Senate Forum
Assessment Program & Process

December 5, 2013

Assessment Council

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ASSESSMENT COUNCIL 2013-4

Chair	Christa Walck, Associate Provost
COE	Leonard Bohmann, Associate Dean
	Brian Barkdoll (Civil & Env. Eng.)
CSA	John Jaszczak, Associate Dean
	Karla Kitalong (Humanities)
SBE	Dean Johnson
SOT	John Irwin
SFRES	Andrew Storer
St Aff	Beth Lunde
Lib	Ellen Marks
CTL	Jean DeClerck

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The BIG picture

- HLC expects a more robust assessment system and evidence → we need HLC accreditation
- It's more work for us, but it's worth it
- We need to work together
- Standardization and consistency make results more credible
- We don't assess everything every year, but we plan for what will be assessed and when
- Assessment is about STUDENT LEARNING, not faculty evaluation

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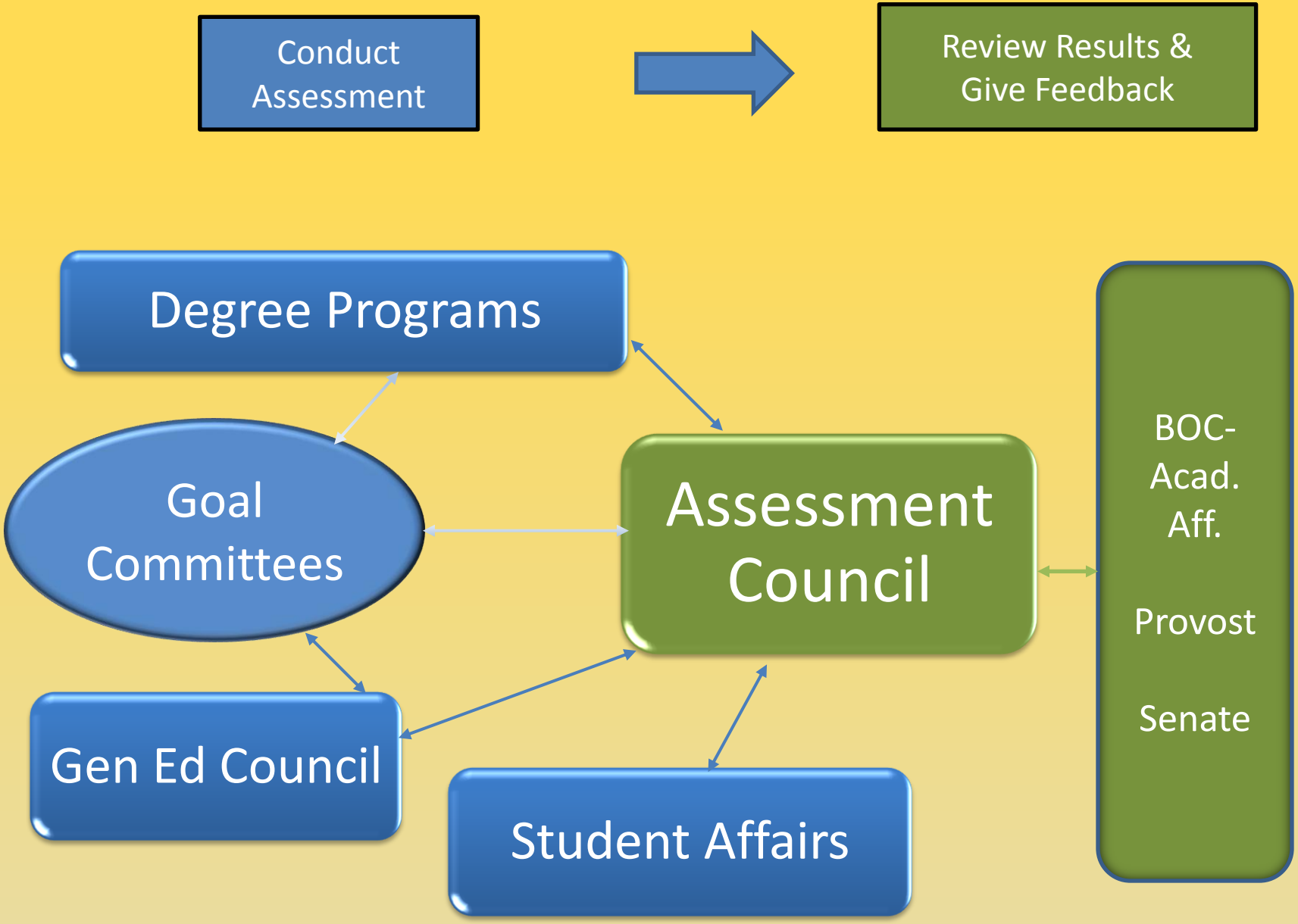

