

- Student will be best served by taking all Penn College major classes.
- Grant Advanced Placement for BCT 103.
- Offer Advanced Placement Tests for \_\_\_\_\_

Revised 2/9/2011

**Pennsylvania College of Technology**  
**One College Avenue**  
**Williamsport Pa, 17701**

Name: \_\_\_\_\_ PCT ID #: \_\_\_\_\_

Date: \_\_\_\_\_ School: \_\_\_\_\_

**COMPETENCY ASSESSMENT**  
**FOR**  
**BUILDING CONSTRUCTION TECHNOLOGY (CB) AAS**  
**BUILDING CONSTRUCTION TECHNOLOGY-MASONRY EMPHASIS (MN) AAS**  
**RESIDENTIAL BUILDER (RB)**

The following validated competencies represent those included in the first year of the programs. Please assess each applicable competency by circling the appropriate code letter, then sign, date, and return the form to the College's Admissions Office.

- H - Highly skilled, able to work independently  
M - Moderately skilled-requires minimum supervision  
L - Limited skills-requires full supervision  
N - Not covered in instruction or work experience

**PART I - COMPETENCY ASSESSMENT****1. CONSTRUCTION HAND & POWER TOOLS (CB, MN, & CN) BCT 103**

- |         |    |   |
|---------|----|---|
| H M L N | a. | Identify and evaluate emerging tool technology                                  |
| H M L N | b. | Identify the concepts of plumb, level, and square                               |
| H M L N | c. | Identify and apply tools used to layout and check plumb, level, and square      |
| H M L N | d. | Identify and apply layout tools   |
| H M L N | e. | Identify and apply cutting tools  |
| H M L N | f. | Identify and apply shaping tools  |
| H M L N | g. | Identify and apply fastening tools  |
| H M L N | h. | Identify and apply dismantling tools  |
| H M L N | i. | Perform typical hand tool maintenance operations                                |
| H M L N | j. | Operate a circular saw safely and accurately                                    |
| H M L N | k. | Operate battery and electric drills safely and accurately                       |
| H M L N | l. | Operate belt and hand sanders safely and accurately                             |
| H M L N | m. | Operate reciprocating saws safely and accurately                                |
| H M L N | n. | Operate routers safely and accurately   |
| H M L N | o. | Operate a pneumatic nailer safely and accurately                                |
| H M L N | p. | Operate a power miter box saw safely and accurately                             |
| H M L N | q. | Perform typical power tool maintenance operations on hand power tools           |
| H M L N | r. | Operate a jointer safely and accurately   |
| H M L N | s. | Operate a planer safely and accurately  |
| H M L N | t. | Operate a band saw safely and accurately  |
| H M L N | u. | Operate a table saw safely and accurately                                       |
| H M L N | v. | Perform typical power tool maintenance operations on stationary power equipment |

## 2. PRINT READING & ARCHITECTURAL DRAFTING (CB, MN, & CN) BCT 107

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|---------|----|--|
| H M L N | a. | Identify and define what constitutes a complete set of architectural Working drawings and specifications   |
| H M L N | b. | Read and interpret working drawings  |
| H M L N | c. | Interpret structural drawings provided by architects and/or manufacturers                                  |
| H M L N | d. | Read and interpret specifications  |
| H M L N | e. | Interpret standard drawing symbols   |
| H M L N | f. | Interpret dimensions and notes.  |
| H M L N | g. | Display fluency in building component nomenclature   |
| H M L N | h. | Use actual drawings to extract and interpret information   |
| H M L N | i. | Identify common house/building styles  |
| H M L N | j. | Demonstrate the correct use and care of drafting tools and equipment for preparing architectural drawings. |
| H M L N | k. | Demonstrate the correct use of drawing conventions and standards on architectural drawings.                |
| H M L N | l. | Produce freehand lettering on architectural drawings   |
| H M L N | m. | Prepare architectural drawings using orthographic projection   |
| H M L N | n. | Given an object, drawing, or problem, prepare a freehand technical sketch                                  |
| H M L N | o. | Apply mathematical principles as needed in the interpretation/ productin of working drawings.              |
| H M L N | p. | Apply IRC code compliance to working drawings  |

## 3. FRAMING PRINCIPLES (CB, MN, & CN) BCT 109

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|---------|----|--|
| H M L N | a. | Demonstrate knowledge of general construction practices and OSHA regulations related to framing                                    |
| H M L N | b. | Demonstrate knowledge of International Residential Code requirements Associated with framing: floors, walls, ceilings, and stairs  |
| H M L N | c. | Identify different types of frame construction   |
| H M L N | d. | Identify bearing and non-bearing partitions  |
| H M L N | e. | Demonstrate understanding of characteristics and uses of dimension lumber, engineered lumber and cod-formed steel framing systems. |
| H M L N | f. | Describe the effects of shrinkage and strength of materials in frame construction  |
| H M L N | g. | Identify floor, wall, and ceiling frame members.   |
| H M L N | h. | Layout and build various types of floor, wall and ceiling frames.  |
| H M L N | i. | Apply sapn charts to determine the size of girders, joists, and headers  |
| H M L N | j. | Identify light and heavy gauge metal framing members   |
| H M L N | k. | Calculate, layout, and install stair carriages   |
| H M L N | l. | Demonstrate knowledge of framing techniques to achieve energy efficiency   |

