



Student Learning Outcomes

Annual Report Process
2012-13

*J.B. Speed School
of Engineering*
30 May 2013

Student Learning Outcomes: Annual Report Process (2012-13)

What to expect

- Overview of University of Louisville's Student Learning Outcome Annual Report process for 2012-2013.
- Discuss as noted from 2011-12 submissions, areas needing improvement, provide general suggestions, and opportunity for Q&A.
- Next Steps: Transition to Compliance Assist.





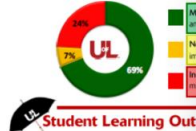
Student Learning Outcomes: Annual Report Process (2012-13)

SLO Assessments: At A Glance

J.B. Speed School of E
2011-12 Student Learning Outcome Assessments At-A-Glance

J.B. Speed School of Engineering	
Bioengineering	
Bioengineering	
Bioengineering	
Chemical Engineering	
Chemical Engineering	
Chemical Engineering	
Chemical Engineering	
Civil and Environmental Engineering	
Civil Engineering	
Civil Engineering	
Civil Engineering	
Civil Engineering	
Environmental Engineering	
Computer Engineering and Computer Science	
Computer Engineering and Computer Science	
Computer Engineering and Computer Science	
Computer Science	
Computer Science and Engineering	
Network and Information Security	
Electrical and Computer Engineering	
Electrical Engineering	
Electrical Engineering	
Electrical Engineering	
Electrical Engineering	
Industrial Engineering	
Industrial Engineering	
Industrial Engineering	
Industrial Engineering	
Industrial Engineering	
Industrial Engineering	
Engineering Management	
Mechanical Engineering	
Mechanical Engineering	
Mechanical Engineering	
Mechanical Engineering	

* New programs for the 2011-2012 academic year

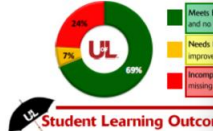


Student Learning Outcomes

J.B. Speed School of Eng
2011-12 Student Learning Outcome Assessments At-A-Glance

J.B. Speed School of Engineering	
Bioengineering	
Bioengineering	
Bioengineering	
Chemical Engineering	
Chemical Engineering	
Chemical Engineering	
Chemical Engineering	
Civil and Environmental Engineering	
Civil Engineering	
Civil Engineering	
Civil Engineering	
Civil Engineering	
Environmental Engineering	
Computer Engineering and Computer Science	
Computer Engineering and Computer Science	
Computer Engineering and Computer Science	
Computer Science	
Computer Science and Engineering	
Network and Information Security	
Electrical and Computer Engineering	
Electrical Engineering	
Electrical Engineering	
Electrical Engineering	
Electrical Engineering	
Industrial Engineering	
Industrial Engineering	
Industrial Engineering	
Industrial Engineering	
Industrial Engineering	
Industrial Engineering	
Engineering Management	
Mechanical Engineering	
Mechanical Engineering	
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Mechanical Engineering	

* New programs for the 2011-2012 academic year

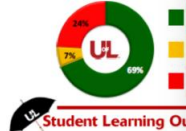


Student Learning Outcomes

J.B. Speed School of I
2011-12 Student Learning Outcome Assessments At-A-Glance

J.B. Speed School of Engineering	
Bioengineering	
Bioengineering	
Bioengineering	
Chemical Engineering	
Chemical Engineering	
Chemical Engineering	
Chemical Engineering	
Civil and Environmental Engineering	
Civil Engineering	
Civil Engineering	
Civil Engineering	
Civil Engineering	
Environmental Engineering	
Computer Engineering and Computer Science	
Computer Engineering and Computer Science	
Computer Engineering and Computer Science	
Computer Science	
Computer Science and Engineering	
Network and Information Security	
Electrical and Computer Engineering	
Electrical Engineering	
Electrical Engineering	
Electrical Engineering	
Electrical Engineering	
Industrial Engineering	
Industrial Engineering	
Industrial Engineering	
Industrial Engineering	
Industrial Engineering	
Industrial Engineering	
Engineering Management	
Mechanical Engineering	
Mechanical Engineering	
Mechanical Engineering	
Mechanical Engineering	

* New programs for the 2011-2012 academic year

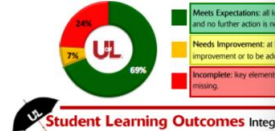


Student Learning Outcomes

J.B. Speed School of Engineeri
2011-12 Student Learning Outcome Assessments At-A-Glance

