

Appendix A

Manufactured Construction Training Self-Efficacy Survey Items

Questions/Items		Response Options (Likert Scale)
1	My past experiences and accomplishments increase my confidence that I will be able to perform well in manufactured construction education.	Strongly Disagree - Strongly Agree
2	Manufactured construction education is within the scope of my abilities.	Strongly Disagree - Strongly Agree
3	Successfully completing a manufactured construction education program is within the scope of my abilities.	Strongly Disagree - Strongly Agree
4	Other people that know me well perceive me as being a capable person.	Strongly Disagree - Strongly Agree
5	My estimates of how well I can deal with a new situation are usually very accurate.	Strongly Disagree - Strongly Agree
6	I expect to be able to do things that need to be done to successfully complete a manufactured construction education program.	Strongly Disagree - Strongly Agree
7	If I take manufactured construction courses which involved many different tasks, some easy and some difficult, I would probably do very well at almost all of them.	Strongly Disagree - Strongly Agree
8	If I take a manufactured construction course in an unfamiliar area, I expect to be able to successfully complete the course.	Strongly Disagree - Strongly Agree
9	If I were asked to take a course in an area of manufactured construction which I didn't know much about, I could do well in the course.	Strongly Disagree - Strongly Agree
10	If I were asked to take a course in an area of manufactured construction which I didn't know much about, I could successfully complete the course.	Strongly Disagree - Strongly Agree
11	I can generally do the work necessary to accomplish my goals in education courses.	Strongly Disagree - Strongly Agree
12	I am confident that I can do well in manufactured construction education that deal with tool operation, using tools or body to move objects.	Strongly Disagree - Strongly Agree

Copyrighted Work, Elliott 2013

Appendix B

Manufactured Construction Training Motivation Survey Items

Questions/Items		Response Options (Likert Scale)
1	I value manufactured construction-related education.	Strongly Disagree - Strongly Agree
2	Manufactured construction education is useful for my development.	Strongly Disagree - Strongly Agree
3	I will be able to apply what I have learned in manufactured construction education to a job.	Strongly Disagree - Strongly Agree
4	I am motivated to learn the skills taught in manufactured construction education programs.	Strongly Disagree - Strongly Agree
5	I would like to improve my manufactured construction-related skills.	Strongly Disagree - Strongly Agree
6	I am willing to invest effort to improve my skills and competencies in order to prepare myself for a manufactured construction-related job.	Strongly Disagree - Strongly Agree
7	Taking manufactured construction education courses is a high priority for me.	Strongly Disagree - Strongly Agree
8	I am willing to invest effort on my personal time to develop manufactured construction-related skills.	Strongly Disagree - Strongly Agree

Copyrighted Work, Elliott 2013

Appendix C

Manufactured Construction Training Planned Behavior Survey Items

Questions/Items		Response Options (Likert Scale)
1	I will successfully complete this manufactured construction education course:	Extremely Unlikely - Extremely Likely
2	I would make an effort to successfully complete a manufactured construction education program:	I Definitely Will Not - I Definitely Will
3	I intend to successfully complete manufactured construction education:	Strongly Disagree - Strongly Agree
4	For me to complete a manufactured construction education program is:	Extremely Worthless - Extremely Valuable
Copyrighted Work, Elliott 2013		

Appendix D

12-Item Grit Scale

Directions for taking the Grit Scale: Please respond to the following 12 items. Be honest – there are no right or wrong answers!

Response Options (Likert Scale)

1 I have overcome setbacks to conquer an important challenge.	Very much like me - Not Like me at all
2 New ideas and projects sometimes distract me from previous ones.	Very much like me - Not Like me at all
3 My interests change from year to year.	Very much like me - Not Like me at all
4 Setbacks don't discourage me.	Very much like me - Not Like me at all
5 I have been obsessed with a certain idea or project for a short time but later lost interest.	Very much like me - Not Like me at all
6 I am a hard worker.	Very much like me - Not Like me at all
7 I often set a goal but later choose to pursue a different one.	Very much like me - Not Like me at all
8 I have difficulty maintaining my focus on projects that take more than a few months to complete.	Very much like me - Not Like me at all
9 I finish whatever I begin	Very much like me - Not Like me at all
10 I have achieved a goal that took years of work	Very much like me - Not Like me at all
11 I become interested in new pursuits every few months.	Very much like me - Not Like me at all
12 I am diligent.	Very much like me - Not Like me at all

Copyrighted Material (Duckworth, 2007)

Permission received from Duckworth, 5-19-2015

<http://www.sas.upenn.edu/~duckwort/images/12-item%20Grit%20Scale.05312011.pdf>

Appendix E

Learning Style Inventory

To better understand how you prefer to learn and process information, select the appropriate response after each statement below
Respond to each statement as honestly as you can.

Questions/Items	Response Options		
	Often	Sometimes	Seldom
1 I can remember best about a subject by listening to a lecture that includes information, explanations and discussions			
2 I prefer to see information written on a whiteboard and supplemented by visual aids and assigned readings			
3 I like to write things down or to take notes for visual review			
4 I prefer to use posters, models, or actual practice and other activities in class			
5 I require explanations of diagrams, graphs, or visual directions			
6 I enjoy working with my hands or making things.			
7 I am skillful with and enjoy developing and making graphs and charts			
8 I can tell if sounds match when presented with pairs of sounds			
9 I can remember best by writing things down.			
10 I can easily understand and follow directions on a map.			
11 I do best in academic subjects by listening to lectures and tapes			
12 I play with coins or keys in my pocket.			
13 I learn to spell better by repeating words out loud than by writing the words on paper			
14 I can understand a news article better by reading about it in a newspaper than by listening to a report about it on the radio			
15 I chew gum, smoke or snack while studying.			
16 I think the best way to remember something is to picture it in your head			
17 I learn the spelling of words by "finger spelling" them.			
18 I would rather listen to a lecture than read about the same material in a textbook			
19 I am good at working and solving jigsaw puzzles and mazes.			
20 I grip objects in my hands during learning periods.			
21 I prefer listening to the news on the radio rather than reading the paper			
22 I prefer obtaining information about an interesting subject by reading about it			
23 I feel very comfortable touching others, hugging, handshaking, etc.			
24 I follow oral directions better than written ones			

Source: San Jose State University, Educational Opportunity Program

http://www.sjsu.edu/eop/students/workshops/ACADEMIC_Learning%20Style%20Inventory.pdf

Foundation Survey: Intake

BEFORE you begin the survey, we want to give you some information about this survey by answering a couple of frequently asked questions:

Why am I taking this survey?

The purpose of this survey is to help the instructors understand your level of experience, academic decisions, and learning style.

How will my answers be used?

The survey is not graded, nor does it directly impact your ability to gain certifications or pass the training course. Instead, your honest answers will help the instructors make the content covered more specific to the students taking the training.

Is there a time limit for taking the survey?

There is no time limit for taking the survey, but we expect it will take about 20 minutes.

Do I have to enter any personal information on the survey?

At the bottom of this page, you will be required to enter your Student ID number, your date of birth, and the college you are attending. This information will be used to connect the survey answers to the group of students in your class.

Thank you for completing the survey and helping us fit the course material to your needs as a student!

To begin, provide the following information:

Your Student ID number: _____

Your Date of Birth (mm/dd/yyyy): _____

Select your college:

- ☐ Miami Dade College
- ☐ Polk State College
- ☐ Santa Fe College
- ☐ Seminole State College of Florida

Section 1

1. Do you have any manufacturing or construction experience?

- ☐ Yes
- ☐ No

Directions: If your answer to Question 1 was “No”, skip to Question 6. If your answer to Question 1 was “Yes”, please continue to Question 2.

