

Masonry



Program / Hours: CIP 46.0101 – 2 Year Half Day Program

Course Description: A program that prepares individuals to apply technical knowledge and skills in the laying and/or setting of exterior brick, concrete block, hard tile, marble and related materials using trowels, levels, hammers, chisels and other hand tools. Includes instruction in technical mathematics, blueprint reading, structural masonry, decorative masonry, foundations, reinforcement, mortar preparations, cutting and finishing, and applicable codes and standards.

Learning Activities / Modes of Assessment:

- Small Group
- Large Group
- Independent Work
- One-on-One
- Classwork Activities
- Research Projects
- Research Papers
- Tests and Quizzes
- Project Assessment

Individual Resources:

- Textbooks
- Workbooks
- Online Resources
- PowerPoint Presentations
- Computer Applications
- Masonry Equipment and Tools
- Masonry Lab Simulations

Year / MP	Task #	K - Know	U - Understand	D - Do
Level 1 MP1	101	Tool names and types	How tool selection affects quality and safety	Identify and safely use masonry hand tools
Level 1 MP1	201	PPE types and uses	Why PPE is essential for masonry safety	Select and wear appropriate PPE for tasks
Level 1 MP1	202	Tool care procedures	How proper maintenance extends tool life	Clean and store tools after use
Level 1 MP1	203	Mortar mixer components	How to operate and maintain a mortar mixer	Mix mortar using proper procedures
Level 2 MP1	204	Scaffolding guidelines	How to safely erect and dismantle scaffolding	Assemble and disassemble scaffolding per OSHA
Level 2 MP1	205	Material placement	How to stock scaffolding safely	Place materials securely on scaffolding
Level 1 MP1	206	SDS terminology	How to interpret safety data sheets	Read and follow SDS instructions
Level 2 MP3	301	Blueprint types	How different plans are used in masonry	Identify and describe blueprint plans
Level 2 MP3	302	Blueprint symbols	How to interpret masonry drawings	Read and follow blueprint layouts
Level 1 MP2	401	Modular ruler use	How to measure accurately in masonry	Use spacing rulers for layout
Level 2 MP2	402	Corner pole setup	How guides assist in wall alignment	Mark and use masonry guide poles
Level 1 MP2	403	Line setup tools	How to secure mason's line properly	Attach line to blocks and stretchers
Level 1 MP2	404	Trig setup	How trigs help maintain wall level	Set and adjust trigs correctly
Level 1 MP2	405	Cutting tools	How to safely cut masonry units	Use hammer and chisel to cut brick/block
Level 1 MP2	407	Joint finishing tools	How jointers affect mortar joints	Finish joints with appropriate jointers
Level 1 MP2	408	Saw blade types	How blade selection affects cutting	Identify and select masonry saw blades
Level 2 MP4	501	Transit use	How to lay out buildings accurately	Use transit to establish building layout
Level 2 MP4	502	Squaring methods	How to apply the 3-4-5 rule	Square layout using Pythagorean Theorem
Level 2 MP5	601	Gas saw operation	How to safely use cut-off saws	Operate masonry gas cut-off saw
Level 1 MP3	602	Mortar mixer operation	How to mix mortar mechanically	Operate mortar mixer safely
Level 2 MP5	603	Saw operation	How to cut masonry units	Operate stationary or portable saws
Level 1 MP3	604	Hammer drill use	How drills assist in fastening	Operate hammer drill for masonry tasks