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Assessment Council

- Reviews all assessment results annually and provides feedback for improvement
  - Degree program reports
  - Gen Ed Council reports
  - Student Affairs reports
  - NSSE and other survey data
- Monitors how the assessment system is working and recommends improvements
- Works with CTL to support assessment
- Keeps records and generates reports
- Reports results and recommendations to Senate, Deans, Provost, BOC

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Four Questions

1. What is assessment?
2. Why are we doing assessment?
3. How are we doing assessment?
   - General Education Assessment
   - Degree Program Assessment
   - Professional Accreditation
4. What support is available for assessment?

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What is assessment?

The systematic collection of evidence of student learning in order to take action to improve.

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Why are we doing assessment? Accountability

External accountability – outcomes oriented

- Threats
  - We do not want U.S. Department of Education to expand NCLB to higher ed.
  - We do not want state legislatures to tie funding to test scores.
- Response of accreditors = emphasize assessment of student learning

Internal accountability – improve student learning

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HLC requires it – we are on the edge…

- Required for federal student aid
- Necessary for ABET/AACSB/SAF professional accreditation
- Unlikely we would get federal research funding without it

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Isn’t ABET enough? No.

- HLC 1P2c O While it is positive that MTU recognizes the independence of its programs to determine learning outcomes, academic assessment at Michigan Technological University may be strengthened by sharing best practices in assessment between units and developing a common framework and protocol that may enable regular, system-wide assessment to occur and ensure that institutional objectives are reached.

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- HLC 1P17 O Currently, assessment of student learning at Michigan Technological University has focused on program review and has been unit driven. Though program assessment of culminating work, where used, is an important aspect of ensuring student learning, Michigan Technological University has an opportunity to correlate student achievement of learning and development objectives across all units, thus ensuring that student achievement of expected (institutional) learning outcomes is central to awarding of a degree.

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HLC's New Criteria

More emphasis on teaching, learning, and assessment of student learning.

New Criteria
1. Mission
2. Integrity: Ethical and Responsible Conduct
3. Teaching and Learning: Quality, Resources and Support
4. Teaching and Learning: Evaluation and Improvement
5. Resources, Planning, and Institutional Effectiveness

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HLC Criteria 3 & 4

Student achievement of institutional learning goals is central to awarding of a degree.

- Learning goals for all degree programs.
- Learning goals for undergraduate general education.
- Effective processes for assessment of student learning and achievement of learning goals.
- Methodologies that reflect good practice, including substantial participation of faculty.

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How are we doing assessment?

- First we put a program into place - a “common framework…to ensure institutional objectives are met.”
  - USLGs
  - LEAP rubrics → Michigan Tech USLG rubrics
  - Goal Committees

- Then we put a process into place for “regular, system-wide assessment.”
  - Annual assessment reports
  - Gen Ed Assessment

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University Student Learning Goals

- Established in 2011 in response to HLC concerns
- Require assessment to assure achievement

1. Disciplinary Knowledge (aka Degree Program Goals)
2. Knowledge of Physical and Natural World
3. Global Literacy and Knowledge of Human Culture
4. Critical and Creative Thinking
5. Communication
6. Information Literacy
7. Technology
8. Values and Civic Engagement

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Why are there EIGHT goals?

When we compared

- University strategic goals
- ABET a-k
- AACSB & SAF objectives
- LEAP Essential Learning Outcomes (for CSA)

these were the goals that were consistently important for all students to succeed.

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All Michigan Tech Students should achieve these goals to graduate.

This will require collective effort.

- General Education Program AND
- Degree Programs
  - disciplinary goals
  - opportunities to practice and improve competencies developed in general education AND
- Student Affairs programming
  - co-curricular opportunities to practice and improve competencies.

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Why are we using LEAP VALUE rubrics to assess USLGs?

- Provide a common, consistent framework for assessment of USLGs across disciplines.
- Assess work students produce as a part of their curriculum
- Validated by AAC&U: A faculty-developed response to concerns about higher education quality raised by DOE
- Used nationwide at 1000 institutions.
- Can adapt these rubrics → Michigan Tech rubrics
- Can map existing rubrics onto these rubrics.

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What is a rubric? Sample Communication Rubric

Written communication is the development and expression of ideas in writing. Written communication involves learning to work in many genres and styles. It can involve working with many different writing technologies, and mixing texts, data, and images. Written communication abilities develop through iterative experiences across the curriculum.

