Apprenticeship Manitoba

Level Chart: Steamfitter-Pipefitter - Technical Training

Level One (9 weeks)				Level Two (9 weeks)			
Code	**Unit Title**	**T**	**P**	**Code**	**Unit Title**	**T**	**P**
A1	SAFETY AND ORIENTATION	25	0	B1	TOOLS AND EQUIPMENT II	14	0
A2	TOOLS AND EQUIPMENT	15	0	B2	FABRICATION II	60	41
A3	RIGGING, HOISTING AND LIFTING	12	0	B3	LAYOUT II	30	0
A4	LAYOUT	45	0	B4	HYDRONIC SYSTEMS	61	20
A5	FABRICATION I	16	80	B5	HEAT TRACING SYSTEMS (INCLUDES LIQUID)	23	11
A6	VALVES	7	0	B6	MATHEMATICS II	20	0
A7	MATHEMATICS I	20	0	B7	SCIENCE II	15	0
A8	SCIENCE I	20	0	B8	ELECTRICAL II	20	0
A9	ELECTRICAL I	25	0				
A10	DRAWINGS AND BLUEPRINTS	30					
A11	GAS CODE I	20					
	Subtotals	235	80		Subtotals	243	72
	Total	315 Hours			Total	315 Hours	

Level Three (9 Weeks)				Level Four (8 Weeks)			
Code	**Unit Title**	**T**	**P**	**Code**	**Unit Title**	**T**	**P**
C1	STEAM SYSTEMS	97	39	D1	COMPLEX RIGGING	7	7
C2	INDUSTRIAL WATER TREATMENT EQUIPMENT	35	0	D2	PROCESS PIPING	22	0
C3	HYDRONIC SYSTEMS (includes controls	7	0	D3	HYDRAULIC SYSTEMS	9	6
C4	HEAT TRACING SYSTEMS (includes steam)	25	15	D4	AIR AND PNEUMATIC SYSTEMS	7	5
C5	FUEL SYSTEMS	7	0	D5	STEAM SYSTEMS (includes Pressure/High Pressure)	18	0
C6	MEDICAL GAS	10	5	D6	HVACR	17	0
C7	MATHEMATICS III	20	0	D7	HEAT RECOVERY SYSTEMS	6	0
C8	ELECTRICAL CONTROLS AND DIAGRAMS FOR PUMPS AND HYDRONICS	20	10	D8	GEOTHERMAL SYSTEMS AND SOLAR HEATING SYSTEMS	14	0
C9	GAS CODE II	20	5	D9	COMMISSIONS SYSTEM	17	0
				D10	JOURNEYPERSON TRAINER	3	0
				D11	NATIONAL REQUIREMENTS REVIEW	35	13
				D12	MATHEMATICS IV REVIEW	20	0
				D13	SCIENCE IV REVIEW	20	0
				D14	ELECTRICAL IV	20	7
				D15	GAS CODE III	20	7
	Subtotals	241	74		Subtotals	235	45
	Total	315 Hours			Total	280 Hours	

Note: All Unit content titles comprise common core training throughout Canada. A grade will be recorded for the Unit in its entirety. A Pass mark is considered to be 70% as measured by 70 percent or more correct on the cumulative scores achieved by learner-apprentices on all Subunits.

A more detailed Level Chart with Subunit Outlines follows on the next page.

Manitoba

Apprenticeship Manitoba

Detailed Level Chart: Steamfitter-Pipefitter - Technical Training

Note: Each subunit requires 70% pass

Level One (9 weeks)				Level Two (9 weeks)			
Code	**Unit Title**	**T**	**P**	**Code**	**Unit Title**	**T**	**P**
A1	**SAFETY ORIENTATION**			**B1**	**TOOLS AND EQUIPMENT II**		
A1a	Trade Safety Awareness	6	0	B1a	Tools and Equipment II	7	0
A1b	Learning about Work	5	0	B1b	Advanced Hoisting, Lifting and Rigging	7	0
A1c	Communications and Trade Communication	14	0	**B2**	**FABRICATION**		
A2	**TOOLS AND EQUIPMENT**			B2a	Spool and Fitting Fabrication	8	14
A2a	Tools and Equipment	10	0	B2b	Stainless Steel Piping	8	7
A2b	Access Equipment	5	0	B2c	Specialty Piping	24	
A3	**RIGGING, HOISTING AND LIFTING**			B2d	Industrial Drawings I	15	
A3a	Rigging, Hoisting and Lifting	12	0	B2e	GTAW Welding	5	20
A4	**LAYOUT**			**B3**	**LAYOUT II**		
A4a	Pipe, Tube and Tubing, Fundamentals Theory I	11	0	B3a	Industrial Drawings II	15	0
A4b	Copper, Tube and Tubing Theory	10	0	B3b	Template Development	15	0
A4c	Plastic Piping Theory	5	0	**B4**	**HYDRONIC SYSTEMS**		
A4d	Black Iron Piping Theory	20	0	B4a	Hydronic Systems	40	16
A5	**FABRICATION**			B4b	Hydronic System Controls	14	4
A5a	Pipe, Tube and Tubing, Fundamentals Theory II	11	0	B4c	Cross Connection Controls Awareness	7	0
A5b	Copper, Tube and Tubing Practical	0	18	**B5**	**HEAT TRACING SYSTEMS (INCLUDES LIQUID)**		
A5c	Plastic Piping Practical	0	7	B5a	Hydronic Heat Trace Systems	16	9
A5d	Black Iron Piping Practical	0	35	B5b	Hydronic Heat Trace System Controls	7	2
A5e	Introduction to Welding, Arc Welding and Cutting	5	20	**B6**	**MATHEMATICS II**		
A6	**VALVES**			B6a	Mathematics II	20	0
A6a	Piping Valves	7	0	**B7**	**SCIENCE II**		
A7	**MATHEMATICS I**			B7a	Science II	15	0
A7a	Mathematics I	20	0	**B8**	**ELECTRICAL II**		
A8	**SCIENCE I**			B8a	Electrical II	20	0
A8a	Science I	20	0				
A9	**ELECTRICAL**						
A9a	Intro to Basic Electricity	25	0				
A10	**DRAWINGS AND BLUEPRINTS**						
A10a	Drawings	15	0				
A10b	Blueprints	15	0				
A11	**GAS CODE I**						
A11a	Gas Code I	20	0				
	Subtotals	**235**	**80**		**Subtotals**	**243**	**72**
	Total	**315 Hours**			**Total**	**315 Hours**	

