



# From SLOs to Action:

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Designing Meaningful and Measurable Assessments

# Agenda

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- Introduction
- It all begins with measurable SLOs
- Aligning assessment instruments with SLO's
- Consistency across sections and modalities
- References





**It all begins with  
measurable  
CSLOs**

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# What makes a Course-level Student Learning Outcome (CSLO) measurable?

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- Verb choice matters
- Use *action* verbs
- Example: Instead of *appreciate* use a verb which captures an observable student action.

Begin by defining the goal:

- “Understand the significance of...”
- “Recognize the value of...”
- “Develop a personal connection to...”

# Crafting measurable SLO's

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- Original SLO: “Students will appreciate the importance of proper weld angles.”
- Updated SLO: “Students will articulate the impacts of proper weld angles on structural integrity.”
- Original SLO: “Students will appreciate the importance of ethics in business.”
- Updated SLO: “Students will reflect on ethical dilemmas and articulate potential responses to each dilemma along with its consequence in a business environment.”

# Action verbs for measurable SLOs

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Action verb examples from page 19 of Learning Assessment Techniques: A Handbook for College Faculty by Barkley and Major.

Foundational knowledge	Application	Integration	Human dimension	Caring	Learning How to Learn
Articulate	Apply	Classify	Analyze	Appraise	Collaborate
Cite	Calculate	Contrast	Criticize	Challenge	Initiate
Describe	Construct	Evaluate	Manage	Debate	Summarize
Explain	Design	Measure	Support	Illustrate	Test
Paraphrase	Estimate	Revise	Validate	Propose	Write

Keep these in mind when revising your COR



# **Aligning assessment instruments with SLOs**

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Practical strategies to optimize use of  
existing CSLOs in new assessments

# Aligning assessment instruments with SLOs

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- What is an assessment instrument?
- The assignment, activity, etc you use to gauge student performance within each SLO
- Also known as “assessment artifacts”
- Also known as “assessment tools”
- In this presentation, I will use *assessment instrument*



# What are students learning?

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**You Try it!  
Then  
share  
with the  
group**

- Open the Course Outline of Record (COR) for your class.
- In an offline document, copy/paste the Learning Outcomes

For each one, clearly state what you want students to learn.

- Rephrase SLOs if needed (especially if the current verbs are not measurable)
- Include a sentence or two on how you can identify that they have met the learning goal

# Choose the instrument



Now that you have clarified *what* your students are learning and *how* you can identify they are learning, there are just a couple more questions to ask yourself

How will students access the content?

- Flexible: Homework assignment
- More structured: Practical lab assignment in a supervised environment

What do you believe will best demonstrate student learning?

- Multiple choice exam
- Written reflection

How complex do you want the activity to be?

- Entry or exit ticket during class time
- Semester-long project requiring extensive planning and score

# Choose the instrument



**You Try it!  
Then  
share  
with the  
group**

Example: Students will demonstrate foundational knowledge on the causes and early events of the American Revolution.

Possible instrument: Guided Reading notes.

- Students receive an incomplete set of notes with information from an assigned reading and/or class lecture. It is up to students to fill in the missing information based on the reading and/or class lecture.
- Faculty can determine, based on review of these filled-in Guided Reading Notes, whether or not students demonstrate the foundational knowledge required.

# Consistency across sections and modalities

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Why it matters and strategies



- Ensures students are graded equitably across sections and instructors
- Example: Two English courses for SLO “Evaluate and integrate evidence”

**Class A Assignment:** Students will summarize three sources and write 3 to 4 sentences on each source’s credibility

Assessed for accuracy with result: 90% of students scored proficient or higher

**Class B Assignment:** Students will write a persuasive essay using at least three scholarly sources


Assessed for support of evidence and clarity of writing with result: 65% of students scored proficient or higher.

What is the issue?



# Why consistency matters

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- Meet early and often with departmental colleagues assessing the same course
  - First meeting: As a team: \*
    1. Clarify what students will learn
    2. Select the assessment instrument and create a rubric
  - Second meeting:
    1. Anonymize sample student work
    2. Have everyone score the same student work on shared rubric
    3. Share results and use this to align rubric

Everyone should agree on what sample work  
Exceeds expectations, meets expectations, does  
not meet expectations (etc) for each SLO

\* Adapted from the LAT cycle: page 9 of Barkley book

# Best Practices

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- Meet additional times as meeting (while being respectful of each other's time. More meetings  $\neq$  more productivity)
- Create shared document with needed notes from meetings.

#### Things to include

- What students are trying to learn and how they will demonstrate this
- How learning will be measured
- Shared rubric
- Samples of student work to help align rubric
- Upload this document to eLumen

# Best Practices

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# Assessment Options

- Evaluator Assessment Guide

The assessment guide will appear on the faculty scorecard and rubric for this assessment. Select Upload Evaluator Assessment Guide to add an assessment guide to the assessment.