Levels are cumulative so that the Capstone level incorporates achievements at levels 1-3	Beginning Level 1	Developing Level 2	Proficient Level 3	Exemplary Level 4
Context of and Purpose for Writing	Demonstrates minimal attention to context, audience, purpose, or task	Demonstrates awareness of context, audience, purpose and task	Demonstrates adequate consideration that aligns work to considerations of audience, context, purpose, and task	Demonstrates a thorough understanding that focuses all elements of the work.
Organization and Conventions	Develop unclear or inconsistent organizational pattern; shows little awareness of genre and disciplinary conventions	Develop organizational pattern unevenly; follows disciplinary or task expectations at a basic level of understanding	Develop recognizable organizational pattern that structures the whole work; uses disciplinary or task conventions consistently	Develop organizational pattern that enhances flow and cohesiveness through the whole work; demonstrates detailed attention to and successful execution of disciplinary or task conventions
Content Development	Is simplistic in some parts of the work	Is appropriate through most of the work	Is compelling through the whole work	Demonstrates subject mastery
Sources and Evidence	Minimally supports ideas in the writing.	Demonstrates an attempt to use credible and/or relevant sources	Demonstrates consistent use of credible, relevant sources	Demonstrates skillful use of high-quality, credible, diverse, and relevant sources
Control of Syntax and Mechanics	Language use impedes meaning because of errors.	Appropriate language use that conveys meaning although may have noticeable errors.	Straightforward language use that clearly conveys meaning with few errors.	Skillful language use to communicate meaning with clarity and fluency and virtually error-free.

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Goal Committees

Goal Committees are being established for each USLG (except Goal 1 Disciplinary).

- Faculty from multiple disciplines with expertise or interest in goal
- Tasks:
  - Adapt LEAP rubric for Michigan Tech
  - Provide support – Canvas course, workshops
  - Conduct assessment of General Education
  - Sample evidence of achievement of all students from orientation to graduation

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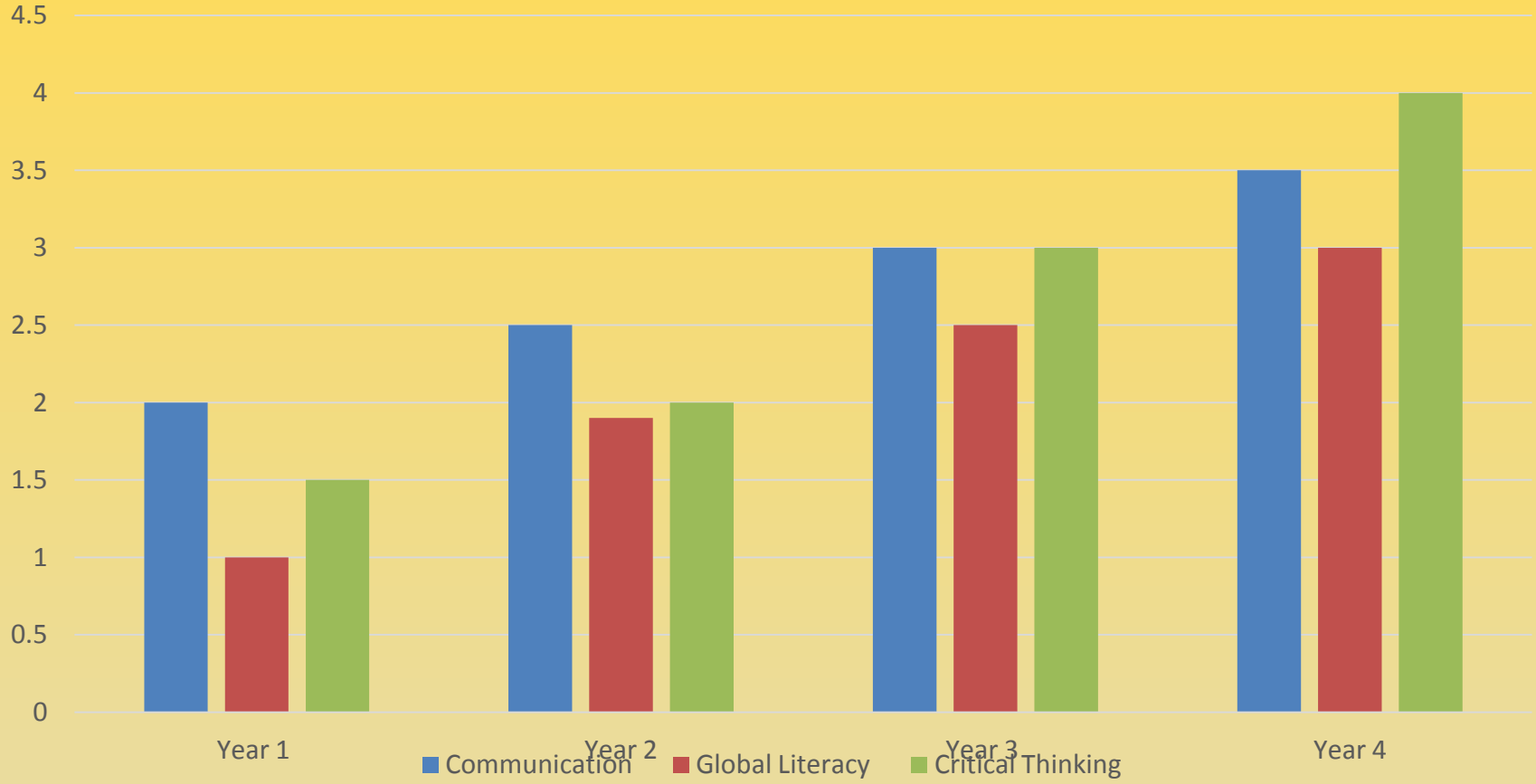
Goal committees will use samples of student work to chart student progress on learning goals