2. How much construction management experience* do you have?

**In this study “construction management experience” is considered field or office management tasks such as submittal/shop drawing review, writing requests for information (RFIs), preparing estimates or budgets, preparing or updating schedules, and so on.*

- ☐ None
- ☐ More than "none" but less than 6 months
- ☐ More than 6 months but less than 12 months
- ☐ More than 12 months but less than 18 months
- ☐ More than 18 months ► Please write the number of YEARS of experience on the line:

3. How much hands-on construction experience* do you have?

**In this study “hands-on construction experience” is considered labor related tasks. Such as, installing roofing materials, cleaning up the site, assisting in the installation of brick, placing concrete, placing reinforcing, and so on.*

- ☐ None
- ☐ More than "none" but less than 6 months
- ☐ More than 6 months but less than 12 months
- ☐ More than 12 months but less than 18 months
- ☐ More than 18 months ► Please write the number of YEARS of experience on the line:

4. How much manufactured construction experience* do you have?

**In this study “manufactured construction experience” is considered factory work constructing homes, other building components (trusses, structural panels, etc.), or precast, metal, and panelized buildings.*

- ☐ None
- ☐ More than "none" but less than 6 months
- ☐ More than 6 months but less than 12 months
- ☐ More than 12 months but less than 18 months
- ☐ More than 18 months ► Please write the number of YEARS of experience on the line:

5. How much manufacturing experience* do you have?

**In this study "manufacturing experience" is considered any factory work (excluding manufactured construction) such as using tools, machines, and your hands to make and assemble finished products or the parts that go into them.*

- ☐ None
- ☐ More than "none" but less than 6 months
- ☐ More than 6 months but less than 12 months
- ☐ More than 12 months but less than 18 months
- ☐ More than 18 months ► Please write the number of YEARS of experience on the line:

6. Does anyone in your family work in the construction industry*?

**In this study the "construction industry" is considered a construction-related business such as a general contractor or subcontractor, construction material supplier, etc.*

- ☐ Yes
- ☐ No

Section 2

7. Is there someone who has influenced your academic decisions? This may be someone you know personally, or someone you simply know of.

- ☐ Yes
- ☐ No

Directions: If your answer to Question 7 was "No", skip to Section 3. If your answer to Question 7 was "Yes", please continue to Question 8.

If you have more than one person of influence, answer the following questions based on the person that has the greatest influence on your academic decisions:

8. Select the category that describes your relationship with this person of influence.

- ☐ Family Member ► Please describe the relationship further (example: father, sister, uncle):

- ☐ Friend, Peer, or Significant Other (Spouse, Partner) ► Please describe the relationship further (example: high school friend, girlfriend): _____
- ☐ Professor, Instructor, or Academic Advisor ► Please describe the relationship further (example: high school teacher): _____
- ☐ Co-Worker or Supervisor ► Please describe the relationship further (example: coworker at my current job): _____
- ☐ Other ► Please describe the relationship further: _____

9. What is the gender of this person of influence?

- ☐ Female
- ☐ Male

10. Does this person work in the construction industry*?

**In this study the "construction industry" is considered a construction-related business such as a general contractor or subcontractor, construction material supplier, etc.*

- ☐ Yes
- ☐ No

11. Do you consider this person to be a mentor or role model, as defined below?

In this study, a "mentor" is considered a person who has influenced your academic decisions by actively giving advice, encouraging (or discouraging), supporting, providing information, or helping you make decisions.

In this study, a "role model" is considered a person who, either by doing something or by being admirable to you in one or more ways, has had an impact on the academic decisions you have made in your life. Role models may be people you know personally, or they may be people you simply know of.

- ☐ Mentor
- ☐ Role Model
- ☐ Both a Mentor and Role Model

Section 3

Directions: In this section, please select your level of agreement with each statement using this scale:

Strongly Disagree



Strongly Agree

**Your Level of
Agreement
(1-10)**

My past experiences and accomplishments increase my confidence that I will be able to perform well in manufactured construction education.

Manufactured construction education is within the scope of my abilities.

Successfully completing a manufactured construction education program is within the scope of my abilities.

Other people that know me well perceive me as being a capable person.

My estimates of how well I can deal with a new situation are usually very accurate.

I expect to be able to do things that need to be done to successfully complete a manufactured construction education program.

If I take manufactured construction courses which involved many different tasks, some easy and some difficult, I would probably do very well at almost all of them.

If I take a manufactured construction course in an unfamiliar area, I expect to be able to successfully complete the course.

If I were asked to take a course in an area of manufactured construction which I didn't know much about, I could do well in the course.

If I were asked to take a course in an area of manufactured construction which I didn't know much about, I could successfully complete the course.

I can generally do the work necessary to accomplish my goals in education courses.

I am confident that I can do well in manufactured construction education that deal with tool operation, using tools or body to move objects.

Directions: In this section, please select your level of agreement with each statement using this scale:

Strongly Disagree



Strongly Agree

**Your Level of
Agreement
(1-10)**

I value manufactured construction-related education.

Manufactured construction education is useful for my development.

I will be able to apply what I have learned in manufactured construction education to a job.

I am motivated to learn the skills taught in manufactured construction education programs.

I would like to improve my manufactured construction-related skills.

I am willing to invest effort to improve my skills and competencies in order to prepare myself for a manufactured construction-related job.

Taking manufactured construction education courses is a high priority for me.

I am willing to invest effort on my personal time to develop manufactured construction-related skills.

Directions: In this section, please select the response which best describes your feeling about each statement.

I will successfully complete this manufactured construction education course:

Extremely Unlikely

1

☐

2

☐

3

☐

4

☐

5

☐

6

☐

7

☐

8

☐

9

☐

Extremely Likely

10

☐

I would make an effort to successfully complete a manufactured construction education program:

I Definitely Will Not

1

☐

2

☐

3

☐

4

☐

5

☐

6

☐

7

☐

8

☐

9

☐

I Definitely Will

10

☐

I intend to successfully complete manufactured construction education:

Strongly Disagree

1

☐

2

☐

3

☐

4

☐

5

☐

6

☐

7

☐

8

☐

9

☐

Strongly Agree

10

☐

For me to complete a manufactured construction education program is:

Extremely Worthless

1

☐

2

☐

3

☐

4

☐

5

☐

6

☐

7

☐

8

☐

9

☐

Extremely Valuable

10

☐

Section 4

Directions: Please respond to the following 12 items. Be honest – there are no right or wrong answers!

	Very much like me	Mostly like me	Somewhat like me	Not much like me	Not like me at all
I have overcome setbacks to conquer an important challenge.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
New ideas and projects sometimes distract me from previous ones.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My interests change from year to year.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Setbacks don't discourage me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have been obsessed with a certain idea or project for a short time but later lost interest.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am a hard worker.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I often set a goal but later choose to pursue a different one.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have difficulty maintaining my focus on projects that take more than a few months to complete.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I finish whatever I begin.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have achieved a goal that took years of work.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I become interested in new pursuits every few months.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am diligent.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Section 5

Directions: To better understand how you prefer to learn and process information, select the appropriate response after each statement below. Respond to each statement as honestly as you can.

	Often	Sometimes	Seldom
I can remember best about a subject by listening to a lecture that includes information, explanations and discussions.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I prefer to see information written on a whiteboard and supplemented by visual aids and assigned readings.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I like to write things down or to take notes for visual review.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I prefer to use posters, models, or actual practice and other activities in class.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I require explanations of diagrams, graphs, or visual directions.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I enjoy working with my hands or making things.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am skillful with and enjoy developing and making graphs and charts.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I can tell if sounds match when presented with pairs of sounds.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I can remember best by writing things down.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I can easily understand and follow directions on a map.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I do best in academic subjects by listening to lectures and tapes.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I play with coins or keys in my pocket.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	Often	Sometimes	Seldom
I learn to spell better by repeating words out loud than by writing the words on paper.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I can understand a news article better by reading about it in a newspaper than by listening to a report about it on the radio.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I chew gum, smoke or snack while studying.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I think the best way to remember something is to picture it in your head.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I learn the spelling of words by "finger spelling" them.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I would rather listen to a lecture than read about the same material in a textbook.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am good at working and solving jigsaw puzzles and mazes.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I grip objects in my hands during learning periods.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I prefer listening to the news on the radio rather than reading the paper.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I prefer obtaining information about an interesting subject by reading about it.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel very comfortable touching others, hugging, handshaking, etc.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I follow oral directions better than written ones.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Thank you for completing this survey!

