

# Assessment of Student Learning

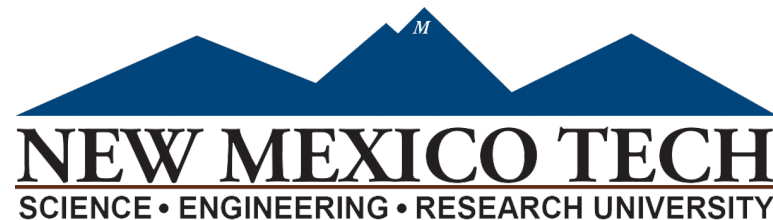
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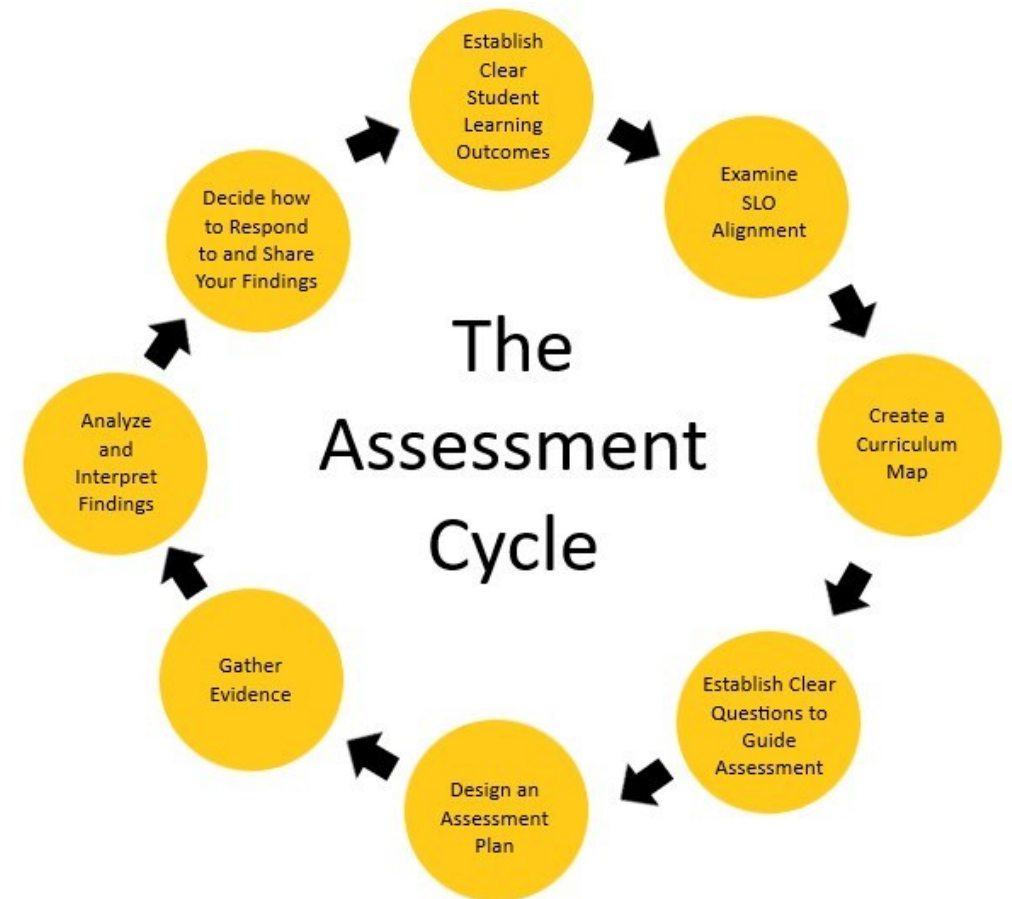


# Assessment

The process of gathering and analyzing information in order to develop an understanding of what students know and can do with their knowledge as a result of their educational experiences.

Image retrieved from

<https://uwm.edu/academicaffairs/facultystaff/assessment-of-student-learning/program-assessment-cycle/>



# Levels of Assessment

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- Course
- Program/department
  - Undergraduate
  - Graduate
  - General Education
- Co-curricular
- Institute

# Value of Assessment

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- Cycle of reflection and improvement.
  - Identify potential areas of improvement that guide decisions about strategic investments (e.g., time, resources).
- Encourages us to do what we should already be doing – focus on what our students need to know and be able to do.
- Essential for HLC and ABET accreditation.

# Relation to Accreditation

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## HLC Criterion 4. Teaching and Learning: Evaluation and Improvement

*The institution demonstrates responsibility for the quality of its educational programs, learning environments, and support services, and it evaluates their effectiveness through a process designed to promote continuous improvement.*

Expectations are increasing.