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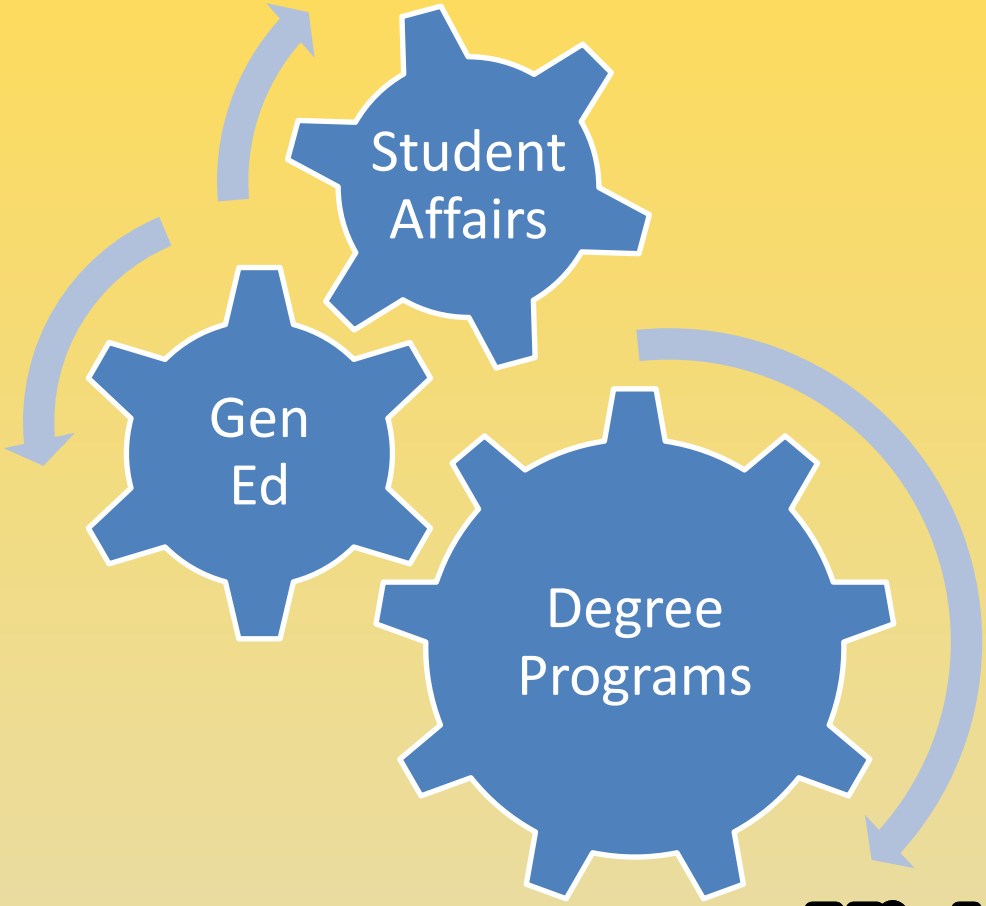
So, if this is where we are going (achieve learning goals),

how will we get there?

And, how will we know we got there?

