M. S. P. MANDAL'S

SHIVCHHATRAPATI COLLEGE, AURANGABAD

INTERNAL QUALITY ASSURANCE CELL

Programme Specific Outcomes (PSOs)

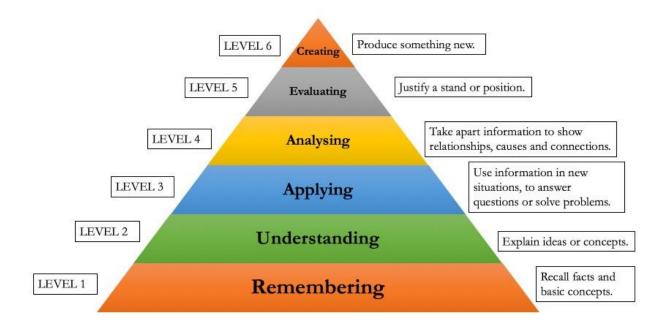# INTENRAL QUALITY ASSURANCE CELL

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❖ Bloom's Taxonomy and its application in PSOs:

Benjamin Bloom and his collaborators in 1956 developed a framework to categorize and achieve educational goals. It consists of taxonomy of educational objectives based on six major categories viz Knowledge, Comprehension, Application, Analysis, Synthesis, and Evaluation.

(a) Knowledge: It involves the recall of methods and processes.

(b) Comprehension: It implies understanding or apprehension being communicated.

(c) Application: It relates with the use of abstractions in particular and concrete situations.

(d) Analysis: It includes the "breakdown of a communication into its constituent elements to make the ideas more clear.

(e) Synthesis: It is the concept of creativity by putting together parts so as to form constructs the knowledge.

(f) Evaluation: It implies the judgments for given purposes.

Programme Specific Outcomes: B. A. Marathi

PSO01: Students will be able to get employability opportunities (**BL6**).

PSO02: To inculcate human values and their importance in life (**BL5**).

PSO03: To understand Marathi literature and sensitize the learners towards life shade (**BL2**).

PSO04: To realize reality and inspire learners for literary creations (**BL2**).

PSO05: To understand social issues, literature, literary criticism & culture (**BL6**).

PSO06: To provide employability to the learner in the field of media like T.V. radio, advertisement, translation and prepare for competitive examinations (**BL6**).

PSO07: To sensitize students for becoming responsible citizens in society (**BL6**).

Programme Specific Outcomes: B. A. Hindi

PSO01: बी.ए. हिंदी एक परंपरागत उपाधि है। हिंदी भाषा में उपाधि स्तर की पढाई के बाद विद्यार्थियों के लिए रोजगार के कई अवसर प्राप्त होते हैं (**BL6**).

PSO02: यह परंपरागत कोर्स मानवीय मूल्यों संवेदनाओं, इंसानीयत, नैतिकता, जीवन मूल्य, देशभक्ति, सांस्कृतिक पृष्ठभूमि, संस्कार आदि आयामों को लेकर भी विद्यार्थियों को ताकतवर बनाता है (**BL6**).

PSO03: लेखक और कवियों द्वारा लिखे गए विविध विधाओं के पाठ विद्यार्थियों के स्तर, उम्र और मानसिक विकास को ध्यान में रखकर रखे जाते हैं। इन पाठों का उद्देश्य भारत का भविष्य उज्ज्वल और तेजोमय हो ऐसी अपेक्षा होती है (**BL3**).

PSO04: समाचार लेखन, रेडियो वार्ता लेखन, विज्ञापन लेखन, प्रयोजनमूलक हिंदी, संप्रेषणमूलक हिंदी, अनुवाद, मीडिया लेखन, हिंदी में कंप्युटर का ज्ञान, अशुद्धि शोधन आदि पाठों से जुडा पाठ्यक्रम रोजगार तथा हिंदी भाषा की व्यावसायिक, व्यावहारिक और व्यापारिक सफलता को उजागर कर देता है (**BL6**).

PSO05: बी. ए. हिंदी की उपाधि प्राप्ति के बाद कई विद्यार्थी इन कोर्सो में आगे की पढाई के लिए जा चुके हैं। पत्रकारिता, अनुवाद, शिक्षा संस्थानों, उद्योग और व्यापार, बैंक आदि क्षेत्रों में काम कर रहे हैं और जिम्मेदार भारतीय नागरिक होने के नाते अपना योगदान भी दे रहे हैं (**BL6**)

PSO06: हिंदी साहित्य, समीक्षा, प्रादेशिक भाषा साहित्य तथा व्यावसायिक-प्रयोजनमूलक हिंदी के पाठों को पढकर निपुण बना विद्यार्थी एम.ए. बी.एड., एम. फिल., पीएच.डी., पत्रकारिता, अनुवाद जैसे कई क्षेत्रों में अपनी पढाई आगे जारी रखता है (**BL6**)

Programme Specific Outcomes: B. A. English

After completion of the B. A. English, students will be able to .....

