Teaching and Assessing Life-long Learning

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Teaching and Assessing Life-long Learning

Each program must demonstrate that its students attain a recognition of the need for, and an ability to engage in life-long learning. (ABET)
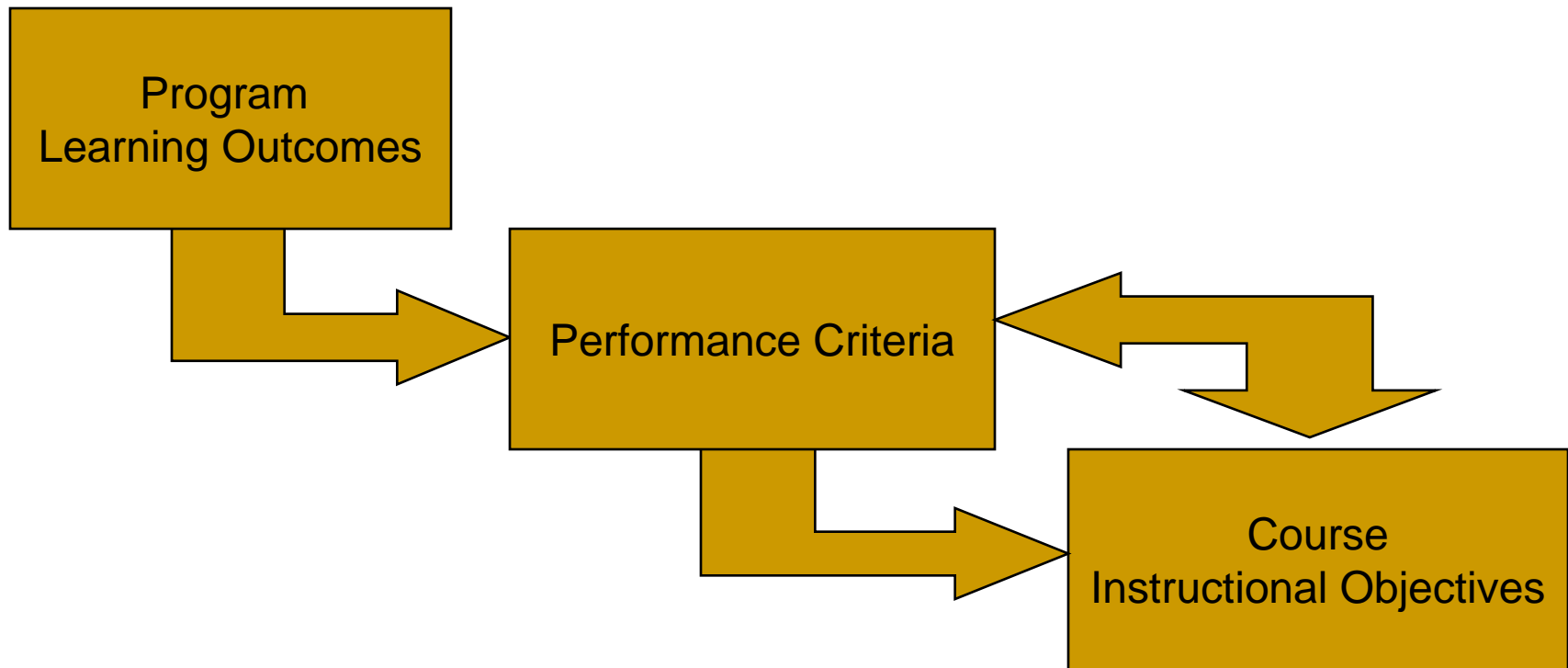
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ABET Compatible Definitions of Terms

- **Program Learning Outcomes**
  - Statements that describe what students are expected to know and/or be able to do by the time of graduation.

- **Performance Criteria**
  - Specific measurable statements defining performance required to meet learning outcomes.