J.B. Speed School of Engineering		Degree
Bioengineering		
Bioengineering	BBE	
Bioengineering	MEN	
Chemical Engineering		
Chemical Engineering	BCH	
Chemical Engineering	MEN	
Chemical Engineering	MS	
Chemical Engineering	PHD	
Civil and Environmental Engineering		
Civil Engineering	BCE	
Civil Engineering	MEN	
Civil Engineering	MS	
Civil Engineering	PHD	
Environmental Engineering	Cert	
Computer Engineering and Computer Science		
Computer Engineering and Computer Science	BCC	
Computer Engineering and Computer Science	MEN	
Computer Science	MS	
Computer Science and Engineering	PHD	
Network and Information Security	Cert	
Electrical and Computer Engineering		
Electrical Engineering	BE	
Electrical Engineering	MEN	
Electrical Engineering	PHD	
Industrial Engineering		
Industrial Engineering	BE	
Industrial Engineering	MEN	
Industrial Engineering	MS	
Industrial Engineering	PHD	
Engineering Management	MEN	
Mechanical Engineering		
Mechanical Engineering	BMC	
Mechanical Engineering	MEN	
Mechanical Engineering	MS	
Mechanical Engineering	PHD	

* New programs for the 2011-2012 academic year were not required



Student Learning Outcomes Integrated Assessment of Student Learning

J.B. Speed School of Engineering

2011-12 Student Learning Outcome Assessments At-A-Glance

J.B. Speed School of Engineering	Degree	Meets Expectations	Needs Improvement	Incomplete	New Program*
Bioengineering					
Bioengineering	BBE	✓			
Bioengineering	MEN		✓		
Chemical Engineering					
Chemical Engineering	BCH	✓			
Chemical Engineering	MEN				
Chemical Engineering	MS			✓	
Chemical Engineering	PHD	✓			
Civil and Environmental Engineering					
Civil Engineering	BCE	✓			
Civil Engineering	MEN	✓			
Civil Engineering	MS	✓			
Civil Engineering	PHD	✓			
Environmental Engineering	Cert			✓	
Computer Engineering and Computer Science					
Computer Engineering and Computer Science	BCC			✓	
Computer Engineering and Computer Science	MEN			✓	
Computer Science	MS			✓	
Computer Science and Engineering	PHD			✓	
Network and Information Security	Cert			✓	
Electrical and Computer Engineering					
Electrical Engineering	BE	✓			
Electrical Engineering	MEN	✓			
Electrical Engineering	PHD	✓			
Industrial Engineering					
Industrial Engineering	BE		✓		
Industrial Engineering	MEN	✓			
Industrial Engineering	MS	✓			
Industrial Engineering	PHD	✓			
Engineering Management	MEN	✓			
Mechanical Engineering					
Mechanical Engineering	BMC	✓			
Mechanical Engineering	MEN	✓			
Mechanical Engineering	MS	✓			
Mechanical Engineering	PHD	✓			

* New programs for the 2011-2012 academic year were not required to submit an annual SLO submission for review.

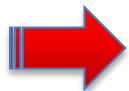


Student Learning Outcomes Integrated Assessment of Student Learning

Adapted from the University of South Florida
Version 1.3 (2013/03/08)

Student Learning Outcomes: Annual Report Process (2012-13)

Accreditation and Institutional Requirements



Student Learning Outcomes: Annual Report Process (2012-13)

2012-13 SLO Process Key Components



- Program Mission
- Program Goals
- Student Learning Outcomes
- Measures and Targets
- Findings
- Actions Plan (Closing the Loop)

Student Learning Outcomes: Annual Report Process (2012-13)

Program Mission

Key Components

- Align program's mission to university's mission
- Clear and Concise statement of the program's purpose
- Identify stakeholders in relation to students
- Articulate specific and unique features of the program



Student Learning Outcomes: Annual Report Process (2012-13)

Program Mission



Program Goal



Program Goal



Program Goal



Program Goal

Program Goals

Key Components

In general, program goals must:

- Align to program mission
- Identify key activities contributing to competencies

In addition, undergraduate programs must speak to:

- Reinforce General Education program (UG)
- Identify a **Culminating Undergraduate Experience** (UG)
- Address critical thinking as it relates to i2a (UG)

Student Learning Outcomes: Annual Report Process (2012-13)

More on Program Goals (Undergraduate)

- Program Goal 1: **Competency specific to the academic major**
- Program Goal 2: **Competency reinforcing the General Education Program**
- Program Goal 3: **Competency relating to the Culminating Undergraduate Experience (CUE)**
- Program Goal 4: **Critical Thinking related to Ideas to Action (i2a)**



