Program Outcomes(PO), Program Specific Outcomes(PSO) and Course Outcomes(CO)

Assessment and Attainment Manual

NAAC SSR
Criterion II: Teaching, Learning and Evaluation
Metrics 2.6.1 and 2.6.2

Graduate Attributes

The graduate attributes reflect the particular quality and feature or characteristics of an individual, including the knowledge, skills, attitudes and values that are expected to be acquired by a graduate through studies at the higher education institution (HEI) such as a college or university. The graduate attributes include capabilities that help strengthen one‟s abilities for widening current knowledge base and skills, gaining new knowledge and skills, undertaking future studies, performing well in a chosen career and playing a constructive role as a responsible citizen in the society. The graduate attributes define the characteristics of a student's university degree programme(s), and describe a set of characteristics/competencies that are transferable beyond study of a particular subject area and programme contexts in which they have been developed. Graduate attributes are fostered through meaningful learning experiences made available through the curriculum, the total college/university experiences and a process of critical and reflective thinking. The learning outcomes-based curriculum framework is based on the premise that every student and graduate is unique. Each student or graduate has his/her own characteristics in terms of previous learning levels and experiences, life experiences, learning styles and approaches to future career-related actions. The quality, depth and breadth of the learning experiences made available to the students while at the higher education institutions help develop their characteristic attributes. The graduate attributes reflect both disciplinary knowledge and understanding, generic skills, including global competencies ,that all students in different academic fields of study should acquire/attain and demonstrate. Some of the characteristic attributes that a graduate should demonstrate areas follows:

1. **Disciplinary knowledge:** Capable of demonstrating comprehensive knowledge and understanding of one or more disciplines that form a part of an undergraduate programme of study.

2. Communication Skills: Ability to express thoughts and ideas effectively in writing and orally; Communicate with others using appropriate media; confidently share one‟s views and express herself/himself; demonstrate the ability to listen carefully, read and write analytically, and present complex information in a clear and concise manner to different groups.

3. Critical thinking: Capability to apply analytic thought to a body of knowledge; analyse and evaluate evidence, arguments, claims, beliefs on the basis of empirical evidence; identify relevant assumptions or implications; formulate coherent arguments; critically evaluate practices, policies and theories by following scientific approach to knowledge development.

4. Problem solving: Capacity to extrapolate from what one has learned and apply their competencies to solve different kinds of non-familiar problems, rather than replicate curriculum content knowledge; and apply one‟s learning to real life situations.

5. Analytical reasoning: Ability to evaluate the reliability and relevance of evidence; identify logical flaws and holes in the arguments of others; analyse and synthesise data from a variety of sources; draw valid conclusions and support them with evidence and examples, and addressing opposing viewpoints.

6. Research-related skills: A sense of inquiry and capability for asking• relevant/appropriate questions, problematising, synthesising and articulating; Ability to recognise cause-and-effect relationships, define problems, formulate hypotheses, test hypotheses, analyse, interpret and draw conclusions from data, establish hypotheses, predict cause-and-effect relationships; ability to plan, execute and report the results of an experiment or investigation.

7. **Cooperation/Team work**: Ability to work effectively and respectfully with diverse teams; facilitate cooperative or coordinated effort on the part of a group, and act together as a group or a team in the interests of a common cause and work efficiently as a member of a team.

8. Scientific reasoning: Ability to analyse, interpret and draw conclusions from quantitative/qualitative data; and critically evaluate ideas, evidence and experiences from an open-minded and reasoned perspective.

9. Reflective thinking: Critical sensibility to lived experiences, with self awareness and•reflexivity of both self and society.

10. Information/digital literacy: Capability to use ICT in a variety of learning situations,demonstrate ability to access, evaluate, and use a variety of relevant information sources; and use appropriate software for analysis of data.

11. Self-directed learning: Ability to work independently, identify appropriate resources required for a project, and manage a project through to completion.

12. Multicultural competence: Possess knowledge of the values and beliefs of multiple cultures and a global perspective; and capability to effectively engage in a multicultural society and interact respectfully with diverse groups.

13. Moral and ethical awareness/reasoning: Ability to embrace moral/ethical values in conducting one‟s life, formulate a position/argument about an ethical issue from multiple perspectives, and use ethical practices in all work. Capable of demonstrating the ability to identify ethical issues related to one‟s work, avoid unethical behaviour such as fabrication, falsification or misrepresentation of data or committing plagiarism, not adhering to intellectual property rights; appreciating environmental and sustainability issues; and adopting objective, unbiased and truthful actions in all aspects of work.