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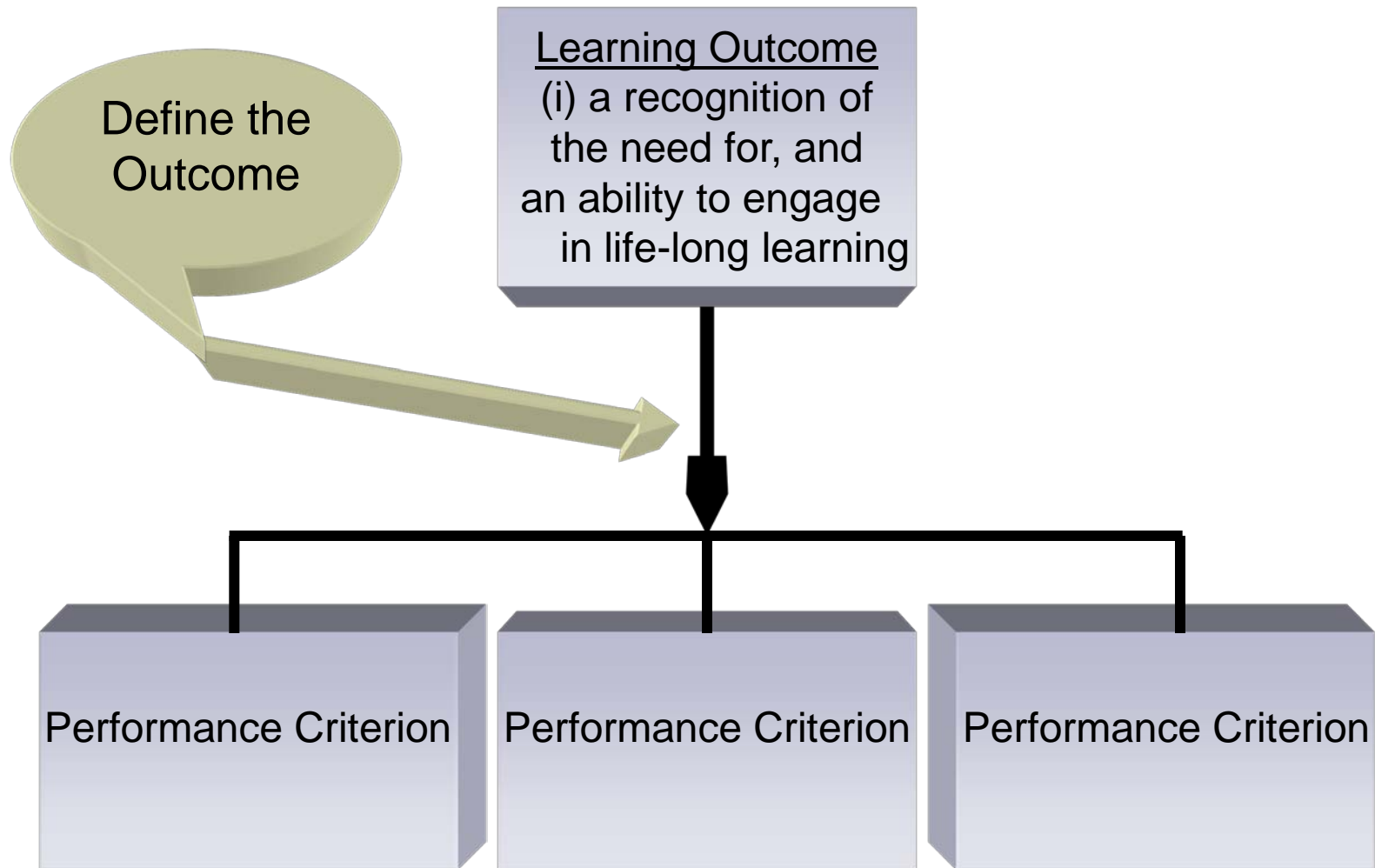http://depts.washington.edu/celtweb/

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ABET Compatible Definitions of Terms

- **Course Instructional Objectives**
    - Statements of things students who complete a specific course should be able to do.

- **Outcome-related Course Instructional Objectives**
    - Statements of things students who complete the course should be able to do, which are also program performance criteria.