Level 2 MP6	701	Fastener types	How reinforcements improve stability	Install masonry fasteners and reinforcements
Level 1 MP4	801	Brick types and bonds	How bonds affect wall strength	Identify and describe brick bonds
Level 1 MP4	802	Dry bond layout	How to plan brick courses	Lay out dry bond for brick wall
Level 1 MP4	803	Brick laying techniques	How to maintain alignment	Lay brick to the line
Level 2 MP4	804	Opening installation	How to frame windows and doors	Install jambs in brick walls
Level 2 MP4	805	Flashing methods	How flashing prevents water intrusion	Install flashing for openings
Level 2 MP4	806	Vent systems	How weep holes aid drainage	Install weep holes and vents
Level 2 MP4	808	Soldier course layout	How decorative courses are used	Install soldier course in wall
Level 2 MP4	809	Composite wall design	How brick and block combine	Lay brick/block composite wall
Level 1 MP4	810	Column construction	How columns support structures	Build brick columns
Level 2 MP4	811	Veneer wall design	How veneers differ from full walls	Construct brick veneer wall
Level 2 MP4	812	Cavity wall concept	How cavities improve insulation	Discuss brick cavity wall design
Level 2 MP4	813	Corbeling technique	How corbels add support and style	Corbel a brick wall
Level 2 MP4	814	Cleaning methods	How to maintain masonry appearance	Clean brick wall surfaces
Level 2 MP4	815	Rowlock course	How rowlocks enhance design	Lay rowlock course
Level 2 MP4	816	Header course	How headers tie walls together	Lay header course
Level 1 MP4	817	Jamb lead setup	How leads guide wall construction	Construct brick jamb lead
Level 1 MP4	818	Inside corner layout	How corners affect wall integrity	Build 4" brick inside corner
Level 1 MP4	819	Outside corner layout	How to maintain corner alignment	Build 4" brick outside corner
Level 1 MP4	820	Trowel techniques	How to spread mortar effectively	Perform brick trowel techniques
Level 1 MP5	901	Block types and bonds	How block bonds affect strength	Discuss block types and bonds
Level 1 MP5	902	Block laying techniques	How to maintain alignment	Lay block to the line
Level 2 MP5	903	Brick ledge layout	How ledges support brickwork	Construct brick ledge with block
Level 1 MP5	904	Control joint concept	How joints prevent cracking	Discuss control joint placement

Level 2 MP5	905	Opening installation	How to frame block openings	Install jambs in block walls
Level 2 MP5	906	Lintel setting	How lintels support openings	Set lintels in block walls
Level 2 MP5	907	Pier construction	How piers support loads	Construct block piers
Level 1 MP5	908	Cleaning methods	How to maintain block appearance	Clean block wall surfaces
Level 1 MP5	909	Targeting technique	How to apply mortar finish	Target block wall
Level 1 MP5	910	Jamb lead setup	How leads guide block walls	Construct jamb block lead
Level 1 MP5	911	Corner lead setup	How corners affect layout	Construct corner block lead
Level 1 MP5	912	Trowel techniques	How to spread mortar effectively	Perform block trowel techniques
Level 1 MP6	1001	Mortar types	How mortar properties affect use	Describe mortar types and characteristics
Level 1 MP6	1002	Hand mixing methods	How to mix mortar manually	Mix mortar by hand
Level 1 MP6	1004	Tempering process	How tempering affects mortar workability	Temper mortar correctly
Level 2 MP1	1101	Chimney/fireplace parts	How components function together	Identify chimney and fireplace parts
Level 2 MP1	1102	Fireplace construction	How fireplaces are built safely	Discuss fireplace construction steps
Level 2 MP1	1103	Brick chimney build	How to construct vertical flues	Build brick chimney
Level 2 MP1	1104	Block chimney build	How to use block in chimney work	Build block chimney
Level 2 MP1	1105	Flashing methods	How flashing prevents leaks	Discuss chimney flashing techniques
Level 2 MP3	1201	Arch terminology	How terms describe arch parts	Discuss arch terminology
Level 2 MP3	1202	Arch types	How different arches are used	Identify types of arches
Level 2 MP3	1203	Arch construction	How to build stable arches	Construct masonry arch
Level 2 MP4	1301	Brick estimation	How to calculate materials and cost	Estimate brick work requirements
Level 2 MP4	1302	Block estimation	How to calculate materials and cost	Estimate block work requirements
Level 2 MP4	1303	Concrete estimation	How to calculate volume and cost	Estimate concrete area and volume