Foundation Survey: Pre-Test

BEFORE you begin the survey, we want to give you some information about this survey by answering a couple of frequently asked questions:

Why am I taking this survey?

The purpose of this survey is to help the instructors understand what you currently know about construction, manufacturing, and the manufactured construction process. Since you have NOT completed the training yet, it is NOT expected that you would know all or any of the answers! Therefore, PLEASE BE HONEST when answering the questions and we ask that you do not use the internet or other material to assist you in finding the “right” answers.

How will my answers be used?

The survey is not graded, nor does it directly impact your ability to gain certifications or pass the training course. Instead, your honest answers will help the instructors determine what parts of the course should be focused on and what parts of the course you already understand. With your honest answers, we hope to make the content covered more specific to the knowledge of the students taking the training.

Can I use a calculator during the survey?

Yes, you can use a calculator to help you answer any questions on the survey.

Is there a time limit for taking the survey?

There is no time limit for taking the survey, but we expect it will take about 20 minutes.

Do I have to enter any personal information on the survey?

At the bottom of this page, you will be required to enter your Student ID number, your date of birth, and the college you are attending. This information will be used to connect the survey answers to the group of students in your class.

Thank you for completing the survey and helping us fit the course material to your needs as a student!

To begin, provide the following information:

Your Student ID number: _____

Your Date of Birth (mm/dd/yyyy): _____

Select your college:

- ☐ Miami Dade College
- ☐ Polk State College
- ☐ Santa Fe College
- ☐ Seminole State College of Florida

1. To properly dispose of oily rags, they must be _____.
 - ☐ stored in a container designed for the purpose
 - ☐ washed thoroughly and returned to use
 - ☐ taken outdoors and thrown into a dumpster
 - ☐ burned at the end of the shift
2. When something is plumb, it is _____.
 - ☐ exactly vertical
 - ☐ horizontally level
 - ☐ at a 30-degree angle
 - ☐ bobbed
3. Part of the construction drawing, the _____ gives information about the structure and is numbered for easy filing.
 - ☐ legend
 - ☐ scale
 - ☐ specification
 - ☐ title block
4. You need to cut a 90.5-inch pipe into as many 3.75-inch pieces as possible. How many complete 3.75-inch pieces will you be able to cut?
 - ☐ 14
 - ☐ 24
 - ☐ 34
 - ☐ 44
5. Which of the following is the best advice for sending an email?
 - ☐ Treat a business email the same way you would treat a formal business letter.
 - ☐ Type in all capital letters in order to emphasize the importance of your email and set it apart from others.
 - ☐ Send bad news or emotional information via email so that the recipient can read the message in privacy.
 - ☐ Spelling and grammar do not matter in email communication since it is informal.
6. A saber saw is an effective tool for _____.
 - ☐ drilling holes in concrete or pavement
 - ☐ making long straight cuts through thick metal
 - ☐ cutting through walls in demolition jobs
 - ☐ doing delicate work on thin materials
7. A total of 1,478 feet of cable was supplied for a job. Only 489 feet were installed. How many feet of cable remain?
 - ☐ 978
 - ☐ 980
 - ☐ 989
 - ☐ 1,099

8. A person who works without constant supervision is showing _____.
☐ initiative
☐ fortitude
☐ respect
☐ self-presentation
9. Zero tolerance refers to an employer's policy regarding _____.
☐ being sick
☐ training
☐ alcohol and drug abuse
☐ overtime
10. In the fraction $\frac{3}{4}$, 4 is called the _____.
☐ numerator
☐ denominator
☐ whole number
☐ divider
11. Find the equivalents of the following fraction: $\frac{3}{16}$ equals how many thirty-seconds?
☐ $\frac{2}{32}$
☐ $\frac{4}{32}$
☐ $\frac{6}{32}$
☐ $\frac{8}{32}$
12. Ceramic tile weighs 4.75 pounds per square foot. Therefore, 128 square feet of ceramic tile weighs _____.
☐ 598 pounds
☐ 608 pounds
☐ 908 pounds
☐ 1108 pounds
13. Construction workers write a(n) _____ to list deficiencies requiring correction at completion.
☐ punch list
☐ appendix
☐ change order
☐ table of contents
14. Express the number 0.479 as a percentage.
☐ 0.00479%
☐ 0.479%
☐ 47.9%
☐ 479%

15. If the scale on a site plan reads SCALE: 1" = 20'-0", then every _____.
☐ 1 / 20th of an inch on the drawing represents 20 feet, 0 inches
☐ 20 inches on the drawing represents 1 foot, 0 inches
☐ inch on the drawing represents 20 feet, 0 inches
☐ 20 inches on the drawing represents 20 feet, 0 inches
16. Metal ladders should not be used near _____.
☐ stairways
☐ scaffolds
☐ electrical equipment
☐ windows
17. An estimate for a commercial flooring job requires one thousand, six hundred ninety-three square meters of carpet to complete the first floor. How would you write this amount as a whole number?
☐ 163
☐ 1,693
☐ 10,693
☐ 16,093
18. In order to determine whether a surface is level, check the _____.
☐ vertical surface
☐ spirit
☐ horizontal surface
☐ amount of bubbles
19. The end grinder is used to _____.
☐ polish intricate work
☐ grind surfaces
☐ smooth the work before painting
☐ smooth the inside of materials, such as pipe
20. To prevent an electrical shock, do not operate electric power tools without proper _____.
☐ revolutions per minute
☐ ground fault protection
☐ trigger locks
☐ auger bits
21. Pneumatic tools get their power from _____.
☐ air pressure
☐ fluid pressure
☐ hand pumps
☐ AC power sources

22. A fire extinguisher labeled C would be used to fight a(n) _____.
☐ electrical fire
☐ magnesium fire
☐ paper fire
☐ gasoline fire
23. When positioning a straight ladder against a wall, how far from the wall should the base of the ladder be?
☐ Four feet (1.2 m)
☐ One-fourth the distance from the ground to the point where the ladder touches the wall
☐ The height of the wall minus 4 feet (1.2 m)
☐ One-half the distance from the ground to the point where the ladder touches the wall
24. The proper way to start cutting material with a circular saw is to _____.
☐ rev the saw to full speed and slowly move it forward into the material
☐ hold the lower blade guard up to position the blade on the cut mark
☐ press the blade against the material being cut and set the saw rpm to Low
☐ tilt the front edge of the baseplate upward and push the saw forward
25. The decimal equivalent of the fraction $\frac{7}{8}$ is _____.
☐ 0.0875
☐ 0.75
☐ 0.875
☐ 8.75
26. When a plan is marked _____, it means that the drawing gives approximate positions and sizes only.
☐ schematic
☐ not to scale
☐ revised
☐ not to specifications
27. A company uses a(n) _____ to state how it does business.
☐ compromise
☐ mission statement
☐ initiative
☐ reference
28. The area of a rectangle that is 8 feet long and 4 feet wide is _____.
☐ 12 sq ft
☐ 22 sq ft
☐ 32 sq ft
☐ 36 sq ft

29. The longer the ratchet handle, the better the _____.

- ☐ reach
- ☐ leverage
- ☐ grip
- ☐ torque

30. The _____ of the drill holds the drill bit.

- ☐ carbide
- ☐ kerf
- ☐ shank
- ☐ chuck

31. To help make sure the path is clear when your view is obstructed while handling materials, use a _____.

- ☐ mirror
- ☐ spotter
- ☐ tow rope
- ☐ step ladder

32. The combined thickness of a piece of sheet metal 0.078 centimeters (cm) thick and a piece of band iron 0.25 cm thick is _____.

