



Course title:

Course Description:

Is this course a new development or refresh?

Is there anything you would like to share?

# [Course Name]

---

## Measuring Instruments

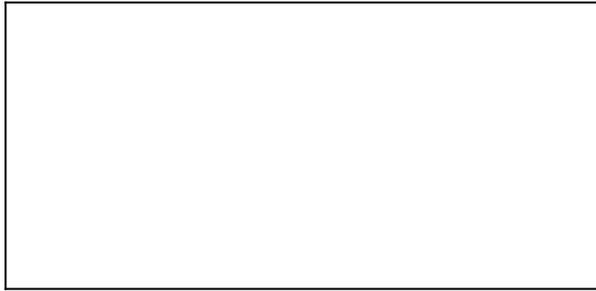
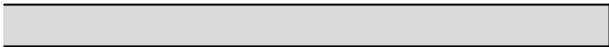
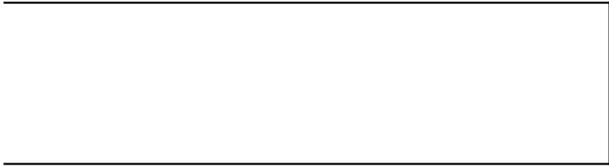
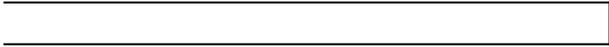
---

This course will familiarize students with the precision measurement tools and techniques used in manufacturing and industry. Topics will include measurement equipment types and specifications, as well as the techniques for ensuring measurement accuracy and precision. Students will be instructed in the correct use of calipers, micrometers, multimeters, oscilloscopes, and other pertinent tools that will be used in the electrical and mechanical manufacturing fields.

---

## New Development

---



<b>Trade Title</b>	<b>competencies</b>	<b>frequency)</b>
Building Maintenance Mechanic	and electronic Equipment	Extremely Important/ Everyday
Industrial Machinery Mechanic	all such instruments.	Important/Once a week
Industrial Machinery Mechanic	gage and gage blocks	Important/Once a week
Quality Assurance Auditor	quality control	Important/Everyday
Quality Assurance Auditor	no go) gages	Important/Once a week
Quality Assurance Auditor	upkeep of inspection equipment	Very Important/Once a week
Quality Assurance Auditor	E.3 Calibrate auditing equipment	Extremely Important/Everyday
Electro-Mechanical Technician	indicators, gauge blocks, etc.	Very Important/Everyday
Industrial Manufacturing Technician	D4. Interpret tolerances using technical drawings and job specifications.	Very Important/Everyday
Industrial Manufacturing Technician	measure and inspect work.	Very Important/Once a week
Industrial Manufacturing Technician	to assure quality product	Important/Once a week

# Course Planning/Align

Learning Objectives	Assessment(s)
electrical measuring instruments	Quiz
Demonstrate how to properly use calipers and micrometers to measure part dimensions	Assignment, measuring instruments for Part Dimensions Quiz
Demonstrate how to properly use calipers and micrometers to measure part dimensions	Assignment, measuring instruments for Part Dimensions Quiz
Understand the importance of accuracy and precision in measurements; Distinguish between accuracy and precision	
Distinguish between accuracy and precision	
Explain the steps in measurement equipment maintenance	M5 Go- No Go Gauge Assignment
M9 Explain the steps in measurement equipment maintenance	
M3 Understand the importance of calibration and explain how calibration may be performed;	
M5 Demonstrate how to use gauge blocks to calibrate instruments and to set instruments to nominal dimensions	M3 Calibration Assignment
M3 Understand the importance of calibration and explain how calibration may be performed;	M3 Calibration Assignment
M5 Demonstrate how to use gauge blocks to calibrate instruments and to set instruments to nominal dimensions	M3 Calibration Assignment
Demonstrate how to properly use calipers and micrometers to measure part dimensions	M3 Measuring Instruments for Part Dimensions Quiz
M2 Understand the purpose of tolerances and specifications; Correctly interpret the different methods used to indicate tolerances; calculate the specification limits based on the indicated tolerances.	M2 Calculating Tolerances and Specification Assignment
M2 Understand the purpose of tolerances and specifications; Correctly interpret the different methods used to indicate tolerances; calculate the specification limits based on the indicated tolerances.	M6 Measuring Instruments for Part Dimensions Quiz
M2 Understand the purpose of tolerances and specifications; Correctly interpret the different methods used to indicate tolerances; calculate the specification limits based on the indicated tolerances.	M6 Measuring Instruments for Part Dimensions Quiz
Demonstrate how to properly use calipers and micrometers to measure part dimensions	Assignment, measuring instruments for Part Dimensions Quiz