The screenshot shows the 'Define this Assessment' section of the LMC Mathematics interface. The user is Nidia Gonzalinajec as Faculty in LMC Mathematics. The 'Proxy Enabled' status is shown in red. The 'Courses' dropdown is set to 'Fall 2020'. The 'SLOs & Assessments' tab is active. The 'Select the Assessment Type' section has two tabs: 'Individual Student Scorecard & Rubric' (selected) and 'Collective Student Score Entry'. The 'Define this Assessment' section contains the following fields:

- Assessment Name\***: Math 210 - Generic template for training purposes
- Assessment Description\***: This assessment was created for training purposes
- Assessment Type\***: Summative Assessment (dropdown menu)
- ☐ Make this assessment formative  
(Formative assessments are solely for student evaluation and instructor reflection and have no impact on institutional reporting.)
- ☐ Allow Faculty Annotations
- [Add Reflections Template](#)
- Assessment Quality & Improvement Reflection
- [Upload Evaluator Assessment Guide](#)



# Inputting your assessment data – Scorecard view

Nidia Gonzalajec as Faculty in LMC Mathematics Proxy Enabled Inbox Account Settings Support Log Out

Courses Summer 202 SLOs & Assessments Curriculum Results Explorer

MATH250 - Linear Algebra / 0177

## Generic assessment for training purposes

**Assessment Type**  
Summative Assessment

**Assessment Description**  
Generic assessment for training purposes

Actions

- Go to My Assessments
- Go to Action Plan
- Go to RFI Responses
- Go to Results Explorer
- Download Assessment Guide
- Download Blank Scorecard
- Download Completed Scorecard
- Switch To Rubric View

	SLO	Meets expectations	2	1	0
Student 1	CSLO 1: Linear Systems Model situations with systems of linear equations, and find solutions of systems of equations using various methods appropriate to lower division linear algebra, including Gaussian and Gauss-Jordan elimination and inverse matrices. (PSLOs 3, 4; C-ID CO 1)	2	2		
	CSLO 2: Linear Algebra Reasoning Find and use bases, orthonormal bases, eigenvalues, and eigenvectors to solve problems and analyze scenarios in real-world contexts and in linear algebra. (PSLO 3; C-ID CO 2, 4)	2	2		
	CSLO 3: Dimensionality Find the dimension of spaces such as those associated with matrices and linear transformations, and explain the significance of these spaces and their dimensions. (PSLOs 1, 2, 3; C-ID CO 3)	2	2	1	
	CSLO 4: Proofs Prove basic results in linear algebra using appropriate proof-writing techniques such as linear independence of vectors; properties of subspaces; linearity, injectivity and surjectivity of functions (one-to-one and onto functions and transformations); and properties of eigenvectors and eigenvalues. (PSLOs 1, 2; C-ID CO 5)	2	2	1	
Student 2	CSLO 1: Linear Systems Model situations with systems of linear equations, and find solutions of systems of equations using various methods appropriate to lower division linear algebra, including Gaussian and Gauss-Jordan elimination and inverse matrices. (PSLOs 3, 4; C-ID CO 1)	2	2	1	
	CSLO 2: Linear Algebra Reasoning Find and use bases, orthonormal bases, eigenvalues, and eigenvectors to solve problems and analyze scenarios in real-world contexts and in linear algebra. (PSLO 3; C-ID CO 2, 4)	2	2	1	
	CSLO 3: Dimensionality Find the dimension of spaces such as those associated with matrices and linear transformations, and explain the significance of these spaces and their dimensions. (PSLOs 1, 2, 3; C-ID CO 3)	2	2	1	
	CSLO 4: Proofs Prove basic results in linear algebra using appropriate proof-writing techniques such as linear independence of vectors; properties of subspaces; linearity, injectivity and surjectivity of functions (one-to-one and onto functions and transformations); and properties of eigenvectors and eigenvalues. (PSLOs 1, 2; C-ID CO 5)	2	2	1	
Student 3	CSLO 1: Linear Systems Model situations with systems of linear equations, and find solutions of systems of equations using various methods appropriate to lower division linear algebra, including Gaussian and Gauss-Jordan elimination and inverse matrices. (PSLOs 3, 4; C-ID CO 1)	2	2	1	
	CSLO 2: Linear Algebra Reasoning Find and use bases, orthonormal bases, eigenvalues, and eigenvectors to solve problems and analyze scenarios in real-world contexts and in linear algebra. (PSLO 3; C-ID CO 2, 4)	2	2	1	
	CSLO 3: Dimensionality Find the dimension of spaces such as those associated with matrices and linear transformations, and explain the significance of these spaces and their dimensions. (PSLOs 1, 2, 3; C-ID CO 3)	2	2	1	
	CSLO 4: Proofs Prove basic results in linear algebra using appropriate proof-writing techniques such as linear independence of vectors; properties of subspaces; linearity, injectivity and surjectivity of functions (one-to-one and onto functions and transformations); and properties of eigenvectors and eigenvalues. (PSLOs 1, 2; C-ID CO 5)	2	2	1	

The assessment guide (if uploaded by whomever created the eLumen assessment) can be found by hovering over the *Actions* drop-down menu then selecting Download Assessment Guide.

