



Design Drafting Contest



YTI Career Institute

Design Drafting Contest

The purpose of this contest is to encourage excellence in effort and discipline, and to give recognition to outstanding students and design/drafting programs.

Instructors are encouraged to have their students enter the division that best reflects their skills. Entrants may not be employed in a professional design drafting position.

All entries must be submitted or postmarked no later than January 25, 2012. Any drawings received after the deadline will not be accepted.

General Rules:

- Only one entry per student. Students will design and draw their own drawing(s).
- Drawing entries must be plotted out on a standard sheet size (A, B, C, or D). Maximum drawing size is 24" x 36".
- Entries must be of a student's original work, not a **copy** or **digitized** drawing.
- The instructor may be contacted to verify that a student's entry was done in the classroom under his/her direct supervision.
- Drawings must be complete, **unfinished drawings and non-conforming drawings will not be evaluated.**
- Drawings that do not conform to standards, incorrect view projection, messy, wrong subject for division entered, **will not be evaluated.** Instructors are encouraged to inspect and screen drawings prior to submission.
- Decision of the judges is final.
- All entries become the property of YTI Career Institute.

Judging Criteria

The judges will be looking for good drafting techniques and skills. Judging is based on the principles and theories of the profession and not based on the creation process.

Judging is based on CAD design drafting practices in the following areas as appropriate to each division:

Accuracy	30 points
Dimensioning, dimensioning styles	25 points
View selection	20 points
Appearance/Neatness.....	15 points
Linework, linetype differentiation	15 points
Organization (view placement).....	10 points
Lettering, Font size and appropriateness	10 points
Spelling	5 points
Title Block (appropriate for the discipline as is used in the industry)	5 points
Legibility of plot	5 points
 Total	 140 points maximum

The Contest Committee will direct judging.

Feedback will only be provided to those students selected as scholarship recipients.

Divisions and Division Requirements

Architectural Division: 12th grade students interested in attending YTI Career Institute and compete for a chance to win a scholarship which will be applied to their academic tuition.

Mechanical Division: 12th grade students interested in attending YTI Career Institute and compete for a chance to win a scholarship which will be applied to their academic tuition.

Awards & Recognition:

The winning entries in each division will be indicated by the following awards:

Architectural Division: 50% YTI Career Institute Tuition Scholarship

Mechanical Division: 25% YTI Career Institute Tuition Scholarship

Architectural Division

Please read carefully!

Project Narrative

A family of four has purchased a lot in a new subdivision outside of York, Pennsylvania and you have been asked to design their new two (2) story home as per the specifications listed below. The family consists of a father, mother, and two children ages seven (7) and three (3). The owners wish to explore ways to reduce energy consumption and utility costs by using alternative passive or active energy saving techniques, and desire an efficient design which reduces material quantities. The use of recycled, green, and/or reusable materials is encouraged in the construction and finishing of the house.

General Home Plan Specifications:

- Overall size of home: 28'-0" x 28'-0" (exterior wall stud to exterior wall stud) This does not include the garage
- Bedrooms: 3 (one of these is the Master Suite containing a full bathroom and a walk-in closet of appropriate size). Minimum size is 95 square feet.
- Bathrooms: 2 ½ (½ on 1st floor and 2 full on 2nd floor).
- First floor: Kitchen, Dining, Living, ½ Bath, Coat closet
May also contain Laundry, Mud room, or other space as design allows
- Second floor: All bedrooms, a closet for each bedroom, 2 full bathrooms, and a linen closet
May also contain other rooms as design allows
- Garage: Two full size cars can park inside
- Roof style: Gable
 - Primary roof pitch: 8:12
 - Fascia: 6"
 - Soffit overhang: 12"
 - Gable overhang: 10"
- Ceiling Height (both floors): 8'
- Windows: Double hung
- Doors: Exterior doors: minimum of 36"
No pass-through interior doors smaller than 32"
Bi-fold & sliders may be used as appropriate
- Foundation: Masonry block (CMU)
Home must have a full basement.
- Stairs & Hallways: At least 36" wide finished

Mechanical Division

BRAKE CONTROL LEVER

Please read carefully!

