Software to Support ABET Criteria 3
March 6 (Friday) 11:00-11:50am
Main 209

Attendees:

Justin Bak, Business Analyst, JBak@mtech.edu
Kaleb Bausch, Business Analyst, KBausch@mtech.edu
Diedrich Brush, Business Analyst, DBrush1@mtech.edu
Carson Fiechtner, Business Analyst, CFiechtner@mtech.edu
Lorri Birkenbuel, Safety, Health & Industrial Hygiene, LBirkenbuel@mtech.edu,
Phil Curtis, Science Mine, PCurtis@mtech.edu
Marcus Frisbee, Business Analyst, MFrisbee@mtech.edu
Celia Schahczenski, Manager, CSchahcenski@mtech.edu
Sue Schrader, Petroleum, SSchrader@mtech.edu
Larry Smith, Geological Engineering, LSmith@mtech.edu
Jacob Vesco, Business Analyst, JVesco1@mtech.edu

11:00 Review last meeting — Marcus Frisbee

- Create outcome use case
  - Creating an outcome and associating it with a program are now separate use cases.
  - "Program specific outcomes" exist as well as regular "Student outcomes". "Program specific outcomes are mentioned in the business rules.
  - Updating the audit trail is part of the use case.

Clients were in agreement with these changes.

- Select PI/CO use case
  See discussion below.

- Suggestions/comments on our analysis notes for last meeting?

11:10 Can "Select PI/CO" use case be thrown out? — Kaleb Bausch/ Marcus Frisbee

- Commonalities of SO, PI, CO and metrics
- Flexible calculation of scores

Clients agreed that this use case is not needed. They agreed that having the flexibility of using both PI's and CO's at the same time works well for them.

Clients agreed with the hierarchy:
SO
PI
CO
Metric

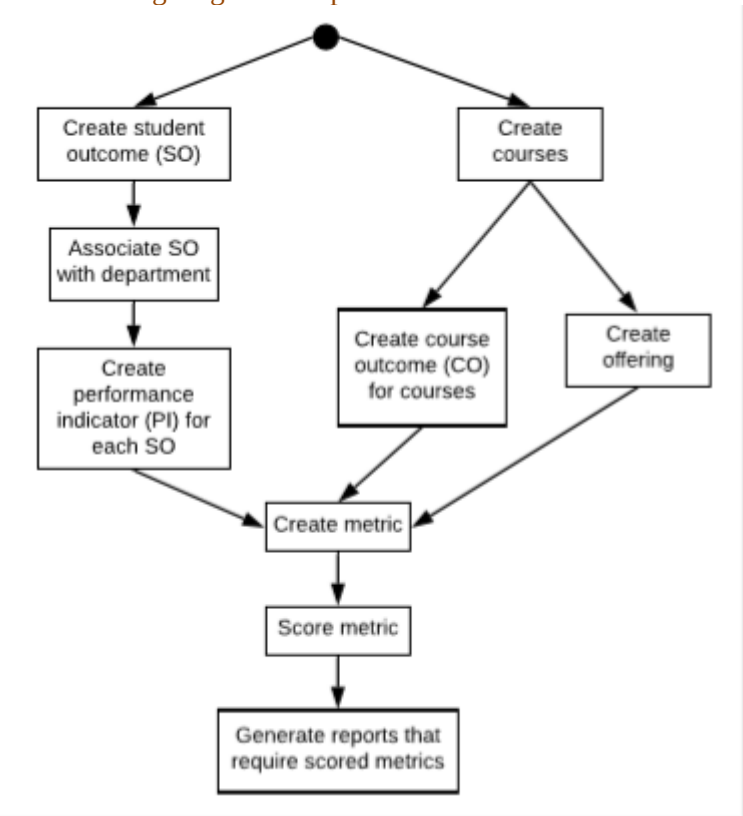
That is, metric measurements can contribute to create measures for one or more CO and/or PI. Similarly, CO measures can contribute to create measures for one or more PI and/or SO. Similarly, PI measures can contribute to create measures for one or more SOs. Having a hierarchy disallows cycles in the "contributes" network. "Contribute" links only go up the hierarchy, not down.

