PROGRAM EDUCATIONAL OBJECTIVES, PROGRAM OUTCOMES AND PROGRAM SPECIFIC OUTCOMES

DEFINTIONS:

Program Educational Objectives (PEOs):

Program educational objectives are broad statements that describe the career and professional accomplishments that the program is preparing graduates to achieve.

Program Outcomes (POs):

Program outcomes describe what students are expected to know and would be able to do by the time of graduation. This is related to the behavior, knowledge and skills of the students that acquire as they progress through the program.

Program Specific Outcomes (PSOs):

Program Specific Outcomes are statements that describe what the students of a specific program should be able to do.

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STATEMENTS OF PEOs, POs AND PSOs

PROGRAM EDUCATIONAL OBJECTIVES (PEOs):

PEO1 - PROFICIENT DEVELOPMENT

To develop in the students the capacity to obtain knowledge on Science and Pharmaceutical Science and apply it expertly inside sensible requirements, for example, financial, natural, social, political, moral, wellbeing and security, manufacturability and manageability with due moral obligation.

PEO2-CORE PROFICIENCY

To provide ability to recognize, plan, appreciate formulate, comprehend, analyze, design and solve Pharmaceutical problems with hands on experience in different advancement involving modern tools necessary for pharmacy practice to fulfill the necessities of society and the Pharmaceutical industry.

PEO3 - SPECIALISED ACHIEVEMENT

To furnished the students with the capacity to explore, reenact, design, simulate, experiment, analyze, optimize and interpret in their core applications through multi disciplinary ideas and contemporary figuring out how to incorporate them into industry prepared graduates.
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PEO4 - PROFESSIONALISM

To provide training, exposure and awareness on importance of soft skills for better career and holistic personality development as well as professional attitude towards ethical issues, team work, responsibility, accountability, multidisciplinary approach and capability to relate pharmaceutical engineering issues to broader social context. To provide the required training in all aspects to the graduates to work as a health care professional in community and hospital pharmacies.

PEO5 - LEARNING ENVIRONMENT

To furnish students with an academic environment and make them mindful of greatness, foster the desire of revelation, imagination, creativity, authority, composed moral codes and rules and the long lasting figuring out how to turn into an effective expert in pharmacy field.
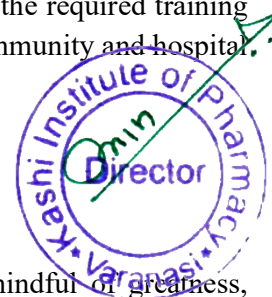
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THE PROCESS FOR ESTABLISHING THE PEO'S

The PEOs are established through the following process steps:

STEP 1: Vision and Mission of the Institute & Department are taken into consideration to interact with various stake holders, and establish the PEO's

STEP 2: The Head of the Department, Program Coordinator and other Senior Faculty prepares the draft version of PEOs and POs.

STEP 3: The draft rendition is examined with partners and their perspectives are gathered by the Program co-ordinator

STEP 4: The Program Assessment Committee surveys and dissects the PEOs and POs and presents its recommendations to the Departmental advisory Board.

STEP 5: The Departmental advisory Board deliberates on the recommendations and freezes the PEOs and POs and submits them to the BOG for final approval. The Program curriculum is planned by integrating inputs from members of Board of Studies and Academic council who are drawn from various academic institutions, R&D associations and industry

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Programme Outcomes (POs)

	Programme Outcomes (POs)
PO1	**Pharmacy Knowledge:** Possess knowledge and comprehension of the core and basic knowledge associated with the profession of pharmacy, including biomedical sciences; pharmaceutical sciences; behavioral, social, and administrative pharmacy sciences; and manufacturing practices.
PO2	**Planning Abilities:** Demonstrate effective planning abilities including time management, resource management, delegation skills and organizational skills. Develop and implement plans and organize work to meet deadlines.
PO3	**Problem analysis:** Utilize the principles of scientific enquiry, thinking analytically, clearly and critically, while solving problems and making decisions during daily practice. Find, analyze, evaluate and apply information systematically and shall make defensible decisions.
PO4	**Modern tool usage:** Learn, select, and apply appropriate methods and procedures, resources, and modern pharmacy-related computing tools with an understanding of the limitations.
PO5	**Design /development of Solutions:** Pharmacy graduates will be able to design and Innovate solution to pharmacy problems by applying appropriate tools while keeping in mind safety and ethical factor for environmental & society.
PO6	**Leadership skills:** Understand and consider the human reaction to change, motivation issues, leadership and team-building when planning changes required for fulfilment of practice, professional and societal responsibilities. Assume participatory roles as responsible citizens or leadership roles when appropriate to facilitate improvement in health and well-being.
PO7	**Professional Identity:** Understand, analyze and communicate the value of