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Detailed Level Chart: Steamfitter-Pipefitter - Technical Training

Level Three (9 Weeks)				Level Four (8 Weeks)			
Code	**Unit Title**	**T**	**P**	**Code**	**Unit Title**	**T**	**P**
C1	**STEAM SYSTEMS**			**D1**	**COMPLEX RIGGING**		
C1a	Low Pressure Steam Systems	23	11	D1a	Fundamentals of Complex Rigging	7	7
C1b	High Pressure Steam Systems	44	21	**D2**	**PROCESS PIPING**		
C1c	Condensate Return Systems	30	7	D2a	Process Piping Systems	20	0
C2	**INDUSTRIAL WATER TREATMENT EQUIPMENT**			D2b	System Testing and Commissioning I	2	0
C2a	Process Piping Systems	35	0				
C3	**HYDRONIC SYSTEMS (includes controls**			**D3**	**HYDRAULIC SYSTEMS**		
C3a	Hydronic Controls	7	0	D3a	Hydraulic Systems	7	6
C4	**HEAT TRACING SYSTEMS (includes steam)**			D3b	System Testing and Commissioning II	2	0
C4a	Low Pressure Steam Heat Tracing	20	6	**D4**	**AIR AND PNEUMATIC SYSTEMS**		
C4b	High Pressure Steam Heat Tracing	5	9	D4a	Compressed Air Systems	5	5
C5	**FUEL SYSTEMS**			D4b	System Testing and Commissioning III	2	0
C5a	Fuel Systems	7	0	**D5**	**STEAM SYSTEMS (includes Pressure/High Pressure)**		
C6	**MEDICAL GAS**			D5a	Intermediate Steam Review	16	0
C6a	Medical Gas and Gas Piping Systems	10	5	**D5b**	System Testing and Commissioning IV	2	0
C7	**MATHEMATICS III**			**D6**	**HVACR**		
C7a	Mathematics III	20	0	D6a	Refrigeration Systems	15	0
				D6b	System Testing and Commissioning V	2	0
C8	**ELECTRICAL CONTROLS AND DIAGRAMS FOR PUMPS AND HYDRONICS**			**D7**	**HEAT RECOVERY SYSTEMS**		
C8a	Electrical Controls and Diagrams For Pumps and Hydronics	20	10	D7a	Heat Recovery Systems	4	0
C9	**GAS CODE II**			D7b	System Testing and Commissioning VI	2	0
C9a	**Gas Code II**	**20**	**5**	**D8**	**GEOTHERMAL SYSTEMS AND SOLAR HEATING SYSTEMS**		
				D8a	Geothermal Systems and Solar Heating Systems	12	0
				D8b	System Testing and Commissioning VII	2	0
				D9	**COMMISSIONS SYSTEM**		
				D9a	Quality Control	7	0
				D9b	Job Planning	10	0
				D10	**JOURNEYPERSON TRAINER**		
				D10a	Journeyperson Trainer	3	0
				D11	**NATIONAL REQUIREMENTS REVIEW**		
				D11a	National Requirements Review	35	13
				D12	**MATHEMATICS IV REVIEW**		
				D12a	Mathematics IV Review	20	0
				D13	**SCIENCE IV REVIEW**		
				D13a	Science IV Review	20	0
				D14	**ELECTRICAL IV**		
				D14a	Electrical IV	20	7
				D15	**GAS CODE III**		
				D15a	Gas Code III	20	7
	Subtotals	**241**	**74**		**Subtotals**	**235**	**45**
	Total	**315 Hours**			**Total**	**280 Hours**	

Note: All Unit content titles comprise common core training throughout Canada. Unit content is supplemented throughout technical training by trade-specific Subunit information that is presented in appropriate contexts of discussion and study. A grade will be recorded for the Unit in its entirety. A Pass mark is considered to be 70% as measured by 70 percent or more correct on the cumulative scores achieved by learner-apprentices on all Subunits. Every Subunit of the larger Unit Title (in blue or bold lettering) requires a 70% pass mark.

Trade related Math, Science and Electrical Theory/Safety are integral to the Steamfitter-Pipefitter trade. Components that inform such training are the Units of Instruction that provide in context discussion and study.

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