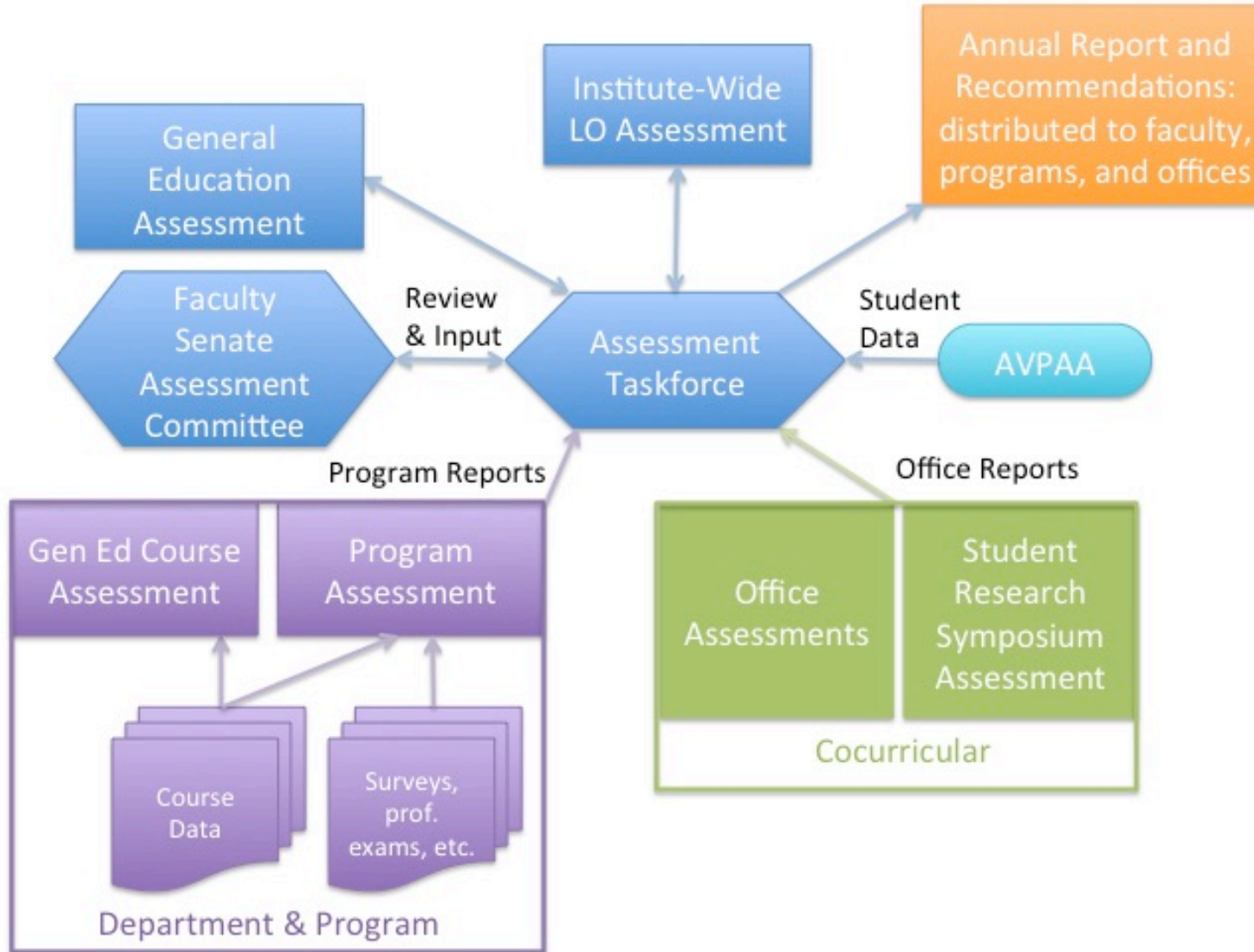
Substandard assessment gets schools in big trouble (e.g., increased reporting and oversight; potential loss of access to federal funding).

# Components of Assessment

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- Learning outcomes – skills and knowledge that students need.
- Methodology – ways of measuring attainment of outcomes.
- Evaluation and Share Findings.
- Actions (that can include monitoring of their impact).

# New Mexico Tech Assessment Workflow



# Process is Key

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- ❑ Have clear student learning outcomes.
- ❑ Well defined curricular mapping (e.g., Introduce, Reinforce, Mastery).
- ❑ Clearly defined assessment approach (e.g., measures that can be assessed).
- ❑ Periodic assessment and documentation (e.g., not every outcome has to be assessed every year).
- ❑ Periodic evaluation (e.g., SLOs analyzed every two to three years).
- ❑ Documented discussions resulting in actions with appropriate follow-up.