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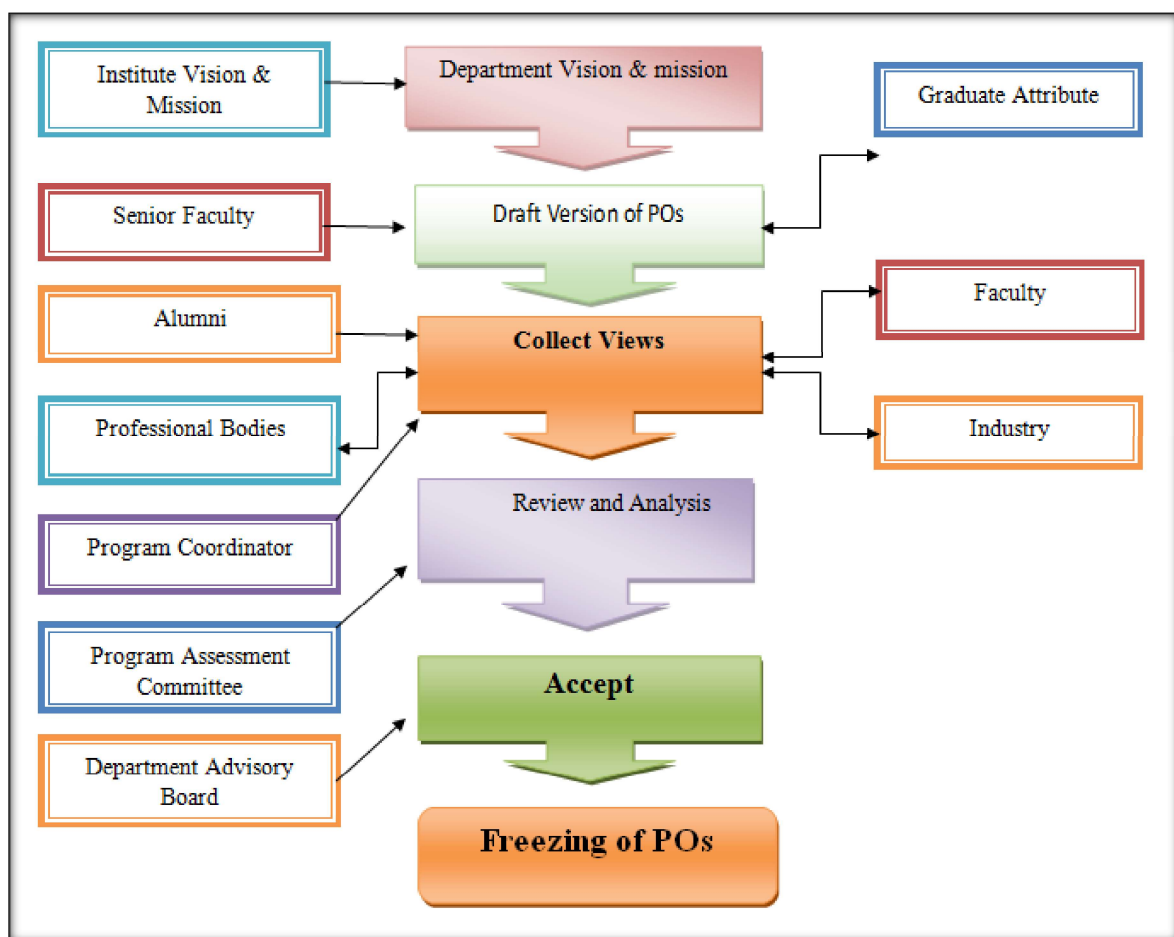|	
	their professional roles in society (e.g. health care professionals, promoters of health, educators, managers, employers, employees).
PO8	**Pharmaceutical Ethics:** Honour personal values and apply ethical principles in professional and social contexts. Demonstrate behavior that recognizes cultural and personal variability in values, communication and lifestyles. Use ethical frameworks; apply ethical principles while making decisions and take responsibility for the outcomes associated with the decisions.
PO9	**Communication:** Communicate effectively with the pharmacy community and with society at large, such as, being able to comprehend and write effective reports, make effective presentations and documentation, and give and receive clear instructions.
PO10	**The Pharmacist and society:** Apply reasoning informed by the contextual knowledge to assess societal, health, safety and legal issues and the consequent responsibilities relevant to the professional pharmacy practice.
PO11	**Environment and sustainability:** Understand the impact of the professional pharmacy solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
PO12	**Life-long learning:** Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change. Self-access and use feedback effectively from others to identify learning needs and to satisfy these needs on an ongoing basis.