Assessment **Process**

We are still developing our assessment process…



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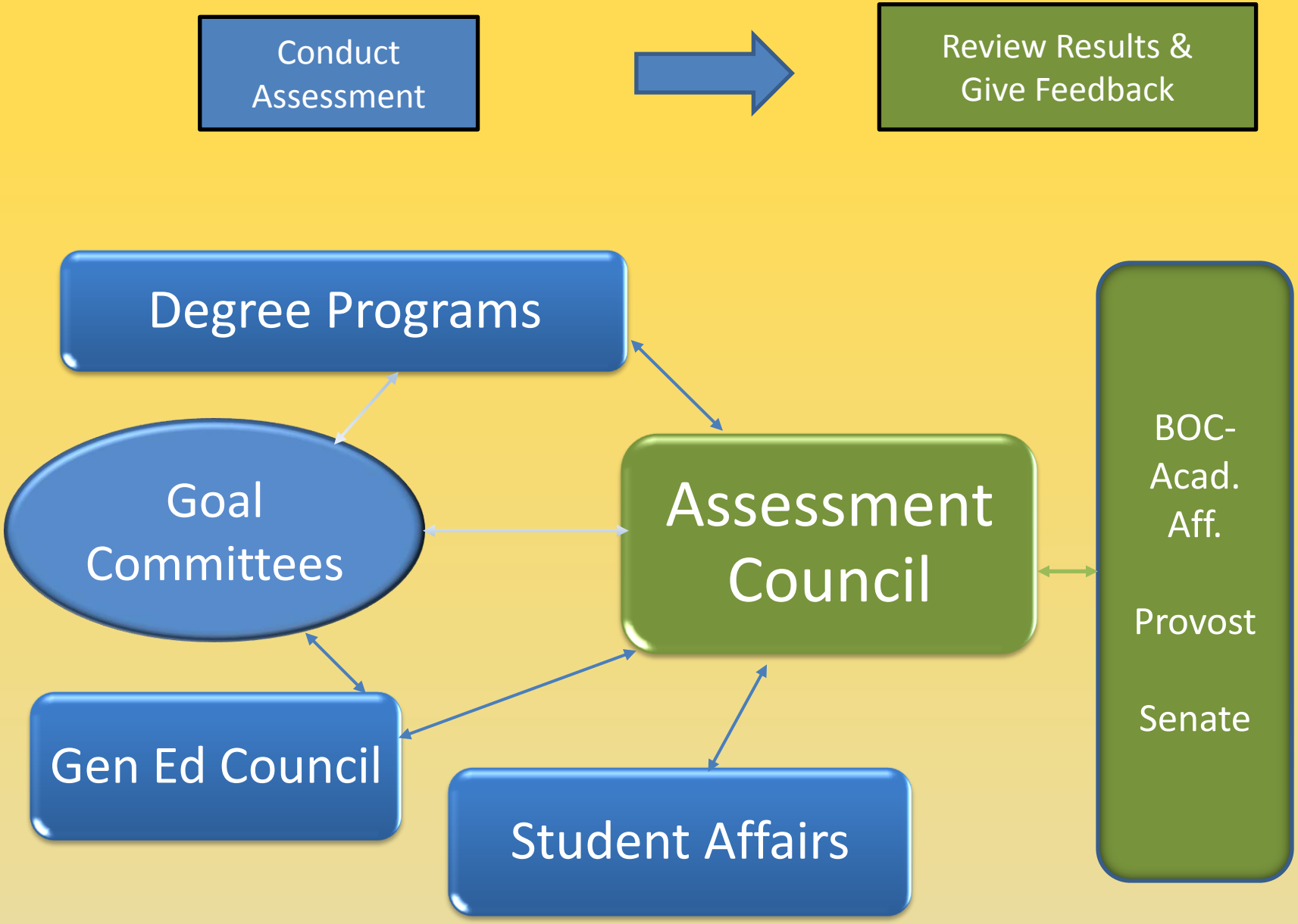

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Degree Program Assessment Process

Degree programs assess two goals each year.

- One goal is chosen by program
- One USLG is designated by Assessment Council for all programs → use USLG (adapted LEAP) rubric
- Emphasis on embedded, direct assessment of USLGs – use student work in a required course
- Program faculty determine: Was target met? What actions will be taken?
- Annual report sent to Assessment Council for review and feedback

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Annual Assessment Report

LEARNING GOALS	ASSESSMENT ACTIVITY	WHEN?	RESULTS 1	ACTION PLANNED WHEN?	RESULTS 2
1	**Type:** **__ Course Direct** **__ Other Direct** **__ Indirect** **Brief description:** **Target:** **University Goal:**		**Date:**		**Date:**
2	**Type:** **__ Course Direct** **__ Other Direct** **__ Indirect** **Brief description:** **Target:** **University Goal:**		**Date:**		**Date:**

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Degree Program Assessment Process

Campus-wide USLG schedule:

- 2013-14 Communication
- 2014-15 Global Literacy & Human Culture
- 2015-16 Information Literacy
- 2016-17 Critical Thinking
- 2017-18 Values & Civic Engagement

Note: Degree programs should provide opportunities for students to practice and apply these competencies.