The clients agreed that metrics will never directly measure SOs.

An algorithm for calculating SO scores was presented. Such an algorithm for calculating scores does not belong in a requirements document, but increases our confidence that the requirements we are developing are implementable.

11:15 Activity diagram Jacob Vesco

The following diagram was presented:



There was confusion as to what an offering was. An 'offering' is an instance of a course that is offered during a semester.

The activity "Create performance indicator (PI) for each SO" should not require creating all PIs. Instead, only one PI needs to be created.

The activity diagram implies that a PI, CO and offering need to be created before a metric can be created. A metric can be created after only one of these activities is accomplished.

The diagram implies that there will be one way to score a metric, but this is not the case. How a metric is scored depends on what the metric is measuring. Including an activity, "Associate metric" is needed to associate a metric with a specific PI or CO. How the metric will be scored will be part of this "Associate metric" activity.

It needs to be possible to have a metric that is scored one way when measuring a specific PI, another way when measuring a CO and yet another way when measuring a different CO. For this reason, we also need a "Score metric association" activity in the diagram.

Clients want support for bringing metric scores in from Moodle. Mention was made of using the "intergalactic exchange format", csv.

Clients request that ABET's official SO's be pre-entered into ACID. Departments can then use the 'Create SO' functionality to enter program specific outcomes into ACID.

11:30 Create metric use case — Diedrich Brush

The "Create metric use case" was presented which can be found in the SRS at https://katie.mtech.edu/classes/esof328/Schedule/SRS_Combined05.pdf.

The following normal flow of the use case was presented.

1.0 Create metric

1. User indicates desire to create a metric
2. An 'enter metric' interface appears that allows the user to:
   - enter a description of the metric (required),
   - the course that the metric is associated with (optional),
   - select the performance indicator(s), or course outcomes(s) that this metric will measure (required), and
   - choose if this metric will be qualitative or quantitative. If the metric is qualitative, an interface appears allowing the user to enter text for 'unsatisfactory', 'satisfactory' or 'exemplary'. If the metric is quantitative, an interface appears allowing the user enter a maximum number of points. (This choice is required, and completion of the field are required.)
   - Submit (only once the required fields are completed)
3. The user is informed that the metric has been created

Consistent with the discussion concerning the activity diagram, creating a metric needs to be separated from associating the metric with a PI or CO. A metric can be used to measure more than one item (PI or CO), and a different process can be used for measuring each item.

Clients might be able to agree that the 3 terms “Exemplary”, “Satisfactory” and ‘Unsatisfactory” are sufficient for describing associations.

A metric can measure an item (PI or CO) in one of 3 ways:

- What it means to be exemplary, satisfactory and unsatisfactory can be described. (Example: “Exemplary means that the student understood the underlying concepts, completed the lab and obtained the desired results.”)
- Threshold scores for exemplary, satisfactory and unsatisfactory can be given. (Example: “Exemplary is at least 95%”. Geological Engineering uses this method of turning quantitative data to qualitative measures. OSH has also set threshold scores for exemplary, satisfactory and unsatisfactory.)
- A single threshold score for passing can be given, such as 70% (CS uses this method.)

Scoring will be different for each situation:

- The number of students in each category (exemplary, satisfactory and unsatisfactory) are directly given.
- Based on the metric scores, the number of students in each category are given.
- Based on the metric scores, the number of students passing are given.

Metrics can be associated with courses, or with other activities, such as participation in clubs, interviews, standardized exams and internships. It was suggested that these be called “extracurricular activities” or just “activities”.

Clients want there to be facilities for not allowing changes made to metric scores after certain events. For instance, once data has been placed into an ABET self-study report, it should no longer be possible to change relevant metric scores.

11:45 Support for development Justin Bak

Clients were asked to communicate with their dean, Dan Trudnowski, if they would like this project funded over the summer. Unfortunately, this request was made at the end of the meeting after some clients had gone.

11:50	Next Meeting – model, sample UI, prioritizing requirements – April 3	Marcus Frisbee