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PROCESS TO DEFINE PROGRAM OUTCOMES (POS) OF THE DEPARTMENT

Institute Vision & Mission	Department Vision & mission	Graduate Attribute
Senior Faculty	Draft Version of POs	
Alumni	Collect Views	Faculty
Professional Bodies		Industry
Program Coordinator	Review and Analysis	
Program Assessment Committee	Accept	
Department Advisory Board	Freezing of POs	

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PROGRAM SPECIFIC OUTCOMES (PSOs)

The graduates of the department will attain

PSO1	Pharmacy graduates obtain position in successful career in pharmaceutical industry, research institutions, academic, government organizations and entrepreneurship.
PSO2	Perform research on various medical aspects and implement the Pharmaceutical knowledge in formulating the best suitable dosage form to provide high quality medicines to the society.
PSO3	Render the services to the public by providing patient centric effective treatments to curb the therapeutic issues with the required medicines and explain the effects of the drugs by analyzing the scientific literature for improving their health and well-being.

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ASSESSMENT METHODOLOGIES – DIRECT

Direct methods display the student's knowledge and skills from their performance in the class assignment test (It is a metric used to continuously assess the student's understanding capabilities) , internal assessment tests [the Internal Assessment marks in a theory paper shall be based on two tests, sessional test & pre university test (PUT)], end semester examinations (theory or practical), seminars, laboratory assignments/experiments (it is a qualitative performance assessment tool designed to assess student's practical knowledge and problem solving skills), mini/major projects, add on courses, certification, presentations (as per the requirement) etc. These methods provide a sampling of what students know and/or can do and provide strong evidence of student learning.

Various methods used in assessment process that periodically documents and demonstrates the degree to which the Course Outcomes are attained.

ASSESSMENT METHODOLOGIES – INDIRECT

Indirect methods such as course exit survey/assignments of course outcomes by feedback, assignments of mini/major project by external experts, faculty feedback, examiner feedback & others survey to reflect on student's learning. They are used to assess opinions or thoughts about the graduate's knowledge or skills.

Collect variety of information about course outcomes from the students after learning entire course.
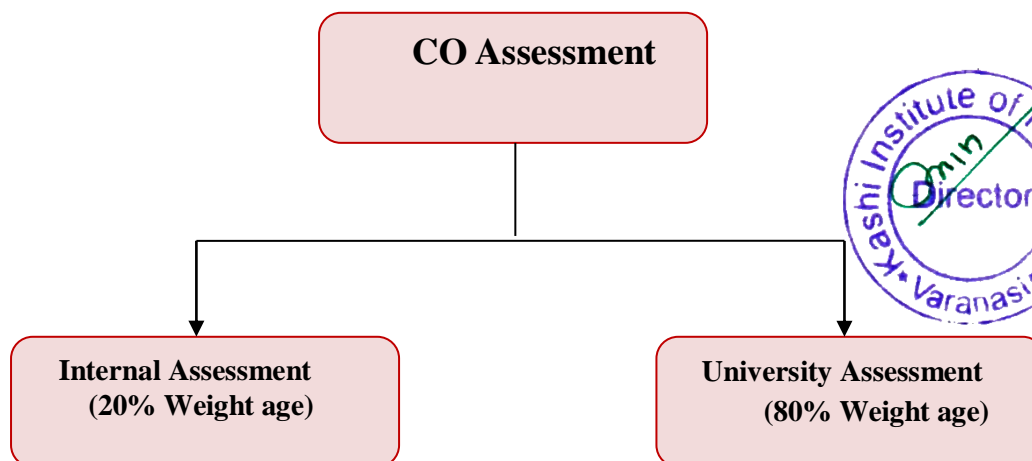
Rubrics are used for both formative and summative assessment of students. Same rubric is used for assessing an outcome so that the faculty is able to assess student progress and maintain the record of the same for each student.