Goal Committee role

- May ask for evidence from degree programs and assess evidence for achievement across multiple years and disciplines

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Feedback on Assessment Reports

All programs will receive feedback from Assessment Council using a simple rubric.

Criteria	Score	Explicit	Measurable/Observable
Learning Goal A learning goal specifies what students will know or be able to do when they graduate from the academic degree program.	**4**	Explicitly defines what student will know or do	Describes an observable and measurable behavior or product
	3	Does not explicitly define what students will know or do; states a broad outcome that needs to be further specified	Describes a potentially observable and measurable behavior or product
	2	Unclear or incorporates multiple outcomes	Describes something for which it is difficult to collect evidence
	1	No learning goals, or focusses on program mission or processes	Does not identify something observable or measurable

GENERAL EDUCATION

The General Education program has adopted six USLGs:

- 2 Knowledge of Physical and Natural World
- 3 Global Literacy and Knowledge of Human Culture
- 4 Critical and Creative Thinking
- 5 Communication
- 6 Information Literacy
- 8 Values and Civic Engagement

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General Education Assessment Process

- Goals are mapped onto Gen Ed program
  - Four core courses – Goals 3, 4, 5, 6, 8
  - HASS – Goals 3, 4, 5, 8
  - STEM – Goal 2
- Goal Committees will conduct the assessment of student work for that goal every year
  - Collect evidence of student achievement
  - Invite faculty teaching the courses to participate in assessment activity → identify actions to improve
  - Reassess to close the loop

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Learning Goals

GOALS University USLG	1 Discip-linary	2 Natural/ Physical World	3 Global/ Culture	4 Crit/ Creat. Think	5 Comm	6 Info Lit	7 Tech	8 Values & Civic Eng.
Gen Ed Program		X	X	X	X	X		X
Degree Program	X					X	X	
Course	Discipline			General Education				
Student Affairs			X		X			X

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What support is available for assessment?

- Instructional Design & Assessment Specialist
  Jean DeClerck, jsdecler@mtu.edu
  - writing learning goals
  - developing curriculum maps
  - designing assignments for assessment
  - adapting rubrics
  - interpreting feedback
- Assessment Website: www.mtu.edu/assessment
- USLG Canvas Course: https://mtu.instructure.com/courses/837596
- CTL Workshops – announced in Tech Today
- COE – Leonard Bohmann, Associate Dean ljbohman@mtu.edu
  CSA – John Jaszczak, Associate Dean jazsczak@mtu.edu

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A few more FAQs…

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What about ABET?

A group is now working on how to align and integrate ABET assessment and University assessment.

- USLGs were created to align with ABET a-k
- Minimize duplication of effort
- Strengthen evidence for ABET reporting of “gen ed”
- Chair – Jean Kampe, Engineering Fundamentals

Why do I need learning goals on my syllabus?

- So students will know your expectations
- So it is clear to reviewers how your course meets learning goals in your degree program or general education

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Who assesses student work?

- Faculty in degree programs assess work in degree programs
- Faculty in goal committees and faculty teaching gen ed courses assess work in gen ed courses

What about confidentiality?

- Names of students and instructors are stripped from student work prior to assessment
- All syllabi should have this link:

http://www.admin.mtu.edu/usenate/policies/p312-1.htm

Student work products (exams, essays, projects, etc.) may be used for the purposes of university, program, or course assessment. All work used for assessment purposes will not include any individual student identification.

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THANK YOU!

- Assessment webpage: http://www.mtu.edu/assessment/
- University Student Learning Goal Help Resources https://mtu.instructure.com/courses/837596
- HLC Criteria
  - HLC direct link http://www.hlcommission.org/Information-for-Institutions/criteria-and-core-components.html
  - Highlighted copy http://www.mtu.edu/provost/accreditation/accreditation-criteria/criteria.pdf

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For more information,
read on.