PSO01: Analyze the structure of English phonology (**BL4**).

PSO02: Speak English in an accent that is understood by a majority of English speakers in Europe (**BL6**).

PSO03: Understand the basic principles of phonetics and phonology (**BL2**).

PSO04: Recognize and use of standard descriptive terminology for phonetics and English phonology (**BL6**).

PSO05: Identify and describe some non-standard varieties of spoken English (**BL5**).

PSO06: Know the International Phonetic Alphabet (**BL3**).

PSO07: Understand and evaluate speech mechanism, classification of sounds, description of consonants and vowels, word accent, intonation and phonetic transcription (**BL5**).

PSO08: Understand the noun phrase, verb phrase, adjective phrase, adverb phrase, prepositional phrase, complex phrase and subordinate clauses (**BL3**).

PSO09: Understand the structure of English language (**BL3**).

Programme Specific Outcomes: B. A. Sociology

PSO01: To enhance ability to design and implement social research (**BL6**).

PSO02: To compare the quantitative and qualitative methods in developing research methodology (**BL5**).

PSO03: To demonstrate sociological understanding of phenomena - social structures, social institution, cultural practices and multiple axes of difference and inequality (**BL3**).

PSO04: To understand social transactions, relations, formations, control, values and culture (**BL5**).

PSO05: To understand the significance of social institution, caste system, religion, nationalism, integrity, equality and justice (**BL4**).

PSO06: To apply the knowledge of the works of social reformers all over the nation (**BL3**).

PSO07: To develop ability to follow a new stream of thoughts and theories of social thinkers (**BL6**).

PSO08: To understand various social groups and their issues (**BL3**).

PSO09: To apply the different theoretical and sociological schools and concepts (**BL3**).

Programme Specific Outcomes: B. A. Economics

PSO01: To analyze cultural, historical, geographical, political, linguistic, and environmental forces shaping the world and recognize the role of an individual within communities to affect the change (**BL4**).

PSO02: To analyze and critically reflect on complex problems incorporating multiple perspectives and innovative thinking (**BL4**).

PSO03: To engage learners in scholarly inquiry to identify and investigate questions of theoretical and / or applied nature.

PSO04: To apply and integrate knowledge with perspectives across interdisciplinary boundaries (**BL6**).

PSO05: To understand personal integrity and professional behavior in scholarly endeavors and in collaborating with others within and beyond the academic community (**BL6**).

Programme Specific Outcomes: B. A. Political Science

PSO01: To understand social, economic, historical, geographical, political, ideological and philosophical tradition and thinking (**BL6**).

PSO02: To empower graduates to appear for competitive examinations and postgraduate programme (**BL6**).

PSO03: To understand the need for a constitution and the role of constitution in a democratic society (**BL2**).

PSO04: To explain the governmental mechanism from *Gram Panchayat* to parliament and suggest solutions over issues in its functioning and implementation (**BL5**).

PSO05: To understand political concepts and ideology for analyzing new situations (**BL4**).

PSO06: To acquire skills of political analyst, political party adviser, as a research scholar or freelance political thinker and writer (**BL6**).

PSO07: To understand and apply the political developments towards decentralization and regionalization (**BL4**).

Programme Specific Outcomes: B.A. History

PSO01: To understand basics of social sciences, literature and humanities which make learners sensitive and sensible enough (**BL6**).

PSO02: Graduates will acquaint with social, economic, historical, geographical, political, ideological and philosophical tradition and thinking ability (**BL3**).

PSO03: To empower graduates for appearing in competitive examinations and higher studies (**BL6**).

PSO04: To understand human values, frame the base to deal with problems in life with courage and humanity (**BL4**).

PSO05: To ignite the learners for thinking and finding solutions to issues prevailed in human life (**BL4**).

PSO06: To provide base as a responsible citizen (**BL6**).

PSO07: To build the pillars of interdisciplinary research, community leadership and cultural awareness (**BL6**).

Programme Specific Outcomes: B. A. Home Science

PSO01: To create awareness of scientific use of resources (**BL4**).

PSO02: To develop skills in creating design & making art objects like painting, printing articles and home decor (**BL6**).