**Failing an outcome is ok as long as you follow your process that results in improvements.**



# Curricular Mapping

LEARNING OUTCOMES (I = Introduce; R = Reinforce; M = Mastery and A = Assessment Opportunity)	REQUIRED COURSES											
	101	102	201	220	250	301	302	303	401	402	435	490
Demonstrate communication skills appropriate to the field of psychology.	I				I	M			R		M	M, A
Demonstrate knowledge of the historical and global contexts of the field of psychology	I	I	R								R,A	
Demonstrate knowledge of the biological bases of behavior and development.		I			R	R	M, A					
Outline the major ideas behind the individual differences perspective.	I	I	R		R,A							
Distinguish between major statistical tests and be able to choose appropriate tests for specific data sets.	I	A								R		M
Develop an original research question that builds on an existing body of knowledge.	I	R		R			R					M, A
Select methodology appropriate to a particular research question.						I			R, A			M
Properly document references and citations in APA style.						I	I	I	R		M	M, A
Demonstrate an understanding of the ethical principles of psychology as established by the APA.	I			R, A					R			M
Evaluate real world examples in terms of course content and knowledge, applying critical thinking skills.	I	I	R	R	R	R	R	R	M	R, A		M

# Key to Developing Student Learning Outcomes

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- Clear and measurable.
- Don't compound (as you don't want to assess every modifier).
- Focus the outcomes and limit their number to most important ones.
- Focus on skills rather than content knowledge.

# Assessment: Step by Step

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- ❑ For a SLO, identify a measure (e.g., presentation skill from final design report).
- ❑ Choose a benchmark (e.g., we want 85% of our groups to get a 75% or better).
- ❑ Evaluate data for measure (e.g., 70% of the groups got >75%).
- ❑ Propose a change to the curriculum (e.g., we will add a lecture on how to present data in excel).
- ❑ Collect and analyze data with this measure again – **close the loop** (e.g., Did it work? If not, now what are you going to do? If so, what about the other 15% or choose a new SLO [for non-ABET programs]?).
- ❑ THE CHANGES DON'T NEED TO WORK, BUT WE MUST SHOW IF THEY DID OR NOT.

# Assessment Measures

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- ❑ Direct are preferred (and required) over indirect.
  - Direct = coursework, evaluations by advisory board or faculty.
  - Indirect = self evaluation, surveys.
- ❑ Data should be gathered from core courses (formative or summative such as capstone), not electives.
- ❑ Final exams are not assessment measures but a specific problem targeting a specific outcome can be. Grades are not assessment measures.
- ❑ Based on the outcome you can use a specific quiz, lab, project, report, homework/exam problem as a direct measure.
- ❑ No need to track students or cohorts, but you can.

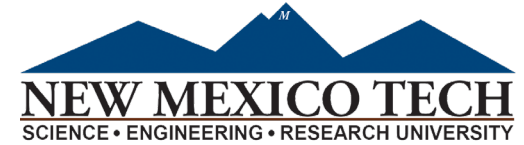
# Timeline

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- ❑ **October 1st:** Assessment reports due to the Office of Academic Affairs.
- ❑ **December 1st:** Assessment reports returned to departments with comments. Revisions may be requested.
- ❑ **March 1st:** Final (in some cases, revised) reports included in the Department Activity Reports (DARs).

# Program-level Accreditation: ABET

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- Accreditation runs on a 6 year cycle.
- You are accredited or not\*\*, i.e. there is no grade of accreditation like 5 Star Accreditation.
- Programs (not departments) are accredited, e.g. Civil and Environmental are separate. All tracks must meet criteria.
- B.S. degrees are accredited (in our case) not M.S., M.Eng., or Ph.D.
- All but CS are EAC accredited, so criteria for CS are different.
- ABET terms issues as a Concern, Weakness, or Deficiency in increasing order of severity.

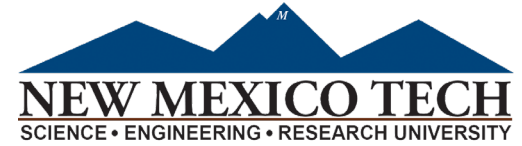
# NMT ABET REMINDERS

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- We are up for reaccreditation in 2023 which means:
  - NMT will request reaccreditation in January 2022;
  - We will submit a self study for each program in June 2022 (except Comp Sci);
  - Evaluators will be chosen in June-ish 2022;
  - We will be visited in Fall 2022.
- All programs are seeking reaccreditation, but the next team will know what the last team said.

# Institution-level Accreditation: Higher Learning Commission (HLC)

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- NMT is on the Open Pathway 10-year cycle.
- Years 1–3: Prepare Assurance Filing.
- Year 4: Assurance Review.
- **Years 5–7: Quality Initiative Proposal (hopefully to be submitted this academic year).**
- Years 7–9: Quality Initiative Report.
- Year 10: Comprehensive Evaluation for Reaffirmation