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A little history…

Year	Action
2009	HLC response to Michigan Tech Systems Portfolio emphasized assessment deficiencies.
2010-11	Assessment Council reconvened and reconstituted to address AQIP/accreditation assessment deficiencies.
	Assessment and Gen Ed Councils jointly developed USLGs – approved by President June 2011.
2011-12	Assessment Council conducted workshops on assessment.
	College of Sciences & Arts established program learning goals.
	AQIP Quality Checkup March 2012 – reaffirmation August 2012.
2012-3	College of Sciences & Arts assessed selected program learning goals.
	Annual Assessment Reporting for all degree programs now required.
	Schedule of assessment of non-disciplinary learning goals is published: Communication in 2013-4.
	Communication & Global Learning Committees established.
	AAC&U LEAP rubrics begin to be adapted for Michigan Tech assessment.

A little history…

Year	Action
2013-4	Associate Dean for Undergraduate Education with responsibility for assessment is appointed in College of Sciences & Arts.
	Assessment specialist is hired for Jackson Center for Teaching & Learning.
	Workshops & Coffee Chats on assessment.
	New Website on Assessment at Michigan Tech: www.mtu.edu/assessment
	Information Literacy Committee established. Planning to establish Goal Committees for • Knowledge of Physical and Natural Sciences • Critical and Creative Thinking • Values and Civic Engagement
	Aligned General Education program with USLGs.

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HLC – 2009 AQIP Evaluation of our Systems Portfolio for Cat. 1 "Helping Students Learn"

O = Opportunity (aka weakness)

- 1P1b O The General Education program underwent significant revision about ten years ago and was to be reviewed periodically. However, there is no indication of a systematic review process being established. There is an opportunity here to put into place a formal review process for the General Education program. Regularly scheduled reviews may offer an opportunity to address relevant matters in a more timely manner.
- 1P2c O While it is positive that MTU recognizes the independence of its programs to determine learning outcomes, academic assessment at Michigan Technological University may be strengthened by sharing best practices in assessment between units and developing a common framework and protocol that may enable regular, system-wide assessment to occur and ensure that institutional objectives are reached.

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- 1I2b O While the institution declares its commitment to creating a culture in which students learn, it has an opportunity to clearly identify improvements in culture and infrastructure based on appropriate data for improved performance results for helping students learn.

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HLC – 2009 AQIP Evaluation of Cat. 1 "Helping Students Learn"

O = Opportunity (aka weakness)

- 1P18b O Michigan Technological University indicates that they have a faculty driven process for assessing student learning at the course, program and General Education level, however, no examples or specific information is provided to fully explain these processes.

- 1R3b OO While there are noteworthy efforts being made to assess student learning in the colleges of engineering and technology, there is no evidence to indicate that the other three colleges have similar or comparable initiatives in place at this time. The institution should look at how to develop similar tools for the non-nationally assessed disciplines.

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How we developed USLGs

Michigan Tech Goals and Strategic Plan	LEAP Categories & Essential Learning Outcomes	Michigan Tech General Education Goals 1998	ABET Eng	ABET Eng Tech	SAF	AACSB	Michigan Tech Learning Goals
Grounded in science, engineering, technology, sustainability, the business of innovation, and an understanding of the social and cultural contexts of our contemporary world	**Knowledge**	Knowledge of broad range of topics and disciplines complementary to their major	apply knowledge of mathematics, science, and engineering	Appropriate mastery of the knowledge, techniques, skills, and modern tools of their Disciplines	technical skills and subject areas	Use of information technology	Disciplinary Knowledge
Cultivate intellectual diversity and a worldview adapted to the needs and challenges of the 21st century	Human Cultures	Knowledge of human cultures	Knowledge of contemporary issues	apply current knowledge and adapt to emerging applications of mathematics, science, engineering, and technology	cultural awareness	Competent in uses of technology and information systems	Knowledge of human cultures and the physical and natural world
Develop students' global skills through study of other languages and cultures	Physical & Natural World	Modes of inquiry – assumptions, methods, values and goals of…	Design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability	conduct, analyze and interpret experiments	mathematics, natural and physical sciences	Dynamics of the global economy	Global Literacy
Encourage participation in international experiences		Knowledge area goals Literature and language Visual arts… Social and behavioral analysis Economic institutions Epistemology and cognition Ethics and moral philosophy Historical studies Natural and physical science	use the techniques, skills, and modern engineering tools necessary for engineering practice.	apply creativity in the design of systems, components, or processes	social sciences	Multicultural and diversity understanding	Critical & Creative Thinking
Understand, develop, apply, manage and communicate science and technology	Sciences Mathematics	Mathematical modeling and problem solving in sciences, math, engineering, economics, computer science		Mathematics content must provide students with the skills to solve technical problems	business & computer skills	Prepare for a business environment that is global in scope	Communication
Prepare students to create the future				Physical/natural sciences: develop expertise in experimentation, observation, measurement, and documentation		Global, environmental, political, economic, legal and regulatory context for business	Information Literacy
Distinctive and rigorous discovery-based learning experience							Technology
New and emerging interdisciplinary areas Entrepreneurship	Engagement with big questions, both contemporary and enduring	Quantitative skills Statistical techniques		Social Sciences/Humanities: understanding of diversity and the global and societal impacts of technology.			Values and Civic Engagement

