Department Of Computer Science And Engineering

Defining Course Outcomes (COs)

Overview

Course Outcomes (COs) are precise, measurable statements that describe what students are expected to achieve upon successful completion of a course. The institution follows a structured and systematic procedure for defining Course Outcomes in alignment with the principles of Outcome Based Education (OBE) and the guidelines of the National Board of Accreditation.

Purpose of Defining Course Outcomes

- To clearly state the expected learning achievements of a course
- To ensure alignment of individual courses with Program Outcomes (POs) and Program Specific Outcomes (PSOs)
- To facilitate effective assessment and attainment measurement
- To support curriculum quality and continuous improvement

Inputs for Defining Course Outcomes

The following inputs are considered while defining Course Outcomes:

- Prescribed syllabus and course objectives
- Program Educational Objectives (PEOs)
- Program Outcomes (POs)
- Program Specific Outcomes (PSOs)
- Bloom's Taxonomy (Cognitive domain)

Guidelines for Writing Course Outcomes

Do's

- Use measurable action verbs (e.g., Apply, Analyze, Design, Evaluate, Develop).
- Keep statements specific and concise.
- Align COs strictly with syllabus content.
- Ensure assessability through internal and external evaluations.

Don'ts

- Avoid vague verbs such as "know," "learn," or "understand" (unless measurable).
- Avoid combining multiple skills in one CO.
- Avoid excessive number of COs.

Procedure for Defining Course Outcomes

Review of Course Syllabus

The Course Coordinator reviews the syllabus to identify:

- Core concepts and learning units
- Practical, analytical, and design components
- Expected learning depth and rigor

Drafting of Course Outcomes

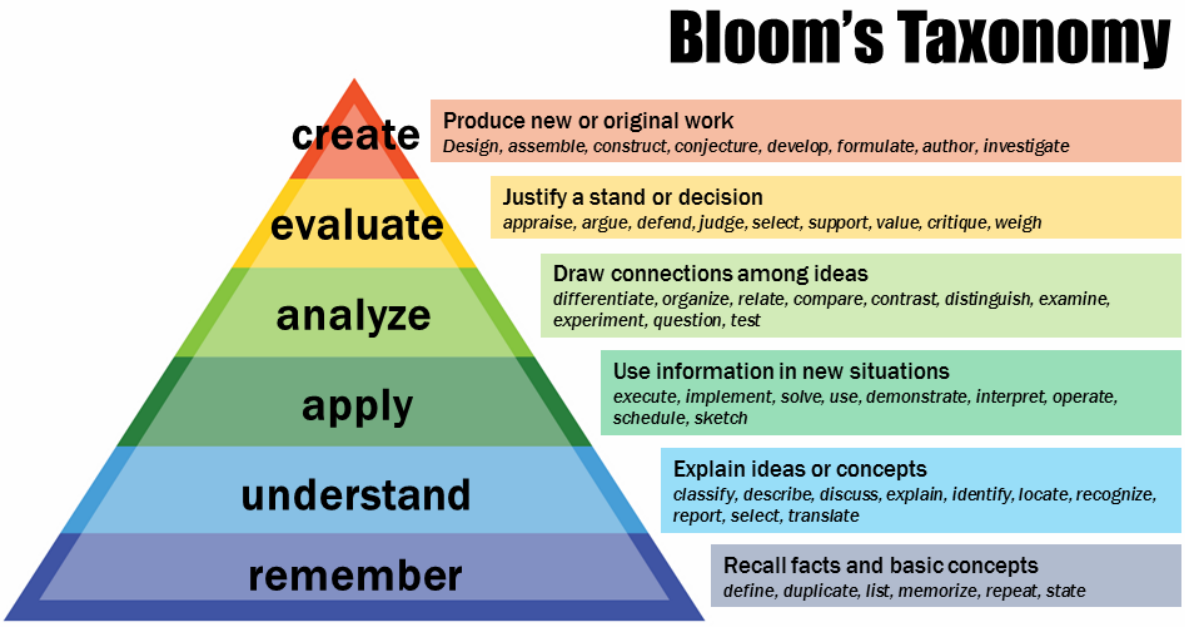
- Course Outcomes are drafted by the Course Coordinator
- Each CO begins with a suitable action verb from Bloom's Taxonomy
- COs are framed to be clear, concise, observable, and measurable

Mapping to Bloom's Taxonomy

Each Course Outcome is mapped to an appropriate Bloom's cognitive level:

- Remember (L1)
- Understand (L2)
- Apply (L3)
- Analyze (L4)
- Evaluate (L5)
- Create (L6)

The following picture shows the Bloom's cognitive levels:



This ensures progressive learning and appropriate academic challenge.

CO–PO–PSO Mapping

- Each Course Outcome is mapped with relevant POs and PSOs
- A **three-point correlation scale** is used:
  - 1 – Low
  - 2 – Medium
  - 3 – High
- This mapping ensures that course outcomes contribute effectively to program outcomes

Review and Approval

- Draft Course Outcomes and mappings are reviewed by the PAC and DAC
- Necessary revisions are incorporated
- Final approval is granted by the Head of the Department
- Approved COs are frozen for the academic year

Implementation

- Approved Course Outcomes are communicated to students at the beginning of the course
- COs are included in:
  - Course files
  - Lesson plans
  - Assessment tools
  - Question papers and rubrics

Review and Continuous Improvement

- Course Outcomes are reviewed annually
- Corrective actions are identified.
- Teaching strategies are modified if required.
- CO statements are revised (if necessary).
- Revisions are based on:
  - Curriculum updates
  - CO attainment analysis
  - Academic audit observations
- All changes are documented as part of the Continuous Improvement process

Outcome

- Clearly defined and measurable Course Outcomes
- Strong alignment with Program Outcomes and Program Specific Outcomes
- Improved teaching–learning effectiveness
- Compliance with NBA accreditation requirements