Student Learning Outcomes: Annual Report Process (2012-13)

More on Program Goals (Graduate)

For Graduate Programs (3-4 Program Goals)

- Competency specific to the program



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Undergraduate



Program Goal



Student Learning Outcome

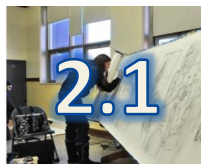


Student Learning Outcome

Graduate



Program Goal



Student Learning Outcome

Student Learning Outcomes

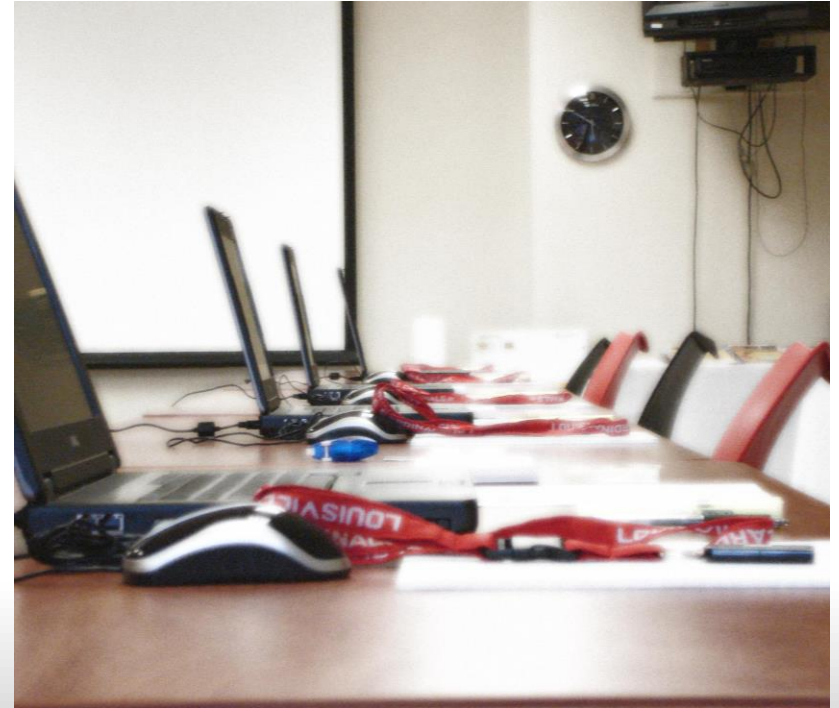
Key Components

- Align to a specific program goal
- Indicate knowledge, skill or perception gained or improved
- Identify measurable student learning activities
- Use Bloom's Taxonomy action verbs
- Reinforce General Education program (UG)
- Identify a **Culminating Undergraduate Experience** (UG)
- Address critical thinking as it relates to i2a (UG)

Distance Education & Certificate Programs

- Clearly identify whether a specific distance education program or certificate program are embedded in a pre-existing “traditional” program.
- Clearly identify whether elements of a distance education program or certificate program are distinct from existing “traditional” program.
- Separate report will be required for programs that are stand alone.

“Has the institution developed student learning competencies for the courses/programs offered by distance education? If these are the same competencies for courses/programs offered by *traditional* methodologies, is assessment identified for distance learning students separate from students taking courses by *traditional* methodologies?”



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Student Learning Outcome



Direct Measures



Indirect Measures

Measures

Key Components

- Align to a specific SLO
- Direct measure supporting SLO
- Indirect measure supporting SLO
- Detail how students' work will be evaluated
- Rubric(s) with range of scores

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More on Direct Measures

Direct measures provides students the opportunity **to show** (provide evidence) what they learned. Therefore, faculty will need to *identify* and *measure* **observable behaviors** or **actions** by the learner.

Examples for undergraduates

- Field experiences where students demonstrate skills sets in the field
- Capstone experience
- Portfolio
- Research papers
- Presentations
- Artistic performances

Examples for graduates

- Research projects
- Comprehensive exams
- Thesis
- Field experiences
- Scores or pass rate on appropriate licensure or certification exams



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Rubrics and Course Grades



- **Whenever possible**, look to developing and utilizing rubrics.



- **Course grades** used at the program level **DO NOT** provide data on individual student outcomes

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More on Indirect Measures

Indirect measures allows students **to tell us** what they think they learned through self-reported statements about their learning or by being asked about their satisfaction of certain experiences.

