



CONVERSION GUIDELINES FOR FITTER AND TURNER TRADE THEORY FROM NATED (N) COURSES TO UNIT STANDARDS (US)

The purpose of this skills programme is for the successful learner to gain access to the relevant trade test and not to gain credits or part of credits as only relevant specific outcomes addressing the theory part are to be achieved

LEARNING ACTIVITIES	UNIT STANDARD TITLE	MATERIAL AVAILABLE	UNIT STANDARD ID	THEORY	
				SPECIFIC OUTCOME NUMBER	LEARNING ACTIVITIES
Explain occupational safety in accordance with Fitting and Machining Theory N2.	Keep the work area safe and productive	Yes	13220	SO 1	Discuss and explain the purpose of safety equipment and procedures
	Perform basic fire fighting	Yes	12484	SO 1	Identify and explain the purpose of demarcated areas, emergency stops, exits and first aid stations
	Perform basic first aid	Yes	12483	SO 1	Discuss and explain procedures for dealing with fires in the workplace
Explain couplings in accordance with Fitting and machining Theory N2	Maintain static seals in machines and / or equipment	Yes	13219	S O 1,2,3	Plan and prepare for seal replacement, Static

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Review: Learning Programme Manager		Approved: CEO	

					seal is maintained, Prepare site and equipment for seal replacement.
	Maintain direct drives	Yes	13280	SO 1,2	Plan and prepare for direct drive maintenance. Prepare site and equipment for direct drive maintenance.
	Maintain brakes and clutches	Yes	13282	SO 9	Discuss and explain incidents and problems related to direct drive maintenance.
Explain limits and fits in accordance with Fitting and Machining Theory N2.	Select, use and care for engineering measuring equipment	Yes	12476	SO 9	Discuss and explain incidents and problems related to brake and clutch maintenance.
	Read, interpret and produce basic engineering drawings	No	12215	SO 1	Explain and discuss basic units of measure and symbols
	Produce detailed engineering drawings	Yes	13298	SO 1	Discuss and explain basic engineering drawing concepts and material lists
	Mark off basic regular engineering shapes	No	9881	SO 2	Perform calculations to produce drawing
Explain bearings in accordance with Fitting and Machining Theory N2.	Identify engineering materials, their characteristics and applications and common metal tests used in engineering	Yes	12477	SO 1,2	Identify materials used in common engineering applications. Qualifying learners can identify the types, properties and common applications of ferrous and non-ferrous metals and demonstrate an understanding of common testing and treatment procedures. Discuss the physical properties of engineering materials used in common engineering applications.
	Maintain bearings in machines and equipment	Yes	13283	SO 2	Discuss the physical properties of engineering materials used in common engineering applications
Explain lubrication in accordance with Fitting and Machining Theory N2.	Perform routine maintenance	Yes	13221	SO 8	Discuss and explain incidents and problems related to bearing replacement
	Maintain lubricating systems	Yes	13277	SO 7	Discuss and explain incidents and problems related to performing routine maintenance

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Explain valves in accordance with Fitting and Machining Theory N2.	Maintain pipe systems and pipe components	Yes	253517	SO 7	Discuss and explain incidents and problems related to maintain the lubrication system
	Maintain safety valves	Yes	13326	SO 7	Discuss and explain incidents and problems related to pipe system maintenance
Explain packing, stuffing boxes and joints in accordance with Fitting and Machining Theory N2.	Maintain static seals in machines and / or equipment	Yes	13219	SO 8	Discuss and explain incidents and problems related to safety valve maintenance
Explain water pipe systems in accordance with Fitting and Machining Theory N2.	Maintain pipe systems and pipe components	Yes	253577	SO 1	Plan and prepare for pipe system maintenance,
Explain pumps in accordance with Fitting and Machining Theory N2	Maintain pumps	Yes	13276	SO 1	Identify and discuss the applications of positive displacement pumps
Explain compressors in accordance with Fitting and Machining Theory N2.	Maintain compressors	Yes	13323	SO 1, 4	Plan and prepare for compressor maintenance; Check compressor for compliance with operational requirements. Determine faults, assess requirements for repair and remove, replace and set up compressors.
Explain V-belt drives in accordance with Fitting and Machining Theory N2	Maintain indirect drives	Yes	13216	SO 1	Plan and prepare for indirect drive maintenance.
Explain gear drives in accordance with Fitting and Machining Theory N2.	Maintain direct drives	Yes	13280	SO 1,2	Perform routine maintenance on direct drives to ensure operational integrity. This will include monitoring, repairing and alignment of direct drives. They will understand the importance of maintaining direct drives and how this is achieved. Plan and prepare for direct drive maintenance, Prepare site and equipment for direct drive maintenance.
Explain chain drives in accordance with Fitting and Machining Theory N2	Maintain indirect drives	Yes	13216	SO 1	Plan and prepare for indirect drive maintenance. Understanding the importance of maintenance of indirect drives and how it is achieved. This will include a basic knowledge of drive systems, repairing indirect drive components, alignment of the drive and the use

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					of tools and equipment to maintain indirect drives.
Explain reduction gearboxes in accordance with Fitting and Machining Theory N2.	Maintain gearboxes	Yes	13325	SO 8	Discuss and explain incidents and problems related to gearbox maintenance
Explain hydraulics and pneumatics in accordance with Fitting and Machining Theory N2.	Maintain fluid power / pneumatic systems	Yes	13321	SO 8	Discuss and explain incidents and problems related to system maintenance
Explain milling machines in accordance with Fitting and Machining Theory N2	Operate and monitor a milling machine	Yes	258678	EEK	
	Operate and monitor a drilling machine to produce simple components	Yes	13214	EEK	
	Produce components by performing milling operations	Yes	258718	EEK	Be able to carry out milling machining operations with a range of accessories and tools
	Grind tools and drill bits	Yes	13297	EEK	Able to carry out grinding operations to make and sharpen tools
	Conduct advanced milling operations and methods	Yes	258680	EEK	
Explain the centre lathe in accordance with Fitting and Machining Theory N2.					Briefly describe the advantages of using mandrels and give examples of when they would be used; Explain why different clearance angles are necessary on different lathe cutting tools
	Operate and monitor a lathe	Yes	258679	EEK	
	Produce components by performing turning operations	Yes	25817	SO 2	Set lathe,
	Grind tools and drill bits	Yes	13297	EEK	
	Produce complex components using lathes	Yes	13314	EEK	

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<p>Explain surface grinding machines in accordance with Fitting and Machining Theory N2.</p>	<p>Operate and monitor a surface grinding machine</p>	<p>Yes</p>	<p>258695</p>	<p>U/S EEK</p>	<p>Briefly describe the advantages of using mandrels and give examples of when they would be used.</p> <p>Explain why different clearance angles are necessary on different lathe cutting tools</p> <p>Describe the following uses of a fixed and travelling steady with practical applications, where necessary, when:</p> <ul style="list-style-type: none"> ✚ Supporting long work-pieces on a centre lathe ✚ Turning a long small-diameter shaft on a centre lathe. ✚ Supporting a square bar on a centre lathe.
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