PSO03: To develop abilities to apply the knowledge for self-employment as well as entrepreneurship in production, sales, research, teaching, counselor & many careers in government jobs, private hospitals, industries, national, international food organizations like NIN, ICMR, WHO (**BL6**).

PSO04: To build up problem solving skills in students (**BL6**).

PSO05: After completing UG Home-science, learners will be able to secure profitable employment in different sectors (**BL6**).

Programme Specific Outcomes: B. A. Drama

PSO01: To create self-confidence, ideas and personal abilities (**BL6**).

PSO02: To empower imagination, thinking of new ideas and view the surrounding world (**BL5**).

PSO03: To understand characters, roles and the subtext of plays and musicals that allows students to relate better to different situations, backgrounds, and cultures (**BL3**).

PSO04: To encourage learners with compassion and tolerance (**BL3**).

PSO05: To participate in collaborative activities, performance, role plays, rallies, and rehearsing (**BL6**).

PSO06: To develop high concentration for playing, practicing, and performing acts with a focus on mind, the body, and the voice (**BL6**).

PSO07: To enhance communication and observation skills with improvement in vocal projection, articulation, tone of speech and expression (**BL6**).

PSO08: To engage learners in play, humor, and laughter for motivating and reducing the stress (**BL6**).

PSO09: To develop emotional outlet including affection, aggression, tension and controlled environment (**BL4**).

PSO10: To enhance physical fitness, flexibility, coordination, balance, and control (**BL6**).

PSO11: To enhance memory skills of learners (**BL6**).

PSOs of Physical Education

PSO01: **Individual and team work**: Function effectively as an individual, and as a member or leader in diverse teams and in multidisciplinary settings (**BL6**).

PSO02: **Communication**: Communicate effectively on physical education, sports, games, sports event management related activities at varied complexity level sports community and with the society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations and give and receive clear instructions (**BL6**).

PSO03: **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 sports and games technological change (**BL6**).

Programme Specific Outcomes: B. A. Music

PSO01: Students acquire knowledge in the field of music which makes them sensitive, cultural and emotionally stable (**BL6**).

PSO02: To understand Indian classical music & its history (**BL2**).

PSO03: To develop learner's interest in Indian classical music and new technologies (**BL3**).

PSO04: To enhance the skills of an artist, musician, singer, and stage performer & in the technical fields - recording studio, music arranger (**BL6**).

PSO05: To understand structure of music in various forms - classical music, western music, folk art etc. (**BL2**).

PSO06: To balance student's mental health (**BL6**).

PSO07: To enhance learner's stage courage, built self-confidence and motivate the learners (**BL6**).

Programme Specific Outcomes: B. Sc. Physics

PSO01: To demonstrate knowledge of mechanics, heat, thermodynamics, optics etc. and apply it to analyze a broad range of physical phenomenon (**BL4**).

PSO02: To understand the concept of quantum mechanics, relativity and matter at atomic and molecular level (**BL2**).

PSO03: To understand proficiency in mathematical concepts needed for a proper understanding of physics (**BL2**).

PSO04: To understand the structure of solid material and its properties (**BL2**).

PSO05: To learn laboratory skills, analyze the measurement and conclude the results (**BL4**).

PSO06: To demonstrate written and oral communication skills in communicating physics related topics (**BL4**).

Programme Specific Outcomes: B. Sc. Chemistry

PSO01:   Students understand the basic and applied principles of chemical sciences (**BL2**).

PSO02:   To understand and apply physical properties of matter - melting point, boiling point, surface tension, viscosity, optical activity etc. (**BL2**).

PSO03:   To build foundations of advanced knowledge and higher education (**BL6**).

PSO04:   Students understand basic mathematical concepts and their applications (**BL2**).

PSO05:   Students understand different methods of compound analysis (**BL2**).

PSO06:   Students understand the role of chemistry in daily life (**BL2**).

PSO07:   Students learn the chemical composition of some of the products of routine use such as fats, oils, soaps etc (**BL4**).

PSO08:   Students can handle basic and modern instruments independently (**BL6**).

PSO09:   Students understand and follow safe laboratory practices (**BL6**).

PSO10:   Students learn problem solving approaches (**BL4**).

Programme Specific Outcomes: M. Sc. Chemistry

PSO01: Students can apply the knowledge of basic concepts to advance studies - named reactions, reagents, heterocyclic compounds, natural products in living organisms and their roles (**BL3**).

PSO02: Students understand the subject deeply and can develop appropriate approaches towards the subject (**BL2**).

PSO03: Students learn the handling of instruments (**BL6**).

PSO04: Students learn different spectral methods of analysis for structure elucidation (**BL6**).

