Types of Learning Goals

Consider learning goals of three different grain sizes:
- Course-scale learning goals, approximately 5-10 goals per course.
- Topic-scale learning goals (refined from existing syllabus/topic list), approximately 2-5 goals per topic.
- Lesson-scale learning goals (often called learning objectives).

The value of explicit learning goals:
- better define and guide what you want to teach,
- define for students what they should be learning (and why),
- are essential for measuring what students are learning to guide improvement of instruction and student learning.

Course-scale learning goals

Course-scale learning goals can contain a number of different types of learning goals. In addition to *content* learning goals, faculty can also consider other goals such as skills, habits of mind, affective and beliefs. *Skills* can include cognitive/ process skills such as reasoning, problem solving, evaluating, critiquing as well as technical skills such as computer skills (debugging, software specific skills, etc.) *Habits of Mind* learning goals include having students think like a physicist, engineer, computer scientist or mathematician. Students show this thinking by using alternative representations, comparing and contrasting, reflecting, strategizing, justifying, and planning. *Affective* learning goals have to do with students appreciating, enjoying, and valuing some aspect of the discipline. *Belief* learning goals are around students beliefs about the nature of learning and doing in the discipline.

Topic-scale learning goals (Big Ideas)

Topic-scale learning goals can be derived from course syllabi. It is common for course syllabi to address material covered, as well as time spent on each topic. Topics common to math syllabi might include: systems of linear equations, inverse of a matrix, and properties of determinants. This list of topics can be expanded in order to better define the student learning that will be necessary in order understand ideas at the topic level. Topic-scale learning goals are student and outcome oriented. A well-constructed topic-scale learning goal defines what students are expected to learn, as well as what students will be able to do as a result of learning.

Lesson-scale learning goals (Learning Targets)

Lecture-scale or lesson-scale learning goals describe the learning for concepts and skills that help build the topic-scale learning goals. These goals are short-term goals expressed in terms of what students will learn and identify what students will be able to do after they have learned the targeted concepts or skills. Lecture-scale learning goals are well defined for both students and instructors and a method for assessing students understanding of the goal is clear. Lecture-scale learning goals are connected to both the topic-scale learning goal as well as at least one overarching course-scale goal. Learning goals at this scale should also be relevant and useful to students.