- ☐ 0.308 cm
- ☐ 0.328 cm
- ☐ 3.08 cm
- ☐ 32.8 cm

33. A(n) _____ usually has an arrowhead at both ends, with the measurement written near the middle of the line.

- ☐ elevation
- ☐ hidden line
- ☐ schematic
- ☐ dimension line

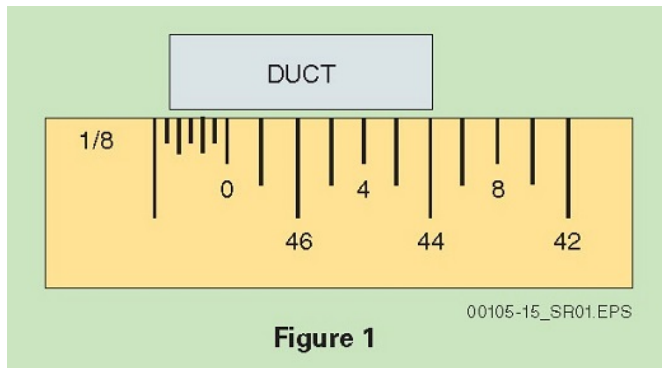
34. The proper way to get tools to a worker on a higher level is to _____.

- ☐ toss them up carefully
- ☐ carry them by hand up a ladder
- ☐ climb up with them in your pocket
- ☐ hoist them up with a rope and bucket

35. The person primarily responsible for your safety is _____.

- ☐ your foreman
- ☐ your instructor
- ☐ yourself
- ☐ your employer

36. What is the length (in feet and inches) of the section of duct using the architect's scales shown in Figure 1?



- ☐ 6 feet, 3/4 inches
- ☐ 6 feet, 10 inches
- ☐ 44 feet, 3/4 inches
- ☐ 48 feet, 4 inches

37. Complete numerical units without fractions or decimals are called _____.

- ☐ numerators
- ☐ denominators
- ☐ whole numbers
- ☐ dividers

38. The carpenter's square is also called a _____.

- ☐ framing square
- ☐ speed square
- ☐ try square
- ☐ magic square

39. If gravel must be distributed across an area that measures 17 feet square and the gravel layer is to be 6 inches thick, the volume of gravel needed would be _____.

- ☐ 3.77 cu yds
- ☐ 5.35 cu yds
- ☐ 102 cu yds
- ☐ 144.5 cu yds

40. On a gridline system, a grid divides the area into small parts called _____.

- ☐ segments
- ☐ bays
- ☐ sections
- ☐ pods

41. When stacking or storing light materials that have a large surface area and could easily be moved by the wind, _____.
☐ keep the stack height less than four feet
☐ weight the top of the stack with clamps
☐ tie down or band the materials
☐ secure the materials in a flameproof cabinet
42. A _____ is a steel frame that supports and carries a home to its destination.
☐ template
☐ chassis
☐ jig
☐ vise
43. A(n) _____ is any failure to comply with an applicable Federal manufactured home construction and safety standard that renders the manufactured home or any part thereof not fit for the ordinary use for which it was intended and which results in an unreasonable risk of injury or death to the occupants of the affected manufactured home.
☐ serious defect
☐ significant claim
☐ significant injury
☐ serious rejection
44. A _____ is used in a factory to control the location and/or motion of another tool; they increase the speed and accuracy of production.
☐ template
☐ level
☐ jig
☐ vise
45. If an employee takes longer than the assigned time at his or her station, it will not delay the other stations and employees.
☐ True
☐ False
46. _____ homes are constructed in a factory and delivered to the home site; they are built on a permanent frame with wheels and can be moved from site to site.
☐ stick-built
☐ modular
☐ mobile
☐ custom

47. Before an owner can move in to a site-built home, the building-code official must perform a final inspection and issue a C.O. What does C.O. stand for?
- ☐ certificate of occupancy
 - ☐ certificate of ownership
 - ☐ contract for occupancy
 - ☐ contract for ownership
48. To select the proper size crane, you must consider _____.
- ☐ the number of building modules
 - ☐ the building weight and site conditions
 - ☐ the placement of lifting straps on each module
 - ☐ the operator's level of experience
49. _____ is a failure of the manufactured home to comply with a Federal manufactured home construction or safety standard that does not constitute a defect, serious defect, or imminent safety hazard.
- ☐ nonconformity
 - ☐ noncompliance
 - ☐ building rejection
 - ☐ building compliance
50. Before the floor decking can be installed, the electrical work must be inspected.
- ☐ True
 - ☐ False
51. If you make a mistake or identify a problem during production, you should _____.
- ☐ tell other employee at the next work break
 - ☐ immediately notify other employees
 - ☐ write down the mistake and tell the supervisor at the end of the work day
 - ☐ try to fix the mistake without anyone noticing
52. A building component's dimension may deviate from the drawing a maximum of _____.
- ☐ 1/2"
 - ☐ 3/8"
 - ☐ 1/4"
 - ☐ 1/8"
53. A(n) _____ is a hazard that presents an imminent and unreasonable risk of death or server personal injury that may or may not be related to failure to comply with an applicable Federal manufactured home construction or safety standard.
- ☐ danger of risk
 - ☐ OSHA violation
 - ☐ serious defect
 - ☐ imminent safety hazard

54. _____ homes consist of multiple sections that are first constructed in a factory, then trucked to the home site, set onto a foundation, and finally the sections are joined on-site to complete the building.
- ☐ stick-built
 - ☐ modular
 - ☐ mobile
 - ☐ custom
55. All of the functions within a manufactured construction plant are interrelated and time-sensitive; the performance of one job is dependent on the previous task.
- ☐ True
 - ☐ False
56. A(n) _____ is a failure to comply with an applicable Federal manufactured home safety and construction standard that renders the manufactured home part or component thereof not fit for ordinary use for what it was intended, but does not result in an unreasonable risk of injury or death to occupants of the affected manufactured home.
- ☐ injury
 - ☐ defect
 - ☐ rejection
 - ☐ claim
57. A pressure gauge that measures pounds per square inch gauge (psig) indicates a reading of 45. The local atmospheric pressure is 14.7 psi. What is the absolute pressure (psia) that corresponds to the psig reading?
- ☐ 3.1
 - ☐ 30.3
 - ☐ 45
 - ☐ 59.7
58. When doing a(n) _____, only a portion of the product are inspected in order to determine whether to accept or reject an entire lot or run of products.
- ☐ acceptance sampling
 - ☐ quality circle
 - ☐ enterprise resource plan
 - ☐ corrective action report
59. When using a ladder to gain access to an upper landing, the ladder should be extended at least _____ feet (or rungs) above the upper landing.
- ☐ 1
 - ☐ 2
 - ☐ 3
 - ☐ 4

60. Per the specifications, a part length is 3.00 ± 0.004 and the width is $1.75 \pm .02$. Which part is acceptable to use?
- ☐ Length: 2.96, Width: 1.73
 - ☐ Length: 2.997, Width: 1.765
 - ☐ Length: 3.01, Width: 1.875
 - ☐ Length: 3.002, Width: 1.55
61. Scaffolding that is greater than _____ feet high must include guardrails, midrails, and toe boards.
- ☐ 5
 - ☐ 10
 - ☐ 15
 - ☐ 20
62. If a motor circuit starts blowing fuses/tripping thermals, the most likely cause is _____.
- ☐ commutation
 - ☐ flux
 - ☐ resistance
 - ☐ overload
63. Once a fuse has opened it must be replaced.
- ☐ True
 - ☐ False
64. Oxygen cylinders should be kept at least _____ away from points of combustion.
- ☐ 5 feet
 - ☐ 15 feet
 - ☐ 25 feet
 - ☐ 35 feet
65. A _____ product is a good or service that doesn't meet the quality standard or customer expectation.
- ☐ incorrect
 - ☐ variation
 - ☐ nonconforming
 - ☐ defective
66. A part measures 15.035 mm. If the tolerance for the part is ± 0.007 , would a part measuring 15.041 be acceptable?
- ☐ Yes
 - ☐ No
67. A Safety Data Sheet (SDS) gives information about _____.
- ☐ hazardous chemicals
 - ☐ injuries in the workplace
 - ☐ medical examinations
 - ☐ machinery maintenance

68. A pressure gauge is in PSIA if it reads 0 when exposed to the atmosphere.

- ☐ True
- ☐ False

69. What is the OSHA-designated color for equipment being repaired (caution against starting or moving)?

- ☐ yellow
- ☐ purple
- ☐ orange
- ☐ blue

70. Convert the following measurement: 32 degrees Fahrenheit = _____ degrees Celsius

- ☐ 0
- ☐ 32
- ☐ 100
- ☐ 212

71. An employee worked 10 hours and made 200 parts, of which 180 were acceptable for use. What was the employee's productivity?