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How we developed USLGs

Michigan Tech Goals and Strategic Plan	LEAP Categories & Essential Learning Outcomes	Michigan Tech General Education Goals 1998	ABET Eng	ABET Eng Tech	SAF	AACSB	Michigan Tech Learning Goals
Prepare students to create the future Understand, develop, apply, manage and communicate science and technology Innovate Enhance communication skills...and creative processes Strong leadership and team-building capabilities, critical thinking skills	**Intellectual and Practical Skills** Critical & creative thinking Inquiry & analysis Written & oral communication Quantitative literacy Information literacy Teamwork & problem solving	Fundamental scholastic habits of careful reading, communication, critical reasoning, balance, analysis and argument Intellectual habits and values: the nature of inquirty, evidence and informed reasoning critical reasoning, etc. Learning as a social process Skills: DM, goal setting, communication, problem solving	design and conduct experiments, as well as to analyze and interpret data communicate effectively function on multidisciplinary teams identify, formulate, and solve engineering problems engage in life-long learning	apply creativity in the design of systems, components, or processes communicate effectively function effectively on teams identify, analyze and solve technical problems engage in lifelong learning	Oral and written Communication. Human behavior: leadership; team building and dynamics; planning; decision-making; ethics. leadership	Communication abilities Analytical skills Reflective thinking skills Problem-solving abilities Statistical data analysis ...support decision making processes Group and individual dynamics	Communicate effectively orally and in writing to a wide variety of audiences Work effectively in groups [critical thinking: understand broad impacts analyze reason logic use evidence reflective synthesize creative
Prosperous, sustainable world Ethical awareness Leadership Service Civic responsibility and connections to public policy issues Foster economic growth Sustainable economic and social development	**Personal and Social Responsibility** Civic knowledge & engagement Intercultural knowledge & competence Ethical reasoning & action Foundations and skills for lifelong learning	Respect for diversity and awareness of complex contexts of their study and work Understanding the whole person -wellness education Moral and ethical reasoning Environmental awareness Social and cultural awareness	Design a system ... within realistic constraints such as economic, environ-mental, social, political, ethical, health and safety, manufacturability, and sustainability Understanding of professional and ethical responsibility Understand the impact of engineering solutions in a global, economic, environmental, and societal context	Understand professional, ethical and social responsibilities respect for diversity and a knowledge of contemporary professional, societal and global issues commitment to quality, timeliness, and continuous improvement	Environmental ethics and values Be able to address moral and ethical questions	Ethical understanding and reasoning abilities Ethical and legal responsibilities in organizations and society Management responsiveness to ethnic, cultural and gender diversity	Be able to address moral and ethical questions Understand the impact of [personal and professional practice] in a global, economic, environmental and societal context.
Understand, develop, apply, manage and communicate science and technology Promote integrative and collaborative programs	**Integrative and Applied Learning** Synthesis and advanced accomplishment across general and specialized studies	Ability to apply multiple disciplinary perspectives in interpretation, analysis and creative problem solving		Culminating experience	Culminating experience		[synthesize]

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Michigan Tech's Assessment Program

- General Education - 6 USLGs
- Degree Program Goals
  - College of Engineering – ABET
  - School of Technology – ABET
  - School of Business & Economics – AACSB
  - School of Forest Resources & Environmental Sciences - SAF
  - College of Sciences & Arts – new program goals 2012/3
- Course Goals
  - Senate →Course Syllabus requirement includes learning outcomes/objectives and IRB assessment language
  - Should map onto Program Goals or Gen Ed Goals
- Student Affairs Learning Outcomes

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Michigan may become a LEAP state

American Association of College & Universities (AAC&U) developed LEAP program (Liberal Education & America's Promise)

- LEAP Campus Network – Michigan Tech is a LEAP Campus
- LEAP States Initiative – Michigan Tech is working with other Michigan public universities to make Michigan a LEAP state
  - Coordinated workshops
  - Share resources
  - Benchmarking Opportunity

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