ASSESSMENT PROCESS

Assessment Process for CO Attainment:

For the evaluation and assessment of CO's and PO's, rubrics are used. The rubrics considered here are given below:

CO Assessment Rubrics:

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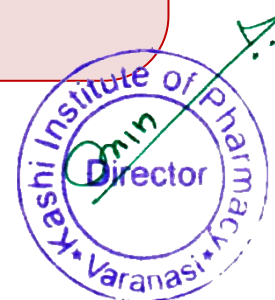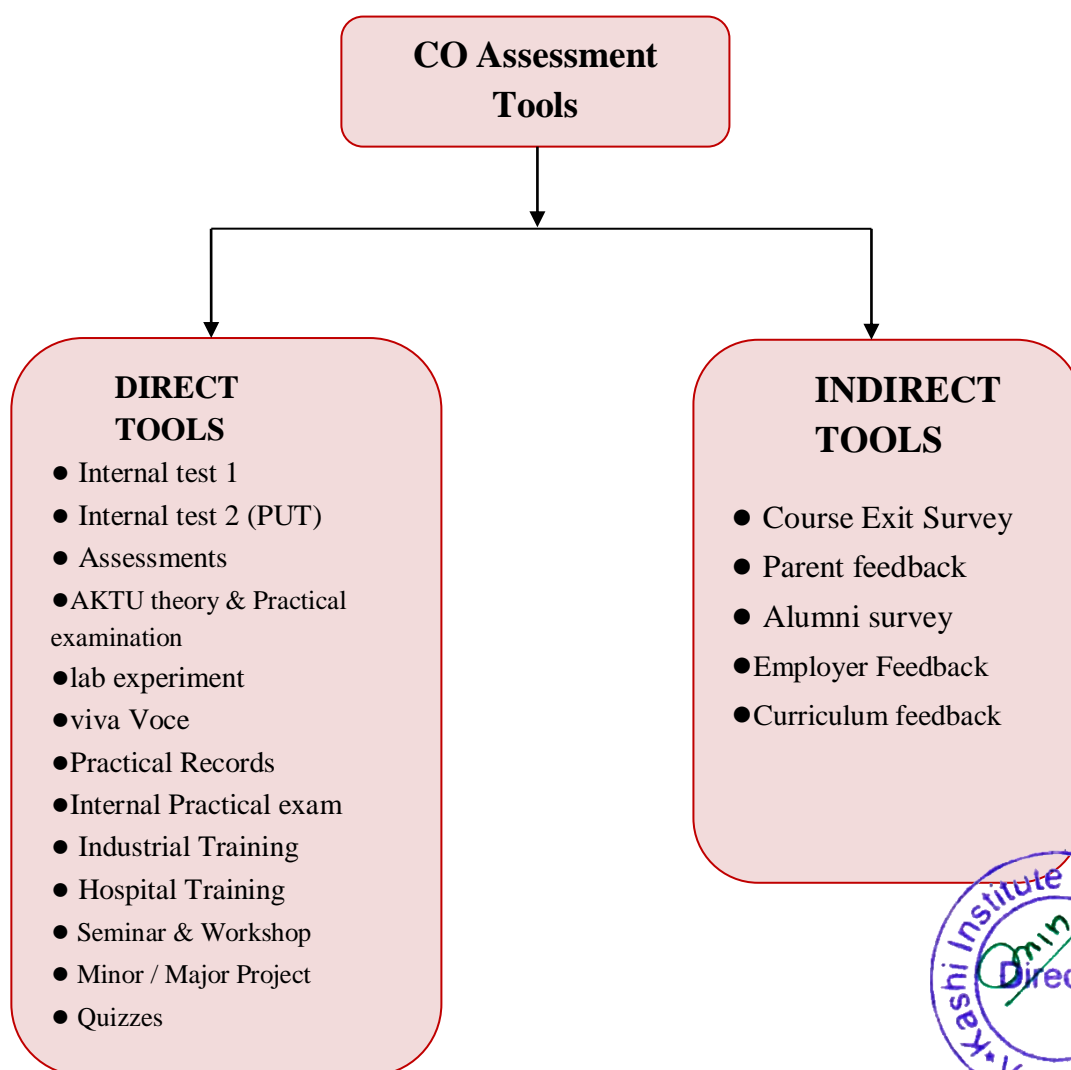
Course Outcome is evaluated based on the performance of students in internal assessments and in university examination of a course. Internal assessment contributes 20% and university assessment contributes 80% to the total attainment of a CO.

