

<b>COURSE MODULE</b>			
<b>Course No. CE 38: Special Course on 09 CSM, 09-3X &amp; 09-3X Dynamic</b>			
<b>Duration:1Week</b>		<b>Effective Days:06</b>	
<b>CM No.</b>	<b>Subjects wise Contents</b>	<b>Periods</b>	<b>Total Periods</b>
<b>38.1</b>	<b>Electrical &amp; Electronics:</b>		<b>10</b>
	Engine & ZF circuit and Troubleshooting.	2	
	Power Supply PCBs EK813SV, EK816SV, EK851SV, Calibration & Troubleshooting, Programmer Unit, Logic Plan, Multicheck system	2	
	Tamping Unit Control Circuit, Depth selector, Transducers, PCBs, Calibration, Testing & Troubleshooting	2	
	Lining & Levelling Control Circuit, Input Potentiometer, PCBs, Calibration & Troubleshooting.	2	
	Satellite Control Circuit, Work Drive Control Circuit, Transducer, Encoder, PCBs, Calibration and Troubleshooting	2	
<b>38.2</b>	<b>Hydraulics, Pneumatics &amp; Mechanical:</b>		<b>8</b>
	Vane pump, Axial Piston pump, Relief valve, Unloader valve & Troubleshooting	1	
	Spring Centered valve, Spring Offset valve, Check valve, POC Valve, Proportional valve, Servo valve & Troubleshooting	2	
	Hydraulic Circuits: Constant pressure circuit, Close loop circuit & Regenerating circuit of 09-3X	1	
	Hydraulic Circuits: Constant pressure circuit, Close loop circuit & Regenerating circuit of 3X Dynamic	1	
	Air compressor, Safety valve, Water separator, Air Oiler, Air dryer, Working circuit, Brake circuit.	2	
	ZF & other Gear Boxes / related Assemblies - Maintenance aspects & Troubleshooting	1	
<b>38.3</b>	<b>I.C. Engine:</b> Construction, Working Principle, Main Systems. Maintenance Schedule/Steps& Troubleshooting.	2	<b>2</b>
<b>38.4</b>	<b>Track Machines &amp; Working Principles:</b>		<b>6</b>
	Operation & Main Assemblies of CSM, Working Principles including Design Mode.	2	
	Operation & Main Assemblies of 09- 3X., Working Principles including Design Mode	2	
	Operation & Main Assemblies of 09-3X Dynamic, Working Principles including Design Mode.	2	
<b>38.5</b>	<b>Computer:</b>		<b>6</b>
	Introduction to Automatic Guide Computer (ALC) Hardware & WinALC Software, Working in Geometry, Measuring Run & Design Mode.	2	
	Hands on training on calculating Vm values in 4-point lining and Versine,. X and K values for 3 point lining and Levelling using OEM'S manual	2	
	Hands On training on using ALC measuring run data to computing best curve. Also making data file for known Track Geometry and Front Offset's.	2	
<b>38.6</b>	<b>Introduction and Valediction</b>	2	<b>2</b>
	<b>Total</b>	<b>34</b>	<b>34</b>

**Note: 1. Eligibility: SSE/JE and Technicians**