- **Learning Strategies**
    - Methods employed to facilitate students achievement of instructional objectives.

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Getting from Program Outcomes to Instructional Objectives

Program Learning Outcomes → Performance Criteria → Course Instructional Objectives

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Decision Tree

Define the Outcome

Learning Outcome
(i) a recognition of the need for, and an ability to engage in life-long learning

Performance Criterion   Performance Criterion   Performance Criterion

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(i) a recognition of the need for, and an ability to engage In life-long learning

Performance Criteria

Defining Concepts

Learning Outcome

Life-long Learning

- Self-Directed
- Self-Regulated
- Self-Motivated
- Reflective
- Metacognitive

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Self-Directed Learning

Probably the most important component of life-long learning. Self-directedness relates to both recognizing a need for further learning as well as being proactive in gaining access to and accomplishing learning.

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Attributes of Self-Directed Learners

- Curious/motivated
- Methodical/disciplined
- Logical/analytical
- Reflective/self-aware
- Flexible
- Interdependent/interpersonally competent
- Persistent/responsible
- Venturesome/creative
- Confident
- Independent/self-sufficient

Source: Candy, P.C. (1991).

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Skills of Self-Directed Learners

- Highly developed information seeking and retrieval skills.

- Knowledge about and skill at the learning process.

- Develop and use criteria for evaluating critical thinking.

Source: Candy, P.C. (1991).

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Self-Regulated Learners

Learning is viewed as an activity that students do for themselves in a proactive way rather than as a covert event that happens to them in reaction to teaching… learners are proactive in their efforts to learn because they are aware of their strengths and limitations and because they are guided by personally set goals and task-related strategies.

Source: Zimmerman, B. J. (2002).

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Skills of Self-Regulated Learners

The ability to:

- Set specific proximal goals for oneself.
- Adopt powerful strategies for attaining the goals.
- Monitor one's performance selectively for signs of progress.
- Restructure one's physical and social context to make it compatible with one's goals.
- Efficiently manage one's time.
- Attribute causation to results.
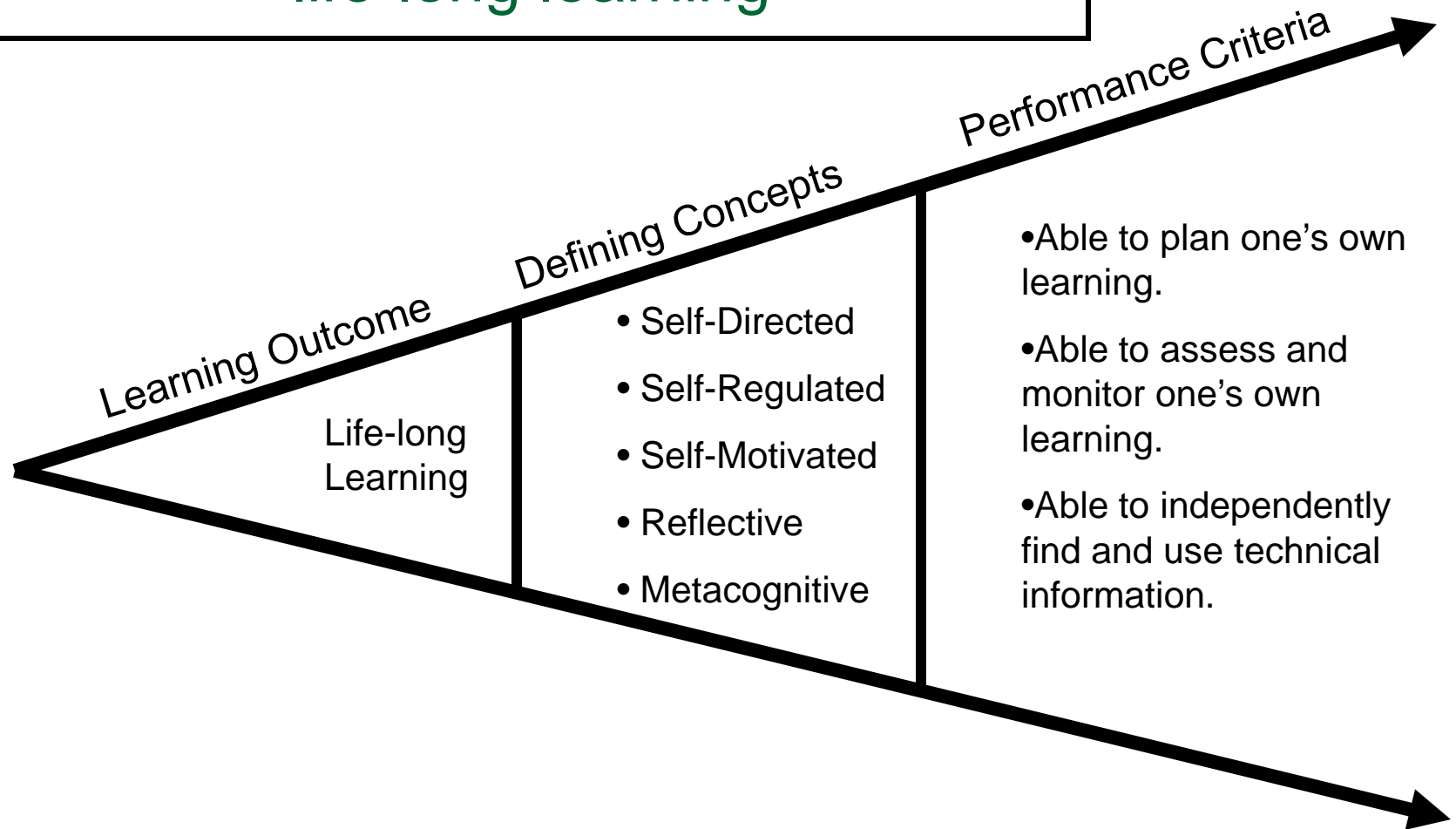- Adapt new methods.