Example

- Surveys (QMS)
- Student interviews
- Course evaluations



Targets

Key Components

- Align to a specific measure
- Expected scores; level of performance
- Targets; number of students achieving level of performance
- Express targets in percentages

Example

If you use a 4-point rubric, a target that **90% of the students will earn at least 3 out of 4** is clear and precise when compared to a target that states students will earn an average of 3.03 on a 4-point rubric scale.



Student Learning Outcome



Measures



Targets

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Findings.

Key Components

- Align to a specific measure and target
- Show the result of the direct/indirect assessment
- Express finding as % of students achieving the performance target related to the measures

Example

Based on the prior example, **70% (or 100%) of the students earned a 3 out of 4** is an appropriate statement referring back to your target and addressing the actual outcome of your students.

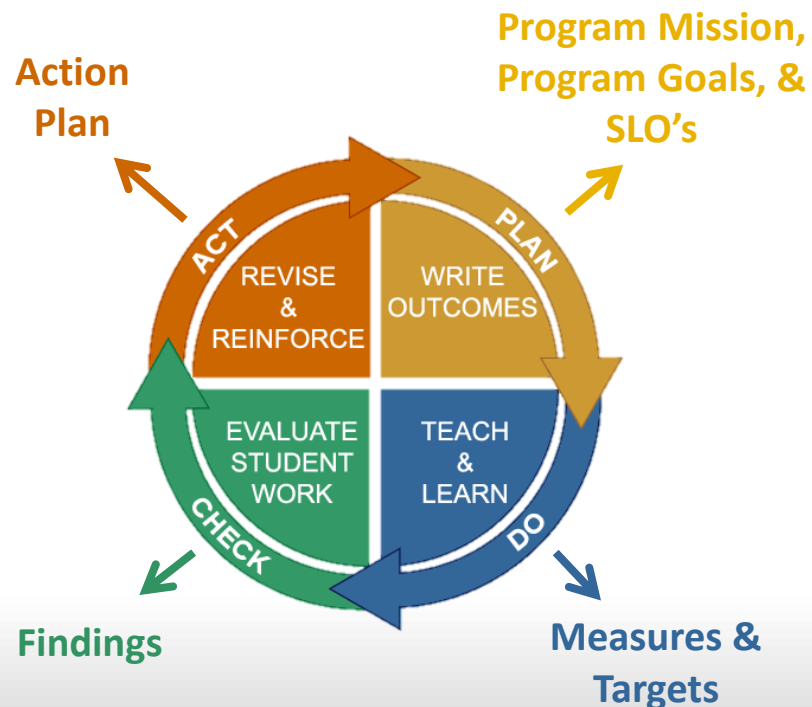
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Action Plan: 'Closing the Loop'

Closing the loop is the final step in the SLO process that helps faculty, chairs/department heads, deans, administrators, and staff understand how to better facilitate student learning through **continuous instructional improvement**

Key Components

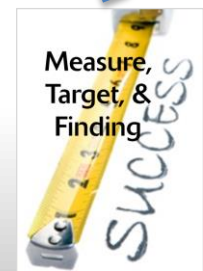
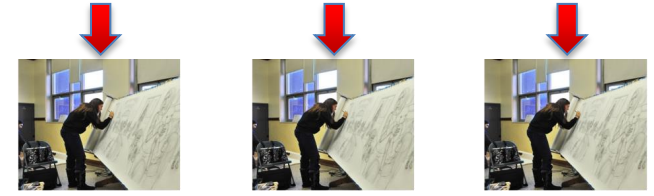
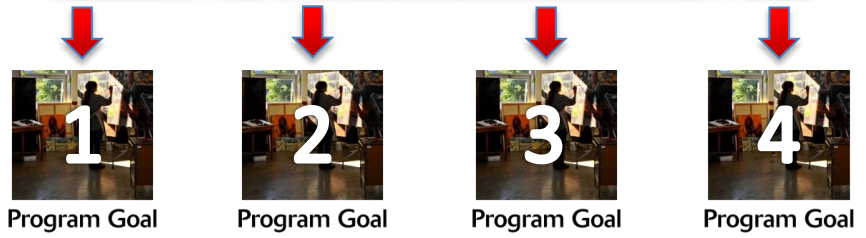
- “Close the loop” by using findings for program improvement
- Address each unmet target with strategies to improve students’ performance



Revisiting Alignment.



Program Mission



Measures, Targets, & Findings

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Next Steps.

- Transitioning to Compliance Assist for 2012-13
- Training and in-depth instructions will be provided late summer 2013
- Deadline for 2012-13 SLO Annual report will be in early October
- Questions?

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www.louisville.edu/institutionalresearch

Coming Soon.