_____ parts per hour

72. Electrical current can travel multiple paths in a _____ circuit.

- ☐ voltage resistive
- ☐ series resistive
- ☐ parallel resistive
- ☐ element resistive

73. A _____ describes a product in terms of its assemblies, sub-assemblies, and basic parts.

- ☐ pareto chart
- ☐ bill of material
- ☐ histogram
- ☐ scatter diagram

74. Chain tension should be such that the chain sags approximately _____ of the distance between the shaft centers.

- ☐ 2%
- ☐ 3%
- ☐ 4%
- ☐ 5%

75. Calculate the mean of the following series of numbers: 1.93, 2.05, 1.75, 2.00, 2.11, 1.98

Provide two decimal places in your answer (for example: X.XX): _____

76. A machine produces 3,500 parts. Out of these, 500 parts are defective. What is the ratio of defective parts to acceptable parts?
- ☐ 1:6
 - ☐ 6:1
 - ☐ 1:7
 - ☐ 7:1
77. Periodic inspections, non-destructive testing, and the calibration of instruments are functions of _____.
- ☐ equipment life cycle
 - ☐ breakdown maintenance
 - ☐ standard operating procedure
 - ☐ preventative maintenance
78. What is the OSHA-designated color for dangerous parts of machinery or energized equipment?
- ☐ yellow
 - ☐ purple
 - ☐ orange
 - ☐ blue
79. Tribology is used in equipment condition monitoring to _____.
- ☐ measure and analyze heat
 - ☐ detect defects in materials
 - ☐ analyze vibrations
 - ☐ analyze lubricating oil
80. If the gear ratio is 1:4 and the driver gear has a speed of 800 RPM, what is the speed of the driven gear?
- ☐ 200 RPM
 - ☐ 800 RPM
 - ☐ 2400 RPM
 - ☐ 3200 RPM
81. Who can remove the lock during a lockout/tagout (LOTO) procedure?
- ☐ supervisor
 - ☐ affected employee
 - ☐ authorized employee
 - ☐ OSHA inspector
82. When a product is not made to specification, it is called _____.
- ☐ incorrect
 - ☐ variation
 - ☐ nonconforming
 - ☐ defective

Thank you for completing this survey!

Foundation Survey: Post-Test

BEFORE you begin the survey, we want to give you some information about this survey by answering a couple of frequently asked questions:

Why am I taking this survey?

The purpose of this survey is to help the instructors understand what you currently know about construction, manufacturing, and the manufactured construction process. Since you have NOT completed the training yet, it is NOT expected that you would know all or any of the answers! Therefore, PLEASE BE HONEST when answering the questions and we ask that you do not use the internet or other material to assist you in finding the “right” answers.

How will my answers be used?

The survey is not graded, nor does it directly impact your ability to gain certifications or pass the training course. Instead, your honest answers will help the instructors determine what parts of the course should be focused on and what parts of the course you already understand. With your honest answers, we hope to make the content covered more specific to the knowledge of the students taking the training.

Can I use a calculator during the survey?

Yes, you can use a calculator to help you answer any questions on the survey.

Is there a time limit for taking the survey?

There is no time limit for taking the survey, but we expect it will take about 20 minutes.

Do I have to enter any personal information on the survey?

At the bottom of this page, you will be required to enter your Student ID number, your date of birth, and the college you are attending. This information will be used to connect the survey answers to the group of students in your class.

Thank you for completing the survey and helping us fit the course material to your needs as a student!

To begin, provide the following information:

Your Student ID number: _____

Your Date of Birth (mm/dd/yyyy): _____

Select your college:

- ☐ Miami Dade College
- ☐ Polk State College
- ☐ Santa Fe College
- ☐ Seminole State College of Florida

Section 1

1. To properly dispose of oily rags, they must be _____.
 - ☐ stored in a container designed for the purpose
 - ☐ washed thoroughly and returned to use
 - ☐ taken outdoors and thrown into a dumpster
 - ☐ burned at the end of the shift
2. When something is plumb, it is _____.
 - ☐ exactly vertical
 - ☐ horizontally level
 - ☐ at a 30-degree angle
 - ☐ bobbed
3. Part of the construction drawing, the _____ gives information about the structure and is numbered for easy filing.
 - ☐ legend
 - ☐ scale
 - ☐ specification
 - ☐ title block
4. You need to cut a 90.5-inch pipe into as many 3.75-inch pieces as possible. How many complete 3.75-inch pieces will you be able to cut?
 - ☐ 14
 - ☐ 24
 - ☐ 34
 - ☐ 44
5. Which of the following is the best advice for sending an email?
 - ☐ Treat a business email the same way you would treat a formal business letter.
 - ☐ Type in all capital letters in order to emphasize the importance of your email and set it apart from others.
 - ☐ Send bad news or emotional information via email so that the recipient can read the message in privacy.
 - ☐ Spelling and grammar do not matter in email communication since it is informal.
6. A saber saw is an effective tool for _____.
 - ☐ drilling holes in concrete or pavement
 - ☐ making long straight cuts through thick metal
 - ☐ cutting through walls in demolition jobs
 - ☐ doing delicate work on thin materials

7. A total of 1,478 feet of cable was supplied for a job. Only 489 feet were installed. How many feet of cable remain?
- ☐ 978
 - ☐ 980
 - ☐ 989
 - ☐ 1,099
8. A person who works without constant supervision is showing _____.
- ☐ initiative
 - ☐ fortitude
 - ☐ respect
 - ☐ self-presentation
9. Zero tolerance refers to an employer's policy regarding _____.
- ☐ being sick
 - ☐ training
 - ☐ alcohol and drug abuse
 - ☐ overtime
10. In the fraction $\frac{3}{4}$, 4 is called the _____.
- ☐ numerator
 - ☐ denominator
 - ☐ whole number
 - ☐ divider
11. Find the equivalents of the following fraction: $\frac{3}{16}$ equals how many thirty-seconds?
- ☐ $\frac{2}{32}$
 - ☐ $\frac{4}{32}$
 - ☐ $\frac{6}{32}$
 - ☐ $\frac{8}{32}$
12. Ceramic tile weighs 4.75 pounds per square foot. Therefore, 128 square feet of ceramic tile weighs _____.
- ☐ 598 pounds
 - ☐ 608 pounds
 - ☐ 908 pounds
 - ☐ 1108 pounds
13. Construction workers write a(n) _____ to list deficiencies requiring correction at completion.
- ☐ punch list
 - ☐ appendix
 - ☐ change order
 - ☐ table of contents

