <li>• Constitutional values - Citizenship</li> <li>• Essential Digital Skill</li> </ul>	30		
12.	On Job Training		30		

**Total Course Theory / Lecture Hours: 120 Hours**

**Total Course Practical / Tutorial Hours / Internship: 150 Hours**

**Employability Skills: 30 Hours**

**On Job Training: 30 Hours**

**Total Course Hours: 330**

**Section 2: List of Equipment**

<b>Description</b>		<b>Qty</b>	<b>Specifications</b>
1	Classroom	1	30 Sq M
2	Student Chair	20	
3	Student Table	20	
6	Dental Chair (complete set-up)	1	
7	Soldering and de-soldering station	4	
8	White Board	1	
9	Electronic components and tools	As per requirement	Resistance, Capacitors, Transistors, Diodes, Linear and Digital IC's, PCB's, Soldering material, Screw Driver sets, pliers, Cutters, wires, equipments for repair
10	Multimeters	4	
11	Power supply	4	

**Section 3: Trainer's profile**

Batch Size: 20 students

No of Trainers: 1

No of demonstrators: 1

Education Qualification	<p>Engineer / Diploma in Mechanical Engineering /10+2 with science</p> <ul style="list-style-type: none"> <li>● Preferably having experience in working and maintenance with Dental Chairs.</li> </ul>
Experience	<ul style="list-style-type: none"> <li>● Minimum 6 Months experience in working and maintenance with Dental Chairs.</li> </ul>
Technical Skills	<ul style="list-style-type: none"> <li>● Good understanding of Electronics</li> </ul>
Other Skills	<ul style="list-style-type: none"> <li>● Should be able to communicate well in English</li> <li>● Good command on regional language</li> <li>● Should be able to prepare lesson plan, deliver the courses through the specified media as per schedule</li> <li>● Should be able to inspire the trainees &amp; evaluate and assess the trainees</li> <li>● Should be able to monitor progress and give feedback to trainees</li> <li>● Should be able to maintain MIS related to training</li> </ul>