## 4. SITE PREPARATION AND LAYOUT (CB, MN, & CN) BCT 110

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|---------|----|--|
| H M L N | a. | Demonstrate proficiency with linear measurements.  |
| H M L N | b. | Convert linear measurements to decimal equivalents   |
| H M L N | c. | Display proficiency using Pythagorean theory to establish right angle, triangular mathematical calculations                                  |
| H M L N | d. | Identify basic capabilities of earth moving equipment for excavation and grading   |
| H M L N | e. | Identify foundation systems  |
| H M L N | f. | Demonstrate the proper set up and use of building layout instruments   |
| H M L N | g. | Identify cut and fill concepts from an engineered plot plan  |
| H M L N | h. | Establish grades and elevations from benchmarks.   |
| H M L N | i. | Layout the corners of a building to industry standards.  |
| H M L N | j. | Erect batter boards to industry standards  |
| H M L N | k. | Analyze the relationship of over dig in excavation as it relates to soil type, foundation system, work conditions and OSHA safety standards. |

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|---------|----|--|
| H M L N | l. | Identify degrees and minutes on the vernier scale of the transit level   |
| H M L N | m. | Establish various angles using a transit level   |
| H M L N | n. | Identify site management procedures regarding storm water management, hazardous materials, sediment control, temporary and permanent services in accordance with applicable regulations. |
| H M L N | o. | Identify applicable International Residential Code (IRC) compliance  |

**5. CONCRETE BLOCK CONSTRUCTION (MN) MCT 115**

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|---------|----|--|
| H M L N | a. | Demonstrate proper safety practices                              |
| H M L N | b. | Demonstrate proper trowel techniques                             |
| H M L N | c. | Dry bond a concrete block wall                                   |
| H M L N | d. | Construct a rack-back lead with concrete block                   |
| H M L N | e. | Demonstrate techniques for lay out for various CMU's             |
| H M L N | f. | Lay an 8" block corner   |
| H M L N | g. | Construct a 10" or 12" block corner using return corners         |
| H M L N | h. | Construct a 4" corner with half-lap bond                         |
| H M L N | i. | Construct a wall including pilaster                              |
| H M L N | j. | Lay block to the line  |
| H M L N | k. | Construct a wall openings (door-window)                          |
| H M L N | l. | Install concrete lintels over masonry openings.                  |
| H M L N | m. | Install anchor bolts into masonry wall                           |
| H M L N | n. | Lay cap blocks   |
| H M L N | o. | Cut concrete block with hand tools                               |
| H M L N | p. | Describe methods of water proofing walls                         |
| H M L N | q. | Cut concrete blocks with masonry saw                             |
| H M L N | r. | Build a foundation to height, square, and dimensions             |
| H M L N | s. | Mix mortar by hand   |
| H M L N | t. | Mix mortar with power mixer                                      |
| H M L N | u. | Determine mortar types for particular jobs                       |
| H M L N | v. | Demonstrate proper joint finishing techniques                    |
| H M L N | w. | Construction tubular steel scuffling                             |
| H M L N | x. | Apply IRC regulations as they apply in concrete block foundation |

**6. BRICK MASONRY (MN) MCT 129**

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|---------|----|---|
| H M L N | a. | Demonstrate proper safety practices                               |
| H M L N | b. | Spread mortar on brick  |
| H M L N | c. | Butter head joints on brick                                       |
| H M L N | d. | Dry bond a brick wall   |
| H M L N | e. | Lay a brick wall with all stretcher courses                       |
| H M L N | f. | Demonstrate various tooling techniques for popular brick finishes |
| H M L N | g. | Gauge bond walls with various spacing rules                       |
| H M L N | h. | Lay brick corners   |
| H M L N | i. | Lay brick to line   |
| H M L N | j. | Construct brick walls using the various brick bond patterns       |
| H M L N | k. | Explain the layout procedure for various bond patterns            |
| H M L N | l. | Discuss various brick closures                                    |
| H M L N | m. | Discuss brick cleaning methods and techniques                     |
| H M L N | n. | Clean brick walls   |
| H M L N | o. | Lay a soldier course  |
| H M L N | p. | Lay corbelled brick   |
| H M L N | q. | Construct an arch   |
| H M L N | r. | Cut brick with hand tools   |
| H M L N | s. | Cut Brick with masonry saw  |
| H M L N | t. | Explain the layout of a flight of brick steps                     |
| H M L N | u. | Explain the layout of brick walks and floors                      |
| H M L N | v. | Construct and flush brick chimneys                                |
| H M L N | w. | Apply IRC regulations as they apply to brick                      |

**PART II HIGH SCHOOL PROGRAM INFORMATION**

Name of Program: \_\_\_\_\_

Length of Program: \_\_\_\_\_ (years)

Total Instructional Hours: \_\_\_\_\_

This student completed \_\_\_\_\_ hours or \_\_\_\_\_ years.

**PART III RELATED WORK EXPERIENCE (IF APPLICABLE)**

1. The student has participated in a planned and approved program of: (Community Exploration, Cooperative Education, and Work Experience).
2. The student was evaluated by the employer as being: (Above Average, Average, and Below Average).

Employer: \_\_\_\_\_  
(Name)

\_\_\_\_\_  
(Job Supervisor)

\_\_\_\_\_  
(Title)

**PART IV COMMENTS AND/OR CLARIFICATIONS**

(Include any pertinent information or qualifications regarding skills, attitudes, etc.)

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\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**PART V CERTIFICATION AND RECOMMENDATION**

I have reviewed the above competencies and believe, to the best of my knowledge; my assessment is fair and accurate. I have indicated my recommendation by checking the box next to the statement below that indicates my assessment of how the student will best be served.

- I recommend this student receive advance placement.
- I do not recommend this student for advanced placement.

\_\_\_\_\_  
(Name)

\_\_\_\_\_  
(Title)