CO Assessment Tools:

The description of Assessment tools used for the evaluation of program outcomes is given in Table below. The various assessment tools used to evaluate COs and the frequency with which the assessment processes are carried out are listed in this table In each course, the level of attainment of each CO is compared with the predefined targets, if is not, the course coordinator takes necessary steps for the improvement to reach the target. With the help of CO against PO/PSO mapping, the PO/PSO attainment is calculated by program coordinator. Assessment Tools are of two types' direct tools and indirect tools. Which are described below:

CO Assessment Tools

DIRECT TOOLS
- Internal test 1
- Internal test 2 (PUT)
- Assessments
- AKTU theory & Practical examination
- lab experiment
- viva Voce
- Practical Records
- Internal Practical exam
- Industrial Training
- Hospital Training
- Seminar & Workshop
- Minor / Major Project
- Quizzes

INDIRECT TOOLS
- Course Exit Survey
- Parent feedback
- Alumni survey
- Employer Feedback
- Curriculum feedback

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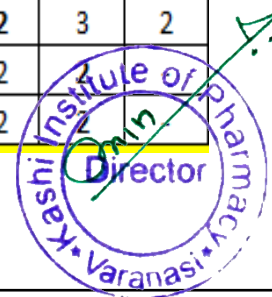**Managed by: JAIN EDUCATION SOCIETY**

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Assessment Process for Calculating the Attainment of Pos and PSO

Assessment Type	Assessment method	weight age	Assessment Period	Assessment and Reviewed By
Direct	Assessment tool based on Subject nature	**80%** (80% of AKTU Examination + 20% of the Assessment tools)	Once per Semester	Department Advisory committee
	AKTU Examination		Once per Semester	
Indirect	Current Passing out Students Survey	**20%**	8th semester	Department Advisory committee
	Recruiters Survey		Every Placement activity	
	Alumni Survey		Once per Year	

CO – PO And CO – PSO Mapping and Blooms Taxonomy

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Course : B. Pharm — **Semester: 1st (Odd)** — **Academic Year: 2023-2024**															
Course Code : BP101T — **Course Name : HAP-I**															
Name of the Faculty : — **Mr. Sachchidanand Pathak** — **Section : A & B**															
CO-PO & PSO MAPPING															
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	2	0	0	2	-	-	-	-	-	3	2	3	1	2	2
CO2	3	-	-	-	-	-	3	3	3	3	2	2	3	-	2
CO3	3	-	3	2	2	-	2	3	2	3	2	2	2	3	2
CO4	2	1	2	2	-	-	2	2	-	2	-	3	2		
CO5	2	-	-	2	-	-	-	-	-	2	-	2	2		