14. Leadership readiness/qualities: Capability for mapping out the tasks of a team or an organization, and setting direction, formulating an inspiring vision, building a team who can help achieve the vision, motivating and inspiring team members to engage with that vision, and using management skills to guide people to the right destination, in a smooth and efficient way.

15. Lifelong learning: Ability to acquire knowledge and skills, including learning how to learn‟, that are necessary for participating in learning activities throughout life, through self-paced and self-directed learning aimed at personal development, meeting economic, social and cultural objectives, and adapting to changing trades and demands of work place through knowledge/skill development/reskilling.

Undergraduate Degree Program Outcomes (PO)
B. Sc. and B. A

Program is defined as range of learning experiences offered to students in formal manner over a period of one to four years leading to certificates/diplomas/degrees. E.g. B. A. or B. Sc Students of B. A and B. Sc. Undergraduate Degree Programmes at the time of graduation will be able to:

PO1.	**Self-directed and Life-long Learning**: Self-equipped to engage in independent and life-long learning in the broadest context of socio-cultural and technological changes.
PO2	**Effective Communication:** Speak, read, write and listen clearly in person and through electronic media in English and in one Indian language, and make meaning of the world by connecting people, ideas, books, media and technology.
PO3	**Effective Social Interaction:** Elicit views of others, mediate disagreements and help reach conclusions in group settings.
PO4	**Evaluative Thinking**: Take informed actions after identifying the assumptions that frame our thinking and actions, checking out the degree to which these assumptions are accurate and valid, and looking at our ideas and decisions (intellectual, organizational, and personal) from different perspectives.
PO5	**Ideal Citizenship**: Demonstrate empathetic social concern and equity centred national development, and the ability to act with an informed awareness of issues and participate in civic life through volunteering.
PO6	**Ethics:** Recognize different value systems including one's own, understand the moral dimensions of one's decisions, and accept responsibility for them.
PO7	**Environment and Sustainability**: Understand the issues of environmental contexts and sustainable development
PO8	**Digital Knowledge System:** Adequate training in the application of digital knowledge in higher education and workplace
PO9	**Project Work and Oral Examination**: Equip students to demonstrate their own work and to investigate their awareness in relation to the wider research field

Undergraduate Degree Program Outcomes (PO)
B. Voc.

Students of BVoc Undergraduate Degree Programmes at the time of graduation will be able to:

PO1.	To provide judicious mix of skills relating to a profession and appropriate content of General Education.
PO2	To ensure that the students have adequate knowledge and skills, so that they are work ready at each exit point of the programme.
PO3	To provide flexibility to the students by means of pre-defined entry and multiple exit points.
PO4	To integrate NSQF(National Skills Qualification Framework) within the undergraduate level of higher education in order to enhance employability of the graduates and meet industry requirements. Such graduates apart from meeting the needs of local and national industry are also expected to be equipped to become part of the global workforce..
PO5	To provide vertical mobility

Post graduate Degree Program Outcomes(PO)
M. A. and M. Sc.

Students of all Postgraduate Degree Programmes at the time of graduation will be able to:

PO1.	**Formulating masters of knowledge in specific subjects:** to enhance the general subject knowledge and provide with the chance to tackle advanced independent research-projects on a smaller scale.
PO2	**Technological Excellence:** enables students to adjust to their own pace of learning. Technology-Enhanced Learning (TEL) makes even the most mundane tasks more engaging and helps students to stay focused
PO3	**Expertise in Digital Communication,** Digital Trade and Entrepreneurship: helps students develop their transversal skills and have an insight into the working environment of an entrepreneur
PO4	**Current Literary Trends**: familiarising students with the recent trends in language and literature.
PO5	**Pathfinders in Scientific Exploration**: enhances the development of critical thinking skills that lead to the ability to reason logically and problem-solve creatively
PO6	**Creating New Methodologies:** Students learn to go beyond the conventional systems and tackle the innovative spheres of learning. Active learning methods like brainstorming, mind mapping, peer teaching, flipped classroom, etc make learning more engaging.
PO7	**Practising Green Philosophy**: promotes environmental sustainability through various environment-friendly means that encourage judicious use of resources thereby ecologising the philosophy of education.
PO8	**Research Activity**: apply Research based knowledge and methodologies to design, analyse and interpretation of data and find the solutions for complex problems by applying right tools. Provide an excellent bridge between undergraduate study and PhD research
PO9	**Employability**: postgraduate study boosts the career progress and chart out the career paths. It demonstrates the ability to tackle complex and challenging assessment tasks.
PO10	**Dissertation and Viva Voce:** To enable the students to present their arguments in comprehensible and scholarly manner and to enkindle the spirit of research in their minds

Program Specific Outcomes(PSO) of undergraduate programmes (B. A. , B. Sc. and B. Voc.)

