Building a Course Framework for Student Success

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INDIANA UNIVERSITY BLOOMINGTON
SCHOOL OF INFORMATICS AND COMPUTING

Plan for the Session…

- Introduction
- Goals vs. Objectives
- Bloom's Taxonomy
- Group Activity
- Tips & Tricks
- Questions & Wrap Up

Session Goals

- Have at least ONE well written, MEASURABLE goal for your chosen course

- Have at least ONE assignment/assessment created that MAPS directly to your written goal

- Learn about various other classroom techniques that can be employed to achieve goals and objectives

Goals vs. Objectives

Goals vs. Objectives → Bloom's Taxonomy → Group Activity → Tips & Tricks →Questions/Wrap Up

Goals vs. Objectives

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- Goals
  - Describe what you purpose to achieve in the class.
  - Use language that is understandable by students.
  - Class should have 1-3 Goals.

- Example:

  Students by the end of the semester will be able to analyze and evaluate client requirements to choose the proper elements in constructing an Information System through the Conceptual, Logical, and Physical Schemas.

Goals vs. Objectives

- Objectives
    - Provide evidence of student learning.
    - Describe the aspects or tasks to a goal.
    - Assignments are linked to a goal.
    - Use measurable language for assessment.

- Example:
    - Analyze requirements and solicit information to design a Conceptual Schema using an Entity Relationship Diagram (ERD).
    - Demonstrate the ability to write advanced SQL queries to retrieve data from a SQL database and format the output data.

Bloom's Taxonomy

Goals vs. Objectives → **Bloom's Taxonomy** → Group Activity → Tips & Tricks → Questions/Wrap Up

Bloom's Taxonomy

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- Bloom et al., 1956 – 1965, development continues

- A guide for writing measurable educational objectives

- Basic skills lead to complex skills   (prerequisites)

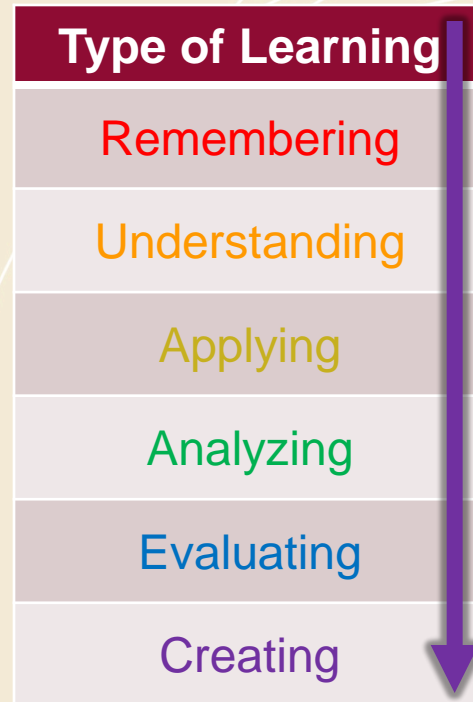- Helpful for finding mis-alignment at the program level

Bloom's Taxonomy

Goals vs. Objectives → **Bloom's Taxonomy** → Group Activity → Tips & Tricks →Questions/Wrap Up

Type of Learning
Remembering
Understanding
Applying
Analyzing
Evaluating
Creating

Bloom's Taxonomy

Goals vs. Objectives → **Bloom's Taxonomy** → Group Activity → Tips & Tricks → Questions/Wrap Up

Type of Learning	Definition	Example Action Words
Remembering	Recalling information	Recognize, name, retrieve, describe, list, define, identify, outline, reproduce
Understanding		
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Applying	Using information in another situation	Use, execute, carry out, implement, classify, solve, demonstrate, compute
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Analyzing	Breaking information into parts to explore understandings and relationships	Analyze, organize, compare, deconstruct, dissect, differentiate, diagram, combine
Evaluating		
Creating		

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Analyzing	Breaking information into parts to explore understandings and relationships	Analyze, organize, compare, deconstruct, dissect, differentiate, diagram, combine
Evaluating	Justifying a decision or course of action	Judge, critique, experiment, hypothesize, appraise, assess, justify
Creating		

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Analyzing	Breaking information into parts to explore understandings and relationships	Analyze, organize, compare, deconstruct, dissect, differentiate, diagram, combine
Evaluating	Justifying a decision or course of action	Judge, critique, experiment, hypothesize, appraise, assess, justify
Creating	Generating new ideas, products, or ways of viewing things	Produce, design, construct, plan, invent, generate, transform, integrate

Bloom's Taxonomy (Examples)

Goals vs. Objectives → **Bloom's Taxonomy** → Group Activity → Tips & Tricks →Questions/Wrap Up

- I130 – Introduction to Cybersecurity
  - Course Goal
    - Students will be able to read and discuss material covering computer security

  - Learning Objectives:
    - Students who complete the course should be able to:
    - **Recognize** and be able to **explain** basic terminology in computer security
    - Read a scholarly paper in security and **summarize** the topics covered
    - **Discuss** malware, authentication, botnets, pervasive computing, anonymity, and privacy
    - When presenting material, correctly **use** fundamental concepts of security

Type of Learning
Remembering
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Bloom's Taxonomy (Examples)

Goals vs. Objectives → **Bloom's Taxonomy** → Group Activity → Tips & Tricks →Questions/Wrap Up

- I210 – Introduction to Programming with Python
  - Course Goal
    - Students will become efficient programmers in a team, using Python

  - Learning Objectives:

Type of Learning
Remembering
Understanding
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Creating

- - - Students who complete the course should be able to
    - **Compose** an algorithm that will solve a specific, definite problem
    - From an algorithm, **produce** a programmatic solution in Python
    - **Debug** Python code written by themselves or others
    - **Examine** two programs that accomplish the same task and **discuss** their comparative efficiencies
    - **Carry out** their responsibilities as part of a team

Group Activity

- Each table will be a break-out group.

- One of the presenters will come to your table with worksheets.

- Goals:
  - Using the worksheet, write ONE measurable course objective with at least ONE goal.
  - Share your objective/goal with your group and work together to revise it.
  - Select a current assignment or "create" an assignment that maps directly to your written goal.

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Tips & Tricks

- Write the objective from the point of view of the student - what the student will be able to do as a result of participating in the activity.

- Always keep other aspects of your students in mind:
  - Subject-matter Competence
  - Attitudes
  - Language
  - Skills

- Outcome of the learning should be observable and measurable.

- Outcome is achievable within the scope of the program/course: both in level of learning and within timeframe.

- Each objective should describe only one (1) behavior or outcome.

- Remember: Learning Objectives Focus on **Action**.

- Consider Breaking Your Learning Objectives into Sub Categories.

Special Thanks to:

- School of Informatics and Computing
  - http://soic.indiana.edu/
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Thank YOU! Questions?

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