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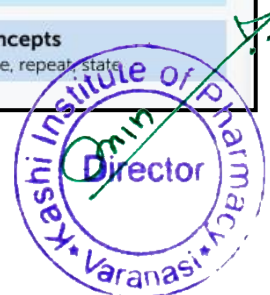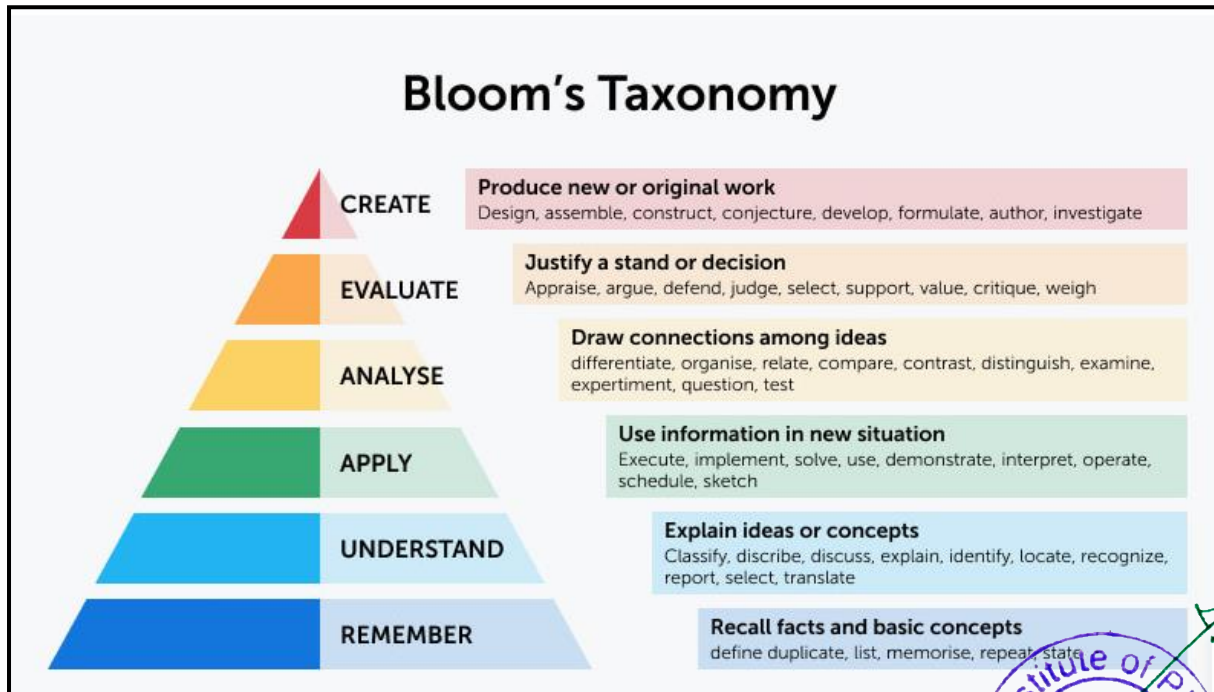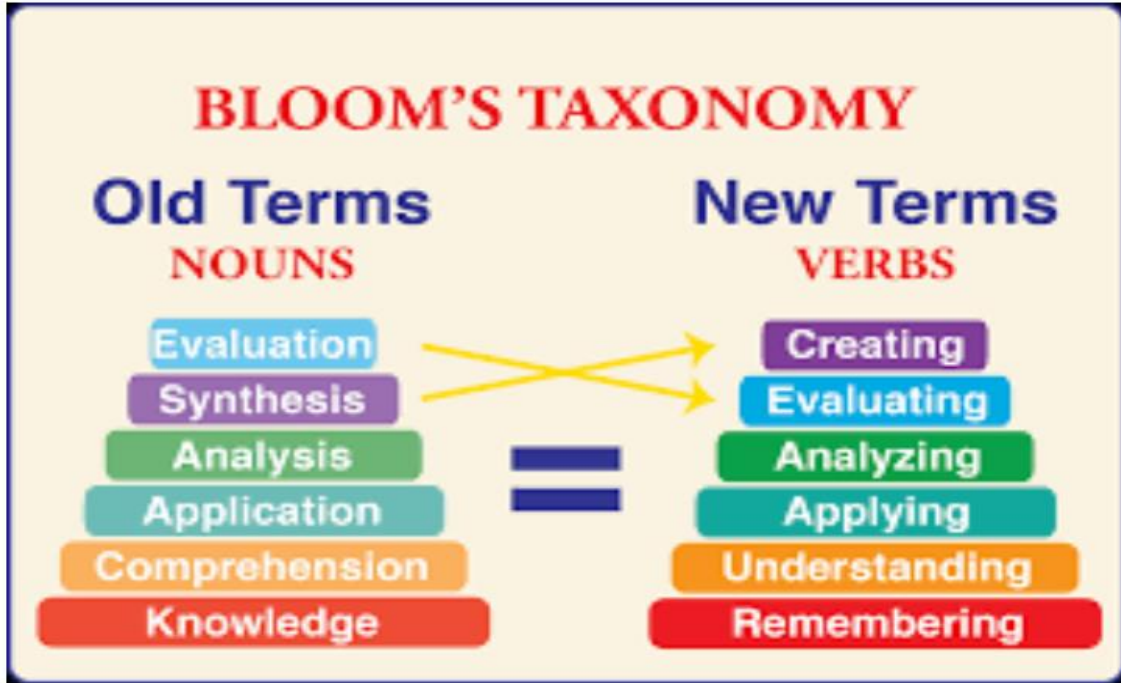
Revised Bloom's Taxonomy