Program Specific Outcomes(PSO) are defined as statements that describe what the graduates of a specific educational Programme should be able to do.

B. A. English	
PSO1	Demonstrate a set of basic skills in literary communication and explication of literary practices and process with clarity
PSO2	Demonstrate a coherent and systematic knowledge of the field of English literature and Bhasha literatures in English showing an understanding of current theoretical and literary developments in relation to the specific field of English studies.
PSO3	Display an ability to read and understand various literary genres and stylistic variations and write critically
PSO4	Cultivate ability to look at and evaluate literary texts as a field of study and as part of the wider network of local and global culture
PSO5	Demonstrate a critical aptitude and reflexive thinking to systematically analyze the existing scholarship and expand critical questions and the knowledge base in the field of English studies using digital resources
PSO6	display knowledge to cultivate a better understanding of values – both literary values that aide us in literary judgment and also values of life at all stages; apply appropriate methodologies for the development of the creative and analytical faculties of students, their overall development of writing, including imaginative writing
PSO7	recognize employability options in English studies programme as part of skill development and as career avenues open to graduates in today's global world such as professional writing, translation, teaching English at different levels, mass media, journalism, aviation communication and personality development
PSO8	channelize the interests of the students and analytical reasoning in a better way and make more meaningful choices regarding career after completion of graduate programme
PSO9	to enable students to develop an awareness of the linguistic-cultural richness of India as an important outcome of English literary studies in India
B. A. Economics	
PSO1.	To build a strong foundation in Economics by understanding the basic concepts, principles and theories in Economics.
PSO2	To understand competing economic paradigms and the historical development of the discipline.
PSO3	To analyze historical and current events from an economic perspective.

PSO4	To develop the ability to apply the principles of Economics in everyday life.
PSO5	To create capacity to develop solutions to various economic problems.
PSO6	To equip the students for employment and further study in economics.
B. A. Political Science	
PSO1	To identify key questions, fundamental concepts, and theoretical frameworks critical to an understanding of the political theory
PSO2	To analyse the fundamental concepts, characteristics, and theories central to comparative politics and international politics
PSO3	To solve complex problems by demonstrating a mastery of substantive knowledge in the discipline's main subfields
PSO4	To follow scientific and humanistic methods to design and carry out politicallyoriented research projects by utilizing sufficiently advanced social research methods
PSO5	To communicate effectively political knowledge to general audiences as well as colleagues in the field
B. Sc. Mathematicls	
PSO1	To provide logic framework in all areas of basic mathematics
PSO2	To attain foundation in basic mathematics
PSO3	To learn powerful tools for tackling topics in calculus
PSO4	To learn powerful tools for talking topics in geometry
PSO5	To learn powerful tools for talking topics in theory of equations
PSO6	To get an introduction to almost all areas of Mathematics
B. Sc. Physics	
PSO1	Provide a comprehensive framework of all areas of Physics.
PSO2	Understand the concepts and significance of the various physical phenomena
PSO3	Apply the theories learnt and the skills acquired to solve real time problems.
PSO4	Acquire a wide range of problem solving skills, both analytical and computational and to apply them.
PSO5	Motivate students to higher studies and research in different areas of basic and applied Physics.
PSO6	Enhance the student's academic abilities, personal qualities and transferable skills to develop as responsible citizens
B. Sc. Chemistry	
PSO1	Acquiring the basic concepts in Chemistry so as to develop to develop interest in the study of chemistry as a discipline.
PSO2	Learning the art of need based solutions to the scientific problems through methodical, logical and logical thinking.
PSO3	Development of experimental skills through hands on experience by experimenting with concept.
PSO4	Proper understanding of chemicals , apparatus and instruments for their better usage
PSO5	Development of skills for preparation of solutions required for carrying out the practical
PSO6	Correlating the relevance of Chemistry in day-to-day life
PSO7	Understanding the Chemistry practised by Nature to gain insight in the functioning of living organisms on the Mother Earth

PSO8	Practising the good laboratory practices and safety norms for proