Australian Government

MSFPT3008 Apply piano tuning theory and basic acoustics

Release: 1

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Modification History

Release 1 - New unit of competency

Application

This unit of competency covers applying piano tuning theory and basic acoustics and identifying the important relationship between them when a piano is tuned.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

Competency Field

Unit Sector

Piano Technology

Elements and Performance Criteria

Elements describe the essential outcomes.		Performance criteria describe the performance needed to demonstrate achievement of the element.	
1	Apply knowledge of basic acoustics	1.1	Elements of basic acoustics are applied to piano tuning, as required
		1.2	Acoustical laws of sounding strings are applied to piano tuning, as required
2	Apply knowledge of piano tuning	2.1	Elements of piano tuning theory are applied to piano tuning, as required
		2.2	Effect of inharmonicity on piano tuning is applied to piano tuning, as required
3	Apply knowledge of musical scales	3.1	Elements of musical scale theory are applied to piano tuning, as required
		3.2	The behaviour of piano strings and their proper dimensions are applied to piano tuning, as required
		3.3	The laws of strings are applied to piano tuning, as required

3.4 Musical scales are applied to piano tuning, as required

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency. Detail on appropriate performance levels for each furnishing unit of competency in reading, writing, oral communication and numeracy utilising the Australian Core Skills Framework (ACSF) are provided in the Furnishing Training Package Implementation Guide.

Range of Conditions

Specifies different work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included. Range is restricted to essential operating conditions and any other variables essential to the work environment.

Unit context includes:

- work health and safety (WHS) requirements, including legislation, building codes, material safety management systems, hazardous and dangerous goods, codes and local safe operating procedures or equivalent
- work is carried out in accordance with legislative obligations, environmental legislation, relevant health regulations, manual handling procedures and organisation insurance requirements
- work requires individuals to demonstrate some discretion, judgement and problem solving

Basic acoustics include:

- sound waves
- beats
- frequencies
- harmonics
- cycles
- partials
- overtones
- nodes
- fundamentals
- sine waves
- intonation
- transients
- cents
- commas
- compound tones

Piano tuning theory includes:	• inharmonicity • how wire vibrates • what happens when two or more wires vibrate simultaneously • how vibrations are organised into a tuning scale • how vibrations are related mathematically • pitch, beat rates, intervals and octave stretching
Musical scale theory includes:	• diatonic scale • equal temperament • mean-tone
Laws of strings include:	• First law • Third law • Combined law • Taylor's Formula • need for wrapped strings

Unit Mapping Information

Supersedes and is equivalent to LMFPT3008A Understand piano tuning theory and basic acoustics.

Links

Companion Volume implementation guides are found in VETNet - https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=0601ab95-583a-4e93-b2d4-cfb27b03ed73