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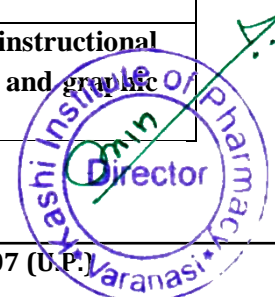E-mail: info@kashiit.ac.in. Website: www.kashiip.ac.in 1800-123-321-123

Cognitive Processes:

Level 1 - C1

Categories & Cognitive Processes	Alternative Names	Definition
Apply		Applying a procedure to a familiar task
Executing	Carrying out	Applying a procedure to a familiar task
Implementing	Using	Applying a procedure to an unfamiliar task

Level 2 - C2

Categories & Cognitive Processes	Alternative Names	Definition
Remember		**Retrieve knowledge from long- term memory**
Recognizing	Identifying	Locating knowledge in long-term memory that is consistent with presented material
Recalling	Retrieving	Retrieving relevant knowledge from long-term memory

Categories & Cognitive Processes	Alternative Names	Definition
Remember		**Construct meaning from instructional messages, including oral, written, and graphic communication**
Understand	Clarifying Paraphrasing Representing Translating	Changing from one form of representation to another
Interpreting	Illustrating Instantiating	Finding a specific example or illustration of a concept or principle
Exemplifying	Categorizing Subsuming	Determining that something belongs to a category
Classifying	Abstracting Generalizing	Abstracting a general theme or major point(s)
Summarizing	Concluding Extrapolating Interpolating Predicting	Drawing a logical conclusion from presented information
Inferring	Contrasting Mapping Matching	Detecting correspondences between two ideas, objects, and the like
Comparing	Constructing models	Constructing a cause and effect model of a system
Explaining	Clarifying Paraphrasing Representing Translating	**Construct meaning from instructional messages, including oral, written, and graphic communication**

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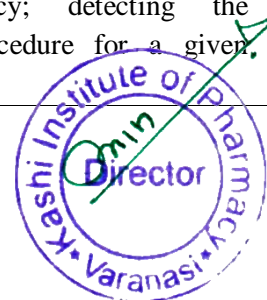E-mail: info@kashiit.ac.in. Website: www.kashiip.ac.in 📞 1800-123-321-123

Level 3 – C3

Categories & Cognitive Processes	Alternative Names	Definition
Apply		**Applying a procedure to a familiar task**
Executing	Carrying out	Applying a procedure to a familiar task
Implementing	Using	Applying a procedure to an unfamiliar task

Categories & Cognitive Processes	Alternative Names	Definition
Analyze		**Break material into its constituent parts and determine how the parts relate to one another and to an overall structure or purpose**
Differentiating	Discriminating Distinguishing Focusing Selecting	Distinguishing relevant from irrelevant parts or important from unimportant parts of presented material
Organizing	Finding coherence Integrating Outlining Parsing Structuring	Determining how elements fit or function within a structure
Attributing	Deconstructing	Determine a point of view, bias, values, or intent underlying presented material

Level-4 C4

Evaluate		Make judgments based on criteria and standards
Checking	Coordinating Detecting Monitoring Testing	Detecting inconsistencies or fallacies within a process or product; determining whether a process or product has internal consistency; detecting the effectiveness of a procedure as it is being implemented
Critiquing	Judging	Detecting inconsistencies between a product and external criteria; determining whether a product has external consistency; detecting the appropriateness of a procedure for a given problem

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Level- 5 C5

Categories & Cognitive Processes	Alternative Names	Definition
Create		Put elements together to form a coherent or functional whole; reorganize elements into a new pattern or structure
Generating	Hypothesizing	Coming up with alternative hypotheses based on criteria
Planning	Designing	Devising a procedure for accomplishing some task
Producing	Constructing	Inventing a product

The Knowledge Dimension

Dimension	Definition
Factual Knowledge	The basic elements students must know to be acquainted with a discipline or solve problems in it
Conceptual Knowledge	The interrelationships among the basic elements within a larger structure that enable them to function together
Procedural Knowledge	How to do something, methods of inquiry, and criteria for using skills, algorithms, techniques, and methods
Met cognitive Knowledge	Knowledge of cognition in general as well as awareness and knowledge of one's own cognition

Blooms Taxonomy:

Cognitive Process 1: To Remember

Remembering consists of recognizing and recalling relevant information from long-term memory.