PSO05: Students understand the principles of drugs design and retro-synthetic approach (**BL3**).

PSO06: Students can perform reactions, monitoring them independently and understand techniques for characterizing the products as the foundations of industries (**BL6**).

PSO07: The learners get the basic understandings of research- data generation, collection, conclusions and report writing (**BL2**).

PSO08: The programme enables the learners to qualify competitive examinations such as GATE, SET, and NET-JRF (**BL6**).

PSO09: Students become able to get jobs in industries, laboratories and teaching professions (**BL6**).

PSO10: Students become able to get responsible positions in scientific, industrial and academic sectors (**BL6**).

Programme Specific Outcomes: B. Sc. Mathematics

PSO01:   To enhance thinking ability of the learner (**BL4**).

PSO02:   To develop the skill of applications of mathematics to real life problems (**BL6**).

PSO03:   To study the numerical methods for the problems (**BL3**).

PSO04:   Understanding of number systems and their extension (**BL4**).

PSO05:   Students can solve differential equations (**BL3**).

PSO06:   Students can learn abstract mathematics (**BL2**).

PSO07:   To enable learners to generalize ideas in mathematics (**BL6**).

PSO08:   To enhance ability to solve linear differential equations of nth order (**BL6**).

PSO09:   To conduct the self-evaluations and continuously enrich learners through lifelong learning (**BL5**).

PSO10:   To set up mathematical models of real world problems and obtain their solutions (**BL3**).

Programme Specific Outcomes: B. Sc. Botany

PSO01:   A graduate of botany acquires various career opportunities (**BL3**).

PSO02:   Students acquire ability to work as botanists, work primarily outdoors, in forests, or fields for identification of plants (**BL6**).

PSO03:   Students can work in laboratories, museums, botanical gardens, or industries (**BL6**).

PSO04:   Students can progress to postgraduate/higher studies in natural science, agriculture, environmental science, and education (**BL6**).

PSO05:   Students can work to develop organic farming and bio-fertilizers production (**BL6**).

PSO06:   Students gets opportunities in forest department, pharmaceutical industries, botanical garden, landscaping, plant nurseries and breeding techniques (**BL6**).

Programme Specific Outcomes: M. Sc. - Botany

PSO01: Students can become plant pathologists, specialize in diagnosis of plant diseases (**BL4**).

PSO02: Learners can work as plant ecologists, taxonomists (**BL2**).

PSO03: Students can avail the opportunity to become plant evolutionary biologists and taxonomists (**BL6**).

PSO04: Learners can work as plant physiologists and molecular biologists for biochemical analysis (**BL6**).

PSO05: Students get employability opportunity in genetically altered food production, BSI, FRI, Seed companies, Agriculture section, Research Laboratories, Forest Departments, NGOS and different government sectors (**BL6**).

PSO06: Learners can work as plant scientists and in federal agencies (**BL6**).

Programme Specific Outcomes: B. Sc. Zoology

PSO01: To develop scientific principles, behaviors, evolution and physiological aspects of animals (**BL6**).

PSO02: To inculcate qualities of scientific attitude such as - identification, classification, observation, clarity of thoughts and expression, systematic approach, morphological and anatomical knowledge (**BL6**).

PSO03: To empower the graduates for various competitive examinations or higher studies (**BL6**).

PSO04: To update programme knowledge of learners and to study biodiversity (**BL6**).

PSO05: To provide employability opportunity to the learners in diverse fields such as forest department, genetic engineering, zoological survey of India, agricultural sector, academicians and self-business (**BL6**).

Programme Specific Outcomes: B. Sc. Electronics

After completion of the B.Sc. program with Electronics …..

PSO01: Students will acquire electronic skills (**BL6**).

PSO02: Students can become entrepreneurs to maintain electronic domestic appliances (**BL6**).

PSO03: Students can become entrepreneurs to maintain general electronic equipment (**BL6**).

PSO04: Students can opt career in industrial automation (**BL6**).

PSO05: Students can become an entrepreneur in system automation (**BL6**).

PSO06: Learners can progress in communication electronics (**BL6**).

PSO07: Learners can develop own electronic systems for specific purposes (**BL6**).

PSO08: Learners can work in industry (**BL6**).

PSO09: Learners become eligible for higher studies in electronics (**BL6**).

PSO10: Learners can make a career in Internet of Things (IOT) (**BL6**).

Programme Specific Outcomes: B. Sc. Computer Science

PSO01: This programme makes learners aware of the history of computer science and conceptual underpinnings of the subject (**BL3**).

PSO02: Students understand the nature of software development process, including the need to provide appropriate documentation (**BL2**).

PSO03: The programme empowers the graduates to appear for competitive examinations or choose the postgraduate programme of M. Sc. Computer Science (**BL6**).

PSO04: Student understand standard techniques for solving a problem on computers, including programming techniques and techniques of representation of information (**BL2**).

Programme Specific Outcomes: M. Sc. Computer Science

PSO01:   Students can utilize and implement hardware and software technologies that provide computing solutions to address the needs of an organization (**BL3**).

PSO02:   Student can identify various needs within organization and provide solutions by using computing technologies (**BL3**).

PSO03:   Student can apply basic cultural, social, legal, and ethical practices inherent in the discipline of computing (**BL3**).

PSO04:   Students understand, analyze and develop computer programs into algorithms, system software, compiler design, data mining, mobile computing and networking for efficient design of computer based systems of varying complexity (**BL2**).

PSO05:   Students can understand the principles of programming for applying in a broad range of languages and open source platforms (**BL2**).

PSO06:   Students can improve ability of imparting knowledge in real world problems with modern technological tools (**BL3**).

Programme Specific Outcomes: B. Sc. Biotechnology

PSO01:   Graduates understand biotechnology, science and engineering concepts to solve problems (**BL3**).

PSO02:   Graduates will be able to identify, analyze and understand problems related to biotechnology and find valid conclusions with basic knowledge in biotechnology (**BL4**).

PSO03:   Graduates can design and develop solutions to biotechnology problems (**BL6**).

PSO04:   Graduates can design, perform experiments, analyze and interpret data for investigating complex problems in biotechnology and related fields (**BL6**).

PSO05:   Graduates can decide and apply appropriate tools and techniques in biotechnological manipulation (**BL5**).

PSO06:   Graduates can justify societal, health, safety and legal issues and understand responsibilities in biotechnological engineering practices (**BL2**).

PSO07:   Graduates will be able to understand the need and impact of biotechnological solutions on environment and societal context keeping in view the need for sustainable solutions (**BL5**).

PSO08:   Graduates will have knowledge and understanding of related norms and ethics in biotechnology product / technique development (**BL2**).

PSO09:   Graduates will develop oral and written communication skills (**BL6**).

PSO10:   Graduates will have thorough knowledge in biotechnology and will also be ready to engage themselves in lifelong learning (**BL2**).

PSO11:   Graduates will be able to demonstrate knowledge of project and finance management in biotechnology problems (**BL3**).

Programme Specific Outcomes: M. Sc. Biotechnology

PSO01:   To provide an introduction to the basic concepts of Biotechnology and its recent advances (**BL2**).

PSO02:   To have a better understanding of advanced biochemistry, cell biology, molecular biology, immune technology, and microbial biotechnology (**BL2**).

PSO03:   To understand the advanced sections of biotechnology such as genetic engineering, nano-biotechnology, computational biology and medical biotechnology (**BL3**).

PSO04:   To provide necessary theoretical and practical experience in all divisions of biotechnology (**BL2**).

PSO05:   To pursue a professional career (**BL6**).

Programme Specific Outcomes: B. Sc. Microbiology

PSO01: Learners understand basics of medicine, agricultural, food sciences, ecology, genetics and biochemistry (**BL2**).

PSO02: Learners can understand basic and applied aspects of microbiology, cytology, physiology, ecology, genetics, molecular biology and taxonomy (**BL2**).

PSO03: Students can apply theoretical principles to address practical problems in medical microbiology, immunology, public health microbiology, food & dairy microbiology, agricultural microbiology & industrial microbiology (**BL3**).

PSO04: Students acquire knowledge of medical science, ecology, agriculture and biotechnology (**BL3**).

PSO05: Students will get career opportunities in industries such as food and dairy, agro based biotechnology industries, distilleries, beverages and pharmaceuticals (**BL3**).

PSO06: Students get opportunity to work as medical technologist, clinical or veterinary microbiologist, supervisors or laboratory managers, environmental microbiologist, in pollution control board, water and land management, public health department (**BL6**).

PSO07: Students can get an opportunity for self-employment- mushroom cultivation, plant tissue culture, fermented food products, small scale units and consultants (**BL6**).

Programme Specific Outcomes: M. Sc. Microbiology

PSO01: After PG course in Microbiology, the learner has a wider scope to work as research associate in microbiology, biotechnology, molecular biology, biochemistry, environmental science, and medical microbiology (**BL3**).

PSO02: The learner can get career opportunities as a scientist in virology research center, as research director, as teacher in colleges and universities (**BL3**).