# Summary of Consistency Best Practices

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Communicate early and often with colleagues teaching the same course

Choose the assessment instrument together

Create a scoring rubric together

Host a *norming* session so that everyone scores their assessments in a similar manner

Create a shared document with all corresponding materials

- Shared questions/activities/prompts
- Rubrics
- Sample work for different scoring levels of the rubric (one for each SLO)
- Save this document for uploading as an *evaluator guide* within eLumen.

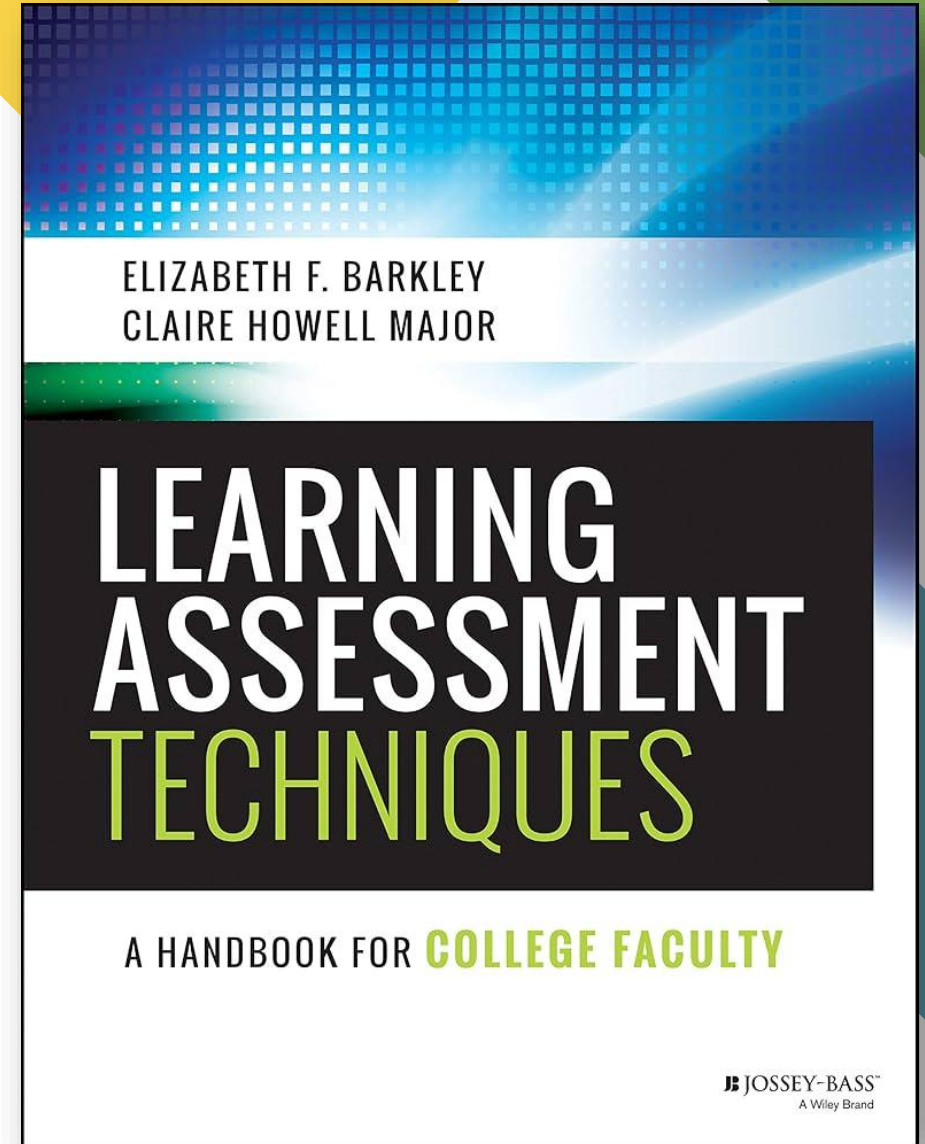
# References

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The text used to guide this presentation, and regularly referenced by the TLC team is pictured.

It may be a good addition to each departmental library

Also referenced: [eLumen Assessment Basics](#) from the TLC website





# Thank you

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The TLC Team

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