

# Course Objectives — key to a successful course

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## **Abstract**

I'll describe how creating detailed course objectives, and communicating them clearly to your students, can help the instructor, enhance student learning, and aid in the assessment of your course. Three key questions about objectives are discussed. Example objectives are provided.



## Overview

- ABET and semantics: objective versus outcome
- What are detailed course objectives?
- The three key questions about objectives
- In what way are detailed course objectives useful?
- Some examples of detailed course objectives
- Conclusions

## ABET and Semantics

Sooner or later, most of you will have to deal with ABET accreditation activities for your department. The terminology, especially related to objectives, can be confusing. From the most recent ABET definitions:

- A **Program Educational Objective** is some expectation of what graduates of the program “are expected to attain within a few years after graduation.”
- A **Student Outcome** is a measurable knowledge or skill that is assessed in some way for each student in the program, and describes “what students are expected to know and be able to do by the time of graduation.”

For many people, this use of *objective* versus *outcome* seems backwards. But don't hold your breath—ABET isn't going to change. Perhaps that is why UW Reg 2-117 also uses “outcome” in this way.

Don't mix up *course* objectives with *program* objectives. As an instructor, you determine and measure **course objectives**.

## What are Detailed Course Objectives?

Adapted from the <http://www.websters.com/> on-line dictionary. . .

### ob·jec·tive

*n.*

1. Something that actually exists.
2. Something worked toward or striven for; a goal. ✓
3. Grammar.
  - (a) The objective case.
  - (b) A noun or pronoun in the objective case.
4. The lens or lens system in a microscope or other optical instrument that first receives light rays from the object and forms the image. Also called object glass, objective lens, object lens.

## What are Detailed Course Objectives?

So an objective is something you want your students to learn or a skill you want them to master. . .

Some objectives found in a recent syllabus:

1. Understand circuit analysis techniques.
2. Appreciate the importance of electrical safety.
3. Know how a voltage divider circuit works.

Pretty good, huh?

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Maybe, maybe not: A good detailed course objective is specific, is measurable, is important, and is achievable. You *may* be able to measure “understand” and “know” but what about the “appreciate” objective?

## Three Key Questions about Objectives

When formulating objectives for your course, there are three key questions you want to ask yourself.

1. Does this objective specify either a *vital* piece of knowledge or a *necessary* skill that all students should master as part of completing this course?
2. Does this objective describe something that is of reasonable scope for a student in this course?
3. Have I described this objective in such a way that I can really measure it effectively?

Answering these questions will tend to filter out poor objectives.

There are differing opinions over how many objectives one course should have. Some say no more than four or five, others say eight or ten!

## How are detailed course objectives useful?

Detailed course objectives:

- help you focus limited class time on the important topics and activities
- tell students what is really important for the class
- guide you in designing quiz or exam questions
- help you assess how well your course is doing
- help provide needed inputs for your department's ABET Self-Study

The course objectives **should always appear in the syllabus**. Take time to emphasize them with the students when you review the syllabus the first day of class. Note: UW Reg 2-117 calls these “learning outcomes.”

Promise your students that **all quiz and exam questions** will have a direct tie back to one or more of the course objectives. Make sure you keep that promise!



## Examples of Detailed Course Objectives

From a recent course syllabus for EE 2390:

*Objectives:* Students will be able to

- Work with a variety of number systems and numeric representations, including signed and unsigned binary, hexadecimal, 2's complement.
- Apply fundamental analysis skills to correctly describe the behavior of a given digital logic circuit.
- Translate system requirements into a practical digital design, making use of modern EDA tools such as schematic capture, Verilog HDL, and logic synthesis programs.
- Demonstrate hands-on testbench skills and the ability to communicate appropriately via a lab notebook while functioning as part of an engineering lab team.

## Conclusions

Detailed course objectives that are thoughtfully designed will benefit:

- you
- your students
- your Department (especially when the next ABET visit rolls around)

Budget enough time to really think about your course objectives **before** you commit them to the syllabus.

Ask yourself the three key questions about your objectives.

Warning: Last minute course objectives are almost always *poor* course objectives.