Verbs associated with this level:

Choose, define, describe, find, identify, label, list, locate, match, name, recall, recite, recognize, record, relate, retrieve, say, select, show, sort and tell

Cognitive Process 2: To understand

Understanding is the ability to make your own meaning from educational material such as reading and teacher explanations. The sub-skills for this process include interpreting, exemplifying, classifying, summarizing, inferring, comparing, and explaining.

Verbs associated with this level:
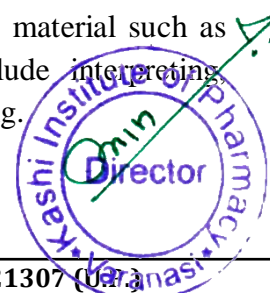
Categorize, clarify, classify, compare, conclude, construct, contrast, demonstrate, distinguish, explain, illustrate, interpret, match, paraphrase, predict, represent, reorganize, summarize, translate and understand

Cognitive Process 3: To apply
Applying refers to using a learned procedure either in a familiar or new situation.
Verbs associated with this level:
Apply, carry out, construct, develop, display, execute, illustrate, implement, model, solve and use

Cognitive process 4: To Analyze
To analyze is to break material into its constituent parts and determine how the parts relate to one another and to an overall structure or purpose. Students analyze by differentiating, organizing, and attributing.
Verbs associated with this level:
Analyze, ascertain, attribute, connect, deconstruct, determine, differentiate, discriminate, dissect, distinguish, divide, examine, experiment, focus, infer, inspect, integrate, investigate, organize, outline, reduce, solve a problem.

Cognitive Process 5: To evaluate
To evaluate is to make judgments based on criteria and standards.
Verbs associated with this level:
Appraise, assess, award, check, conclude, convince, coordinate, criticize, critique, defend, detect, discriminate, evaluate, judge, justify, monitor, prioritize, rank, recommend, support, test, value

Cognitive Process 6: To Create
To create is to put elements together to form a coherent or functional whole; reorganize elements into a new pattern or structure; inventing a product. This skill involves putting things together to make something new. To accomplish creating tasks, learners generate, plan, and produce.
Verbs associated with this level:
Adapt, build, compose, construct, create, design, develop, elaborate, extend, formulate, generate, hypothesize, invent, make, modify, plan, produce, originate, refine, transform.

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Bloom's Taxonomy

LEVEL-I:
Knowledge/ Remember:
Can the student recall or remember the information?

- Arrange
- Choose
- Define
- Describe
- Find
- How
- Label
- List
- Match
- Name
- Relate
- Recall
- Show
- What

LEVEL-II:
Comprehension/ Understand:
Can the student explain ideas or concepts?

- Classify
- Compare
- Convert
- Explain
- Express
- Illustrate
- Outline
- Relate
- Show
- Summarize
- Translate

Bloom's Taxonomy

LEVEL-III:
Application/ Apply:
Can the student use information in a new way?

- Construct
- Develop
- Discover
- Identify
- Interview
- Modify
- Predict
- Practice
- Solve

LEVEL-IV:
Analysis/ Analyze:
Can the student distinguish between the different parts?

- Categorize
- Classify
- Compare
- Distinguish
- Generate
- Examine
- Interpret
- Operate
- Simplify

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Bloom's Taxonomy

LEVEL-V:
Evaluation/ Evaluate:
Can the student justify a stand or decision?

- Assess
- Choose
- Compare
- Determine
- Evaluate
- Explain
- Interpret
- Justify
- Measure
- Prioritize
- Prove
- Select

LEVEL-VI:
Synthesis/ Create :
Can the student create new product or point of view?

- Choose
- Compile
- Compose
- Construct
- Create
- Develop
- Discuss
- Elaborate
- Estimate
- Formulate
- Maximize
- Minimize
- Modify
- Propose
- Solve