14. Express the number 0.479 as a percentage.
- ☐ 0.00479%
 - ☐ 0.479%
 - ☐ 47.9%
 - ☐ 479%
15. If the scale on a site plan reads SCALE: 1" = 20'-0", then every ____.
- ☐ 1/20th of an inch on the drawing represents 20 feet, 0 inches
 - ☐ 20 inches on the drawing represents 1 foot, 0 inches
 - ☐ inch on the drawing represents 20 feet, 0 inches
 - ☐ 20 inches on the drawing represents 20 feet, 0 inches
16. Metal ladders should not be used near ____.
- ☐ stairways
 - ☐ scaffolds
 - ☐ electrical equipment
 - ☐ windows
17. An estimate for a commercial flooring job requires one thousand, six hundred ninety-three square meters of carpet to complete the first floor. How would you write this amount as a whole number?
- ☐ 163
 - ☐ 1,693
 - ☐ 10,693
 - ☐ 16,093
18. In order to determine whether a surface is level, check the ____.
- ☐ vertical surface
 - ☐ spirit
 - ☐ horizontal surface
 - ☐ amount of bubbles
19. The end grinder is used to ____.
- ☐ polish intricate work
 - ☐ grind surfaces
 - ☐ smooth the work before painting
 - ☐ smooth the inside of materials, such as pipe
20. To prevent an electrical shock, do not operate electric power tools without proper ____.
- ☐ revolutions per minute
 - ☐ ground fault protection
 - ☐ trigger locks
 - ☐ auger bits

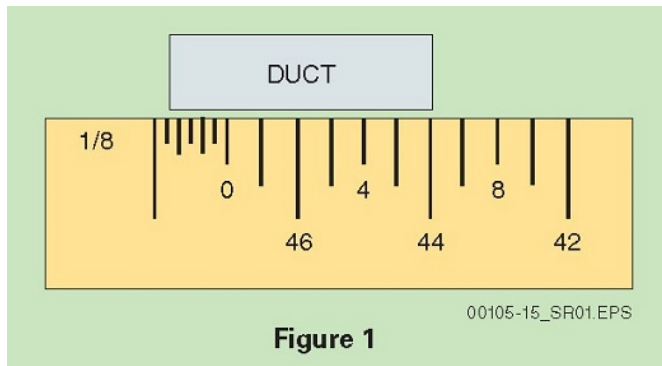
21. Pneumatic tools get their power from _____.
☐ air pressure
☐ fluid pressure
☐ hand pumps
☐ AC power sources
22. A fire extinguisher labeled C would be used to fight a(n) _____.
☐ electrical fire
☐ magnesium fire
☐ paper fire
☐ gasoline fire
23. When positioning a straight ladder against a wall, how far from the wall should the base of the ladder be?
☐ Four feet (1.2 m)
☐ One-fourth the distance from the ground to the point where the ladder touches the wall
☐ The height of the wall minus 4 feet (1.2 m)
☐ One-half the distance from the ground to the point where the ladder touches the wall
24. The proper way to start cutting material with a circular saw is to _____.
☐ rev the saw to full speed and slowly move it forward into the material
☐ hold the lower blade guard up to position the blade on the cut mark
☐ press the blade against the material being cut and set the saw rpm to Low
☐ tilt the front edge of the baseplate upward and push the saw forward
25. The decimal equivalent of the fraction $\frac{7}{8}$ is _____.
☐ 0.0875
☐ 0.75
☐ 0.875
☐ 8.75
26. When a plan is marked _____, it means that the drawing gives approximate positions and sizes only.
☐ schematic
☐ not to scale
☐ revised
☐ not to specifications
27. A company uses a(n) _____ to state how it does business.
☐ compromise
☐ mission statement
☐ initiative
☐ reference

28. The area of a rectangle that is 8 feet long and 4 feet wide is _____.
- ☐ 12 sq ft
 - ☐ 22 sq ft
 - ☐ 32 sq ft
 - ☐ 36 sq ft
29. The longer the ratchet handle, the better the _____.
- ☐ reach
 - ☐ leverage
 - ☐ grip
 - ☐ torque
30. The _____ of the drill holds the drill bit.
- ☐ carbide
 - ☐ kerf
 - ☐ shank
 - ☐ chuck
31. To help make sure the path is clear when your view is obstructed while handling materials, use a _____.
- ☐ mirror
 - ☐ spotter
 - ☐ tow rope
 - ☐ step ladder
32. The combined thickness of a piece of sheet metal 0.078 centimeters (cm) thick and a piece of band iron 0.25 cm thick is _____.
- ☐ 0.308 cm
 - ☐ 0.328 cm
 - ☐ 3.08 cm
 - ☐ 32.8 cm
33. A(n) _____ usually has an arrowhead at both ends, with the measurement written near the middle of the line.
- ☐ elevation
 - ☐ hidden line
 - ☐ schematic
 - ☐ dimension line
34. The proper way to get tools to a worker on a higher level is to _____.
- ☐ toss them up carefully
 - ☐ carry them by hand up a ladder
 - ☐ climb up with them in your pocket
 - ☐ hoist them up with a rope and bucket

35. The person primarily responsible for your safety is _____.

- ☐ your foreman
- ☐ your instructor
- ☐ yourself
- ☐ your employer

36. What is the length (in feet and inches) of the section of duct using the architect's scales shown in Figure 1?



- ☐ 6 feet, 3/4 inches
- ☐ 6 feet, 10 inches
- ☐ 44 feet, 3/4 inches
- ☐ 48 feet, 4 inches

37. Complete numerical units without fractions or decimals are called _____.

- ☐ numerators
- ☐ denominators
- ☐ whole numbers
- ☐ dividers

38. The carpenter's square is also called a _____.

- ☐ framing square
- ☐ speed square
- ☐ try square
- ☐ magic square

39. If gravel must be distributed across an area that measures 17 feet square and the gravel layer is to be 6 inches thick, the volume of gravel needed would be _____.

- ☐ 3.77 cu yds
- ☐ 5.35 cu yds
- ☐ 102 cu yds
- ☐ 144.5 cu yds

40. On a gridline system, a grid divides the area into small parts called _____.
☐ segments
☐ bays
☐ sections
☐ pods
41. When stacking or storing light materials that have a large surface area and could easily be moved by the wind, _____.
☐ keep the stack height less than four feet
☐ weight the top of the stack with clamps
☐ tie down or band the materials
☐ secure the materials in a flameproof cabinet
42. A _____ is a steel frame that supports and carries a home to its destination.
☐ template
☐ chassis
☐ jig
☐ vise
43. A(n) _____ is any failure to comply with an applicable Federal manufactured home construction and safety standard that renders the manufactured home or any part thereof not fit for the ordinary use for which it was intended and which results in an unreasonable risk of injury or death to the occupants of the affected manufactured home.
☐ serious defect
☐ significant claim
☐ significant injury
☐ serious rejection
44. A _____ is used in a factory to control the location and/or motion of another tool; they increase the speed and accuracy of production.
☐ template
☐ level
☐ jig
☐ vise
45. If an employee takes longer than the assigned time at his or her station, it will not delay the other stations and employees.
☐ True
☐ False
46. _____ homes are constructed in a factory and delivered to the home site; they are built on a permanent frame with wheels and can be moved from site to site.
☐ stick-built
☐ modular
☐ mobile
☐ custom

47. Before an owner can move in to a site-built home, the building-code official must perform a final inspection and issue a C.O. What does C.O. stand for?
- ☐ certificate of occupancy
 - ☐ certificate of ownership
 - ☐ contract for occupancy
 - ☐ contract for ownership
48. To select the proper size crane, you must consider _____.
- ☐ the number of building modules
 - ☐ the building weight and site conditions
 - ☐ the placement of lifting straps on each module
 - ☐ the operator's level of experience
49. _____ is a failure of the manufactured home to comply with a Federal manufactured home construction or safety standard that does not constitute a defect, serious defect, or imminent safety hazard.
- ☐ nonconformity
 - ☐ noncompliance
 - ☐ building rejection
 - ☐ building compliance
50. Before the floor decking can be installed, the electrical work must be inspected.
- ☐ True
 - ☐ False
51. If you make a mistake or identify a problem during production, you should _____.
- ☐ tell other employee at the next work break
 - ☐ immediately notify other employees
 - ☐ write down the mistake and tell the supervisor at the end of the work day
 - ☐ try to fix the mistake without anyone noticing
52. A building component's dimension may deviate from the drawing a maximum of _____.
- ☐ 1/2"
 - ☐ 3/8"
 - ☐ 1/4"
 - ☐ 1/8"
53. A(n) _____ is a hazard that presents an imminent and unreasonable risk of death or server personal injury that may or may not be related to failure to comply with an applicable Federal manufactured home construction or safety standard.
- ☐ danger of risk
 - ☐ OSHA violation
 - ☐ serious defect
 - ☐ imminent safety hazard