Create a detailed drawing of the Brake Control Lever. A detail drawing will include:

1. Full dimensions according to ASME Y14.5 standards.
2. Proper application of tolerances where needed
3. A Tolerance Block in addition to Title Block (see examples)
4. General notes detailing any necessary manufacturing information
5. Third angle projection symbol (see examples)

You decide what views are necessary to clearly describe the item. Primary views should be full scale. Secondary views can be scaled as needed.

Critical dimensions would have to be held to a tighter tolerance than non-critical dimensions. Your tolerance block emphasizes this. Examples of critical vs. non-critical dimensions include:

Non-critical – dimensions to cast or rough surfaces

Critical – precision hole sizes & locations, dimensions from one machined surface to another, from machined surface to center of machine holes, etc.

A good rule of thumb would be:

Standard Metric Drawing		
Dimension	Decimal Places	Example
Non-critical:	none	Cast surface to cast surface
Non-critical:	.0	Machined surface to cast surface
Critical:	.00	Machine surface to machine surface
Fits:	.000	Precision reamed hole(s) designed to function with a mating part.

The number of decimal places the dimension numbers have in the given illustration of the Brake Control Level is not correct. Make sure your dimension number decimal places are correct on your submittal drawing per the information stated above.

- Exterior Coverings: Vinyl siding and Brick veneer
Maintenance free vinyl siding over entire house, except under porch area
Aluminum covered soffit/fascia and gutter/ downspouts
Brick veneer on front elevation of home under porch roof
Paneled style shutters on front elevation of home where applicable
- Covered Front Porch: 6' wide for length of the home (Roof pitch as small as 3:12)

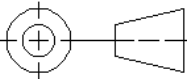
Things to consider:

- | | |
|-------|---|
| Big | Room placement / Efficient use of space (this is the toughest!)
Travel between spaces in home
Stairway placement (your stairs will make better use of space if they are "stacked" above the set of stairs below)
The "hole" in the second floor plan where the stairs will be |
| Small | Plumbing lines (minimum number of walls to break into if there is a problem)
First floor needs a plumbing wall to carry a pipe from above – this plumbing wall should be no further than 18" from the plumbing lines from the second floor (this is measured from the center of the toilet)
Door swings |

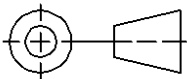
Submittal Drawings

- | | |
|--------------|---|
| Floor Plans | Draw a complete plan that delineates all spaces in the home using correct architectural symbols and standards. Clearly label all spaces in the home and provide enough dimensions to indicate wall locations and overall dimensions according to architectural drafting standards. Use additional notes that identify special characteristics of your design. Provide a designating line to show where your wall section was "cut."
Scale 1/4"=1'-0" |
| Wall Section | Choose a location of the sectional cut that best displays the features and concepts that you have incorporated into your design using correct architectural symbols and standards. Label all rooms, areas, and major construction components, and use any brief descriptive notes that may be required according to architectural drafting standards.
Scale 1/4"=1'-0" |
| Elevations | Show all sides of the home in elevation view. Include graphic and text representation of all finished materials used and provide all necessary dimensions according to architectural drafting standards.
Scale 1/4"=1'-0" |

Examples of a Third Angle Projection symbol and Tolerance Blocks for inch and metric drawings.

UNLESS OTHERWISE SPECIFIED: ALL DIMENSIONS ARE INCHES TOLERANCES: DECIMALS ANGLES .X ± .030 ± 1/2° .XX ± .010 FRACTIONS .XXX ± .005 ± 1/32 MACHINED SURFACES ARE 125√	TITLE:
	DRAWN BY D.
THIRD ANGLE PROJECTION	DATE: 1.
	SCALE:
	FILE NAME

Inch Drawings

UNLESS OTHERWISE SPECIFIED: ALL DIMENSIONS ARE MILLIMETERS. TOLERANCES: DECIMALS ANGLES .X ± .2 ± 1/2° .XX ± .08 .XXX ± .003 MACHINED SURFACES ARE 3√	DRAWN BY D.
	DATE: 2
THIRD ANGLE PROJECTION	SCALE:
	FILE NAME

Metric Drawings