Source: Zimmerman, B. J. (2002).

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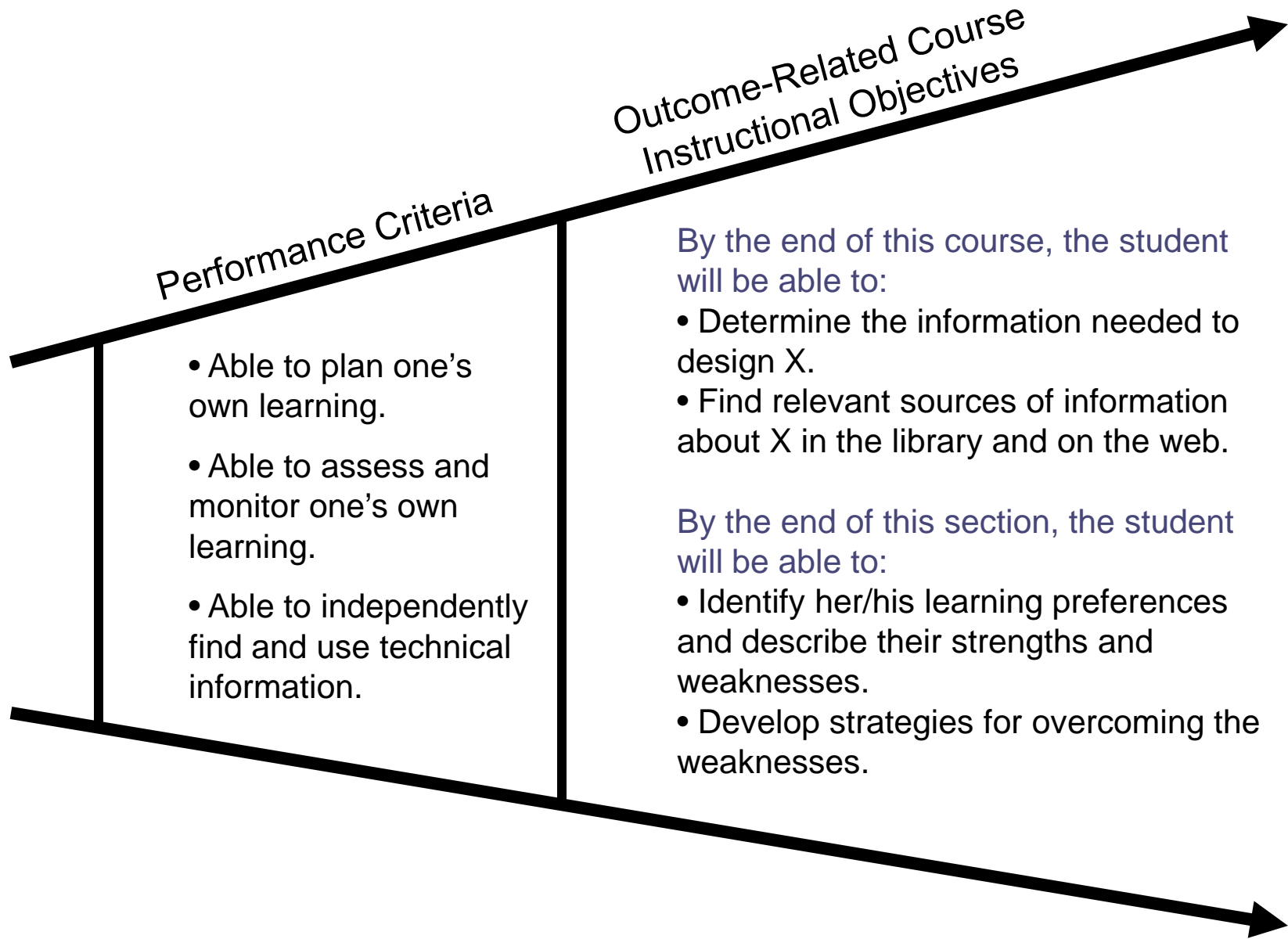http://depts.washington.edu/celtweb/

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A life-long learner is:

A person who is:

- Self-aware and reflective of her or his on-going learning needs.
- Self-assesses for knowledge and skill deficiencies and sets appropriate learning goals and tasks.
- Can find appropriate resources and learning opportunities.
- Understands her or his learning preferences and knows how to adapt them to maximize learning under different circumstances.
- Sufficiently motivated to do so.

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(i) a recognition of the need for, and an ability to engage In life-long learning

Performance Criteria

Defining Concepts

Learning Outcome

Life-long Learning

- Self-Directed
- Self-Regulated
- Self-Motivated
- Reflective
- Metacognitive

• Able to plan one's own learning.

• Able to assess and monitor one's own learning.

• Able to independently find and use technical information.

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Performance Criteria

- Able to plan one's own learning.
- Able to assess and monitor one's own learning.
- Able to independently find and use technical information.

Outcome-Related Course Instructional Objectives

By the end of this course, the student will be able to:
- Determine the information needed to design X.
- Find relevant sources of information about X in the library and on the web.

By the end of this section, the student will be able to:
- Identify her/his learning preferences and describe their strengths and weaknesses.
- Develop strategies for overcoming the weaknesses.

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Outcomes-Related Course Instructional Objectives

Instructional Methods that Address Outcome 3i

By the end of this course, the student will be able to:
• Determine the information needed to design X.
• Find relevant sources of information about X in the library and on the web.

By the end of this section, the student will be able to:
• Identify her/his learning preferences and describe their strengths and weaknesses.
• Develop strategies for overcoming the weaknesses.

• Teach students about their learning styles and learning strategies.

• Require library and web searches and grade on quality of documentation and their ability to discern the quality of the sources.

• Use cases and have students identify what they need to know to solve problems.

• Ask students to conduct both self and peer assessments.

• Use student-centered pedagogies (e.g. cooperative learning, PBL, team-based learning) that help develop self reliance and interdependence.

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