54. _____ homes consist of multiple sections that are first constructed in a factory, then trucked to the home site, set onto a foundation, and finally the sections are joined on-site to complete the building.
- ☐ stick-built
 - ☐ modular
 - ☐ mobile
 - ☐ custom
55. All of the functions within a manufactured construction plant are interrelated and time-sensitive; the performance of one job is dependent on the previous task.
- ☐ True
 - ☐ False
56. A(n) _____ is a failure to comply with an applicable Federal manufactured home safety and construction standard that renders the manufactured home part or component thereof not fit for ordinary use for what it was intended, but does not result in an unreasonable risk of injury or death to occupants of the affected manufactured home.
- ☐ injury
 - ☐ defect
 - ☐ rejection
 - ☐ claim
57. A pressure gauge that measures pounds per square inch gauge (psig) indicates a reading of 45. The local atmospheric pressure is 14.7 psi. What is the absolute pressure (psia) that corresponds to the psig reading?
- ☐ 3.1
 - ☐ 30.3
 - ☐ 45
 - ☐ 59.7
58. When doing a(n) _____, only a portion of the product are inspected in order to determine whether to accept or reject an entire lot or run of products.
- ☐ acceptance sampling
 - ☐ quality circle
 - ☐ enterprise resource plan
 - ☐ corrective action report
59. When using a ladder to gain access to an upper landing, the ladder should be extended at least _____ feet (or rungs) above the upper landing.
- ☐ 1
 - ☐ 2
 - ☐ 3
 - ☐ 4

60. Per the specifications, a part length is 3.00 ± 0.004 and the width is $1.75 \pm .02$. Which part is acceptable to use?
- ☐ Length: 2.96, Width: 1.73
 - ☐ Length: 2.997, Width: 1.765
 - ☐ Length: 3.01, Width: 1.875
 - ☐ Length: 3.002, Width: 1.55
61. Scaffolding that is greater than _____ feet high must include guardrails, midrails, and toe boards.
- ☐ 5
 - ☐ 10
 - ☐ 15
 - ☐ 20
62. If a motor circuit starts blowing fuses/tripping thermals, the most likely cause is _____.
- ☐ commutation
 - ☐ flux
 - ☐ resistance
 - ☐ overload
63. Once a fuse has opened it must be replaced.
- ☐ True
 - ☐ False
64. Oxygen cylinders should be kept at least _____ away from points of combustion.
- ☐ 5 feet
 - ☐ 15 feet
 - ☐ 25 feet
 - ☐ 35 feet
65. A _____ product is a good or service that doesn't meet the quality standard or customer expectation.
- ☐ incorrect
 - ☐ variation
 - ☐ nonconforming
 - ☐ defective
66. A part measures 15.035 mm. If the tolerance for the part is ± 0.007 , would a part measuring 15.041 be acceptable?
- ☐ Yes
 - ☐ No
67. A Safety Data Sheet (SDS) gives information about _____.
- ☐ hazardous chemicals
 - ☐ injuries in the workplace
 - ☐ medical examinations
 - ☐ machinery maintenance

68. A pressure gauge is in PSIA if it reads 0 when exposed to the atmosphere.

- ☐ True
- ☐ False

69. What is the OSHA-designated color for equipment being repaired (caution against starting or moving)?

- ☐ yellow
- ☐ purple
- ☐ orange
- ☐ blue

70. Convert the following measurement: 32 degrees Fahrenheit = _____ degrees Celsius

- ☐ 0
- ☐ 32
- ☐ 100
- ☐ 212

71. An employee worked 10 hours and made 200 parts, of which 180 were acceptable for use. What was the employee's productivity?

_____ parts per hour

72. Electrical current can travel multiple paths in a _____ circuit.

- ☐ voltage resistive
- ☐ series resistive
- ☐ parallel resistive
- ☐ element resistive

73. A _____ describes a product in terms of its assemblies, sub-assemblies, and basic parts.

- ☐ pareto chart
- ☐ bill of material
- ☐ histogram
- ☐ scatter diagram

74. Chain tension should be such that the chain sags approximately _____ of the distance between the shaft centers.

- ☐ 2%
- ☐ 3%
- ☐ 4%
- ☐ 5%

75. Calculate the mean of the following series of numbers: 1.93, 2.05, 1.75, 2.00, 2.11, 1.98

Provide two decimal places in your answer (for example: X.XX): _____

76. A machine produces 3,500 parts. Out of these, 500 parts are defective. What is the ratio of defective parts to acceptable parts?
- ☐ 1:6
 - ☐ 6:1
 - ☐ 1:7
 - ☐ 7:1
77. Periodic inspections, non-destructive testing, and the calibration of instruments are functions of _____.
- ☐ equipment life cycle
 - ☐ breakdown maintenance
 - ☐ standard operating procedure
 - ☐ preventative maintenance
78. What is the OSHA-designated color for dangerous parts of machinery or energized equipment?
- ☐ yellow
 - ☐ purple
 - ☐ orange
 - ☐ blue
79. Tribology is used in equipment condition monitoring to _____.
- ☐ measure and analyze heat
 - ☐ detect defects in materials
 - ☐ analyze vibrations
 - ☐ analyze lubricating oil
80. If the gear ratio is 1:4 and the driver gear has a speed of 800 RPM, what is the speed of the driven gear?
- ☐ 200 RPM
 - ☐ 800 RPM
 - ☐ 2400 RPM
 - ☐ 3200 RPM
81. Who can remove the lock during a lockout/tagout (LOTO) procedure?
- ☐ supervisor
 - ☐ affected employee
 - ☐ authorized employee
 - ☐ OSHA inspector
82. When a product is not made to specification, it is called _____.
- ☐ incorrect
 - ☐ variation
 - ☐ nonconforming
 - ☐ defective

Section 2

Directions: In this section, please select your level of agreement with each statement using this scale:

Strongly Disagree



Strongly Agree

**Your Level of
Agreement
(1-10)**

My past experiences and accomplishments increase my confidence that I will be able to perform well in manufactured construction education.

Manufactured construction education is within the scope of my abilities.

Successfully completing a manufactured construction education program is within the scope of my abilities.

Other people that know me well perceive me as being a capable person.

My estimates of how well I can deal with a new situation are usually very accurate.

I expect to be able to do things that need to be done to successfully complete a manufactured construction education program.

If I take manufactured construction courses which involved many different tasks, some easy and some difficult, I would probably do very well at almost all of them.

If I take a manufactured construction course in an unfamiliar area, I expect to be able to successfully complete the course.

If I were asked to take a course in an area of manufactured construction which I didn't know much about, I could do well in the course.

If I were asked to take a course in an area of manufactured construction which I didn't know much about, I could successfully complete the course.

I can generally do the work necessary to accomplish my goals in education courses.

I am confident that I can do well in manufactured construction education that deal with tool operation, using tools or body to move objects.

Directions: In this section, please select your level of agreement with each statement using this scale:

Strongly Disagree



Strongly Agree

**Your Level of
Agreement
(1-10)**

I value manufactured construction-related education.

Manufactured construction education is useful for my development.

I will be able to apply what I have learned in manufactured construction education to a job.

I am motivated to learn the skills taught in manufactured construction education programs.

I would like to improve my manufactured construction-related skills.

I am willing to invest effort to improve my skills and competencies in order to prepare myself for a manufactured construction-related job.

Taking manufactured construction education courses is a high priority for me.

I am willing to invest effort on my personal time to develop manufactured construction-related skills.