# Instrument

## Learning Activities

to use of micrometers and calipers to measure electronic components.

Referring to engineering drawings to determine if a particular part dimension is in or out of tolerance.

Referring to engineering drawings to determine if a particular part dimension is in or out of tolerance.

Referring to engineering drawings to determine if a particular part dimension is in or out of tolerance.

Measuring a Gauge Part Size, analyzing the Gauge Part needs to determine how measurement variation could be reduced.

**M6** Using gauge blocks to calibrate calipers and micrometers.

Referring to engineering drawings to determine if a particular part dimension is in or out of tolerance.

**M5** Working with engineering drawings to determine which measuring instruments are most appropriate to inspect particular part dimension specifications. Referring to engineering drawings to determine if the particular part dimension is in or out of tolerance.

**M6** Using the appropriate calipers and micrometers to measure particular part dimensions. Referring to engineering drawings to determine if particular part dimension is in or out of tolerance.

Referring to engineering drawings to determine if a particular part dimension is in or out of tolerance.

Referring to engineering drawings to determine if a particular part dimension is in or out of tolerance.

<b>Resources (Content)</b>	<b>Completed</b>
Oscilloscopes; Function Generators	
<b>M6</b> Calipers; Micrometers	
<b>M6</b> Calipers; Micrometers	
<b>M9</b> Reducing Measurement Variation	
<b>M3</b> Assuring Accuracy with Calibration; <b>M5</b> Measuring Instruments for Part Dimensions	
<b>M6</b> Calipers; Micrometers	
<b>M2</b> How Do We Indicate Tolerances?; Calculating Limits	
<b>M6</b> Calipers; Micrometers	

## Template [OSCQR 3.1]

**Sufficiently Present**
**Minor Revision**
**Moderate Revision**
**Major Revision**
**Not Applicable**
**Action Plan**

*Estimated time needed for revision:*
1/2 hour or less
1/2-2 hours
2+ hours

RSI	1	from Instructor)					
RSI	2	assessments, predictable and easy to navigate/find.					
RSI	2.a	Course calendar is populated with due dates for assignments					
RSI	3	syllabus for learners in a clear and navigable way.					
	4	A printable syllabus is available to learners (PDF, HTML).					
	5	computer use, filing grievances, accommodating disabilities, etc.					
RSI	6	orientation, tutoring).					
	7	web-enhanced.					
	8	pop-ups, browser issue, microphone, webcam).					
RSI	9	aligned to learning activities and assessments.					
RSI	10	program.					

	11	hardware) are clearly stated and supported with resources.					
	11.a	SUNY Learning Network					
	12	appropriate).					
	13	being utilized are removed from the course menu.					
	14	Course includes links to privacy policies for technology tools.					
	15	Any technology tools meet accessibility standards.					

	16	content organized together, self-evident titles).					
	16.a	links and does not include unused tools					
	17	ample white space around and between the blocks.					
	18	be easily viewed.					
RSI	19	Instructions are provided and well written.					
	20	Course is free of grammatical and spelling errors.					
	21	readability and improve the structure of the document.					
	22	Flashing and blinking text are avoided.					
	23	A sans-serif font with a standard size of at least 12 pt is used.					
	24	table.					
	25	Tables are accompanied by a title and summary description.					
	26	Table header rows and columns are assigned.					
	27	Slideshows use a predefined slide layout and include unique slide titles.					
	28	slides.					