Directions: In this section, please select the response which best describes your feeling about each statement.

I will successfully complete this manufactured construction education course:

Extremely Unlikely

1

☐

2

☐

3

☐

4

☐

5

☐

6

☐

7

☐

8

☐

9

☐

Extremely Likely

10

☐

I would make an effort to successfully complete a manufactured construction education program:

I Definitely Will Not

1

☐

2

☐

3

☐

4

☐

5

☐

6

☐

7

☐

8

☐

9

☐

I Definitely Will

10

☐

I intend to successfully complete manufactured construction education:

Strongly Disagree

1

☐

2

☐

3

☐

4

☐

5

☐

6

☐

7

☐

8

☐

9

☐

Strongly Agree

10

☐

For me to complete a manufactured construction education program is:

Extremely Worthless

1

☐

2

☐

3

☐

4

☐

5

☐

6

☐

7

☐

8

☐

9

☐

Extremely Valuable

10

☐

Section 3

Directions: Please respond to the following 12 items. Be honest – there are no right or wrong answers!

	Very much like me	Mostly like me	Somewhat like me	Not much like me	Not like me at all
I have overcome setbacks to conquer an important challenge.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
New ideas and projects sometimes distract me from previous ones.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My interests change from year to year.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Setbacks don't discourage me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have been obsessed with a certain idea or project for a short time but later lost interest.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am a hard worker.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I often set a goal but later choose to pursue a different one.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have difficulty maintaining my focus on projects that take more than a few months to complete.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I finish whatever I begin.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have achieved a goal that took years of work.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I become interested in new pursuits every few months.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am diligent.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Thank you for completing this survey!

Appendix I - TRAMCON Pre- and Post-Test Data Comparison, Intake Through Foundation Post-Test Example

TRAMCON FALL 2015 FOUNDATION																													
DEMOGRAPHICS										NCCER CORE (41 Points)						INTRO TO MC (15 Points)						MSSC (26 Points)							
Student ID	Date of Birth	College	Participant ID	Date & Time	Status	Date & Time	Status	Date & Time	Status	Score	Grade	Score	Grade	Δ	POST-PRE	Score	Grade	Score	Grade	Δ	POST-PRE	Score	Grade	Score	Grade	Δ	POST-PRE	Score	Grade
Student 1	07/20/36	College	0098	01/06/16		1/6/2016		Not Started		22	54%					11	73%					13	50%						
Student 2	01/14/56	College	0079	01/05/16		1/5/2016		Not Started		26	63%					7	47%					10	38%						
Student 3	07/23/58	College	0044	09/28/15		9/28/2015		12/2/2015		28	68%	32	78%	4	10%	13	87%	13	87%	0	0%	15	58%	12	46%	(3)	(12%)		
Student 4	08/10/59	College	0040	09/28/15	Incomplete	9/28/2015		12/2/2015				18	44%	0	0%		9	60%	4	27%			7	27%	2	8%			
Student 5	01/15/60	College	0042	09/28/15		9/28/2015		12/2/2015		22	54%	27	66%	5	12%	12	80%	12	80%	0	0%	9	35%	11	42%	2	8%		
Student 6	04/07/65	College	0039	09/28/15		9/28/2015		12/2/2015		31	76%	34	83%	3	7%	10	67%	12	80%	2	13%	10	38%	17	65%	7	27%		
Student 7	04/30/65	College	0082	01/05/16		1/5/2016		Not Started		17	41%					7	47%					6	23%						
Student 8	10/07/65	College	0036	09/28/15		9/28/2015		12/2/2015		29	71%	31	76%	2	5%	13	87%	9	60%	(4)	(27%)	7	27%	15	58%	8	31%		
Student 9	11/28/65	College	0011	09/14/15		9/14/2015		11/17/2015		23	56%	27	66%	4	10%	7	47%	11	73%	4	27%	5	19%	8	31%	3	12%		
Student 10	03/13/68	College	0038	09/28/15		9/28/2015		12/2/2015		22	54%	22	54%	0	0%	12	80%	9	60%	(3)	(20%)	8	31%	12	46%	4	15%		
Student 11	07/12/68	College	0075	01/05/16		1/5/2016		Not Started		29	71%					9	60%					13	50%						
Student 12	09/16/70	College	0081	01/05/16		1/5/2016		Not Started		9	22%					8	53%					6	23%						
Student 13	06/15/73	College	0017	09/14/15		9/14/2015		11/17/2015		29	71%	26	63%	(3)	(7%)	11	73%	10	67%	(1)	(7%)	10	38%	16	62%	6	23%		
DEMOGRAPHICS										CTAIS								GRIT				LEARNING STYLES INVENTORY							
Student ID	Date of Birth	College	Participant ID	Date & Time	Status	Date & Time	Status	Date & Time	Status	Self-Efficacy	Motivation	Planned Behavior	Self-Efficacy	Motivation	Planned Behavior	Δ POST-PRE Δ Mean	% Δ	Δ POST-PRE Δ Mean	% Δ	Δ POST-PRE Δ Mean	% Δ	INTAKE Score	POST-TEST Score	Δ POST-PRE Score	% Δ	Visual	Intake Auditory	Tactile	
Student 1	07/20/36	College	0098	01/06/16		1/6/2016		Not Started		7.8	8.8	10.0										4.3				28	23	26	
Student 2	01/14/56	College	0079	01/05/16		1/5/2016		Not Started		8.6	9.8	10.0										4.7				34	32	22	
Student 3	07/23/58	College	0044	09/28/15		9/28/2015		12/2/2015		9.3	10.0	10.0	9.5	9.0	9.0	0.2	2%	(1.0)	(10%)	(1.0)	(10%)	4.3	3.6	(0.7)	(16%)	32	34	28	
Student 4	08/10/59	College	0040	09/28/15	Incomplete	9/28/2015		12/2/2015		9.0	10.0	10.0	9.1	9.9	10.0	0.1	1%	(0.1)	(1%)	0.0	0%	3.4	3.6	0.2	5%	38	30	28	
Student 5	01/15/60	College	0042	09/28/15		9/28/2015		12/2/2015		8.9	10.0	10.0	9.5	10.0	10.0	0.6	7%	0.0	0%	0.0	0%	4.3	4.3	0.0	0%	36	26	24	
Student 6	04/07/65	College	0039	09/28/15		9/28/2015		12/2/2015		10.0	10.0	10.0	10.0		10.0	0.0	0%			0.0	0%	4.2	3.5	(0.7)	(16%)	29	22	26	
Student 7	04/30/65	College	0082	01/05/16		1/5/2016		Not Started		8.7	9.1	9.8										4.2				32	30	26	
Student 8	10/07/65	College	0036	09/28/15		9/28/2015		12/2/2015		10.0	10.0	10.0	9.8	8.8	10.0	(0.2)	(2%)	(1.3)	(13%)	0.0	0%	4.9	4.8	(0.2)	(3%)	34	22	22	
Student 9	11/28/65	College	0011	09/14/15		9/14/2015		11/17/2015		5.1	9.1	10.0	8.4	10.0	10.0	3.3	66%	0.9	10%	0.0	0%	4.3	4.5	0.3	6%	17	24	24	
Student 10	03/13/68	College	0038	09/28/15		9/28/2015		12/2/2015		9.8	10.0	10.0	9.6	9.0		(0.3)	(3%)	(1.0)	(10%)			4.6	4.2	(0.4)	(9%)	25	22	16	
Student 11	07/12/68	College	0075	01/05/16		1/5/2016		Not Started		9.2	8.9	9.8										3.9				40	36	22	
Student 12	09/16/70	College	0081	01/05/16		1/5/2016		Not Started		9.2	10.0	10.0										4.0				26	28	24	
Student 13	06/15/73	College	0017	09/14/15		9/14/2015		11/17/2015		5.5	4.4	4.5	8.1	6.5	7.0	2.6	47%	2.1	49%	2.5	56%	3.0	3.1	0.1	3%	24	23	20	