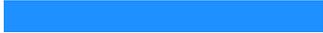
RSI	29	substantive interaction with the instructor.						
RSI	30	and problem-solving skills, such as critical reflection and analysis.						
RSI	31	based activities.						
	32	materials are used.						
	33	clearly stating permission to share where applicable.						
	34	with Blackboard Ally)						
	35	captions, transcripts, etc.).						
	36	THAT ALL INFORMATION/MATERIALS MUST BE TEXT.)						
	36.a	Assignments align to the learning goals/objectives						
	37	using "click here").						

RSI	38	appropriate for the course length and structure, and are easy to find.						
RSI	39	course interaction/communication channels						
RSI	40	Learners have an opportunity to get to know the instructor.						
RSI	41	Bulletin Board, planned Office Hours, and dedicated discussion forums).						
	41.a	challenging for English as a Second Language learners.						
	42	collaboration, teamwork, )						
	42.a	connect to their life/program)						
RSI	43	information with guidance and/or standards from the instructor.						

RSI	44	clearly stated in the course information area or syllabus.						
RSI	45	the learners' mastery of content.						
RSI	46	articulated (rubrics, exemplary work).						
RSI	47	reflective assignments, etc.).						
	48	accommodation.						
	49	purposeful)						
	50	technology.						

M-A	M-A	Hyperlinks are provided for embedded content.						
M-B	M-B	The course avoids the use of tables and multiple levels of indents.						
M-C	M-C	Text is not placed to the left or right of images.						
M-D	M-D	When specifying width, percentages are used instead of pixels.						
M-E	M-E	The course is tested on multiple mobile devices.						
M-F	M-F	and iOS mobile platforms.						
M-G	M-G	mobile devices (such as Flash and Java).						
M-H	M-H	When file attachments are necessary, PDF is used as much as possible.						
M-I	M-I	Content is divided into small, manageable chunks.						





- [1. Need ideas?](#)
- [2. Need ideas?](#)
- [3. Need ideas?](#)
- [4. Need ideas?](#)
- [5. Need ideas?](#)
- [6. Need ideas?](#)
- [7. Need ideas?](#)
- [8. Need ideas?](#)
- [9. Need ideas?](#)
- [10. Need ideas?](#)



- [11. Need ideas?](#)
- [12. Need ideas?](#)
- [13. Need ideas?](#)
- [14. Need ideas?](#)
- [15. Need ideas?](#)



- [16. Need ideas?](#)
- [17. Need ideas?](#)
- [18. Need ideas?](#)
- [19. Need ideas?](#)
- [20. Need ideas?](#)
- [21. Need ideas?](#)
- [22. Need ideas?](#)
- [23. Need ideas?](#)
- [24. Need ideas?](#)
- [25. Need ideas?](#)
- [26. Need ideas?](#)
- [27. Need ideas?](#)
- [28. Need ideas?](#)

[29. Need ideas?](#)

[30. Need ideas?](#)

[31. Need ideas?](#)

[32. Need ideas?](#)

[33. Need ideas?](#)

[34. Need ideas?](#)

[35. Need ideas?](#)

[36. Need ideas?](#)

[37. Need ideas?](#)

[38. Need ideas?](#)

[39. Need ideas?](#)

[40. Need ideas?](#)

[41. Need ideas?](#)

[42. Need ideas?](#)

[43. Need ideas?](#)

[44. Need ideas?](#)

[45. Need ideas?](#)

[46. Need ideas?](#)

[47. Need ideas?](#)

[48. Need ideas?](#)

[49. Need ideas?](#)

[50. Need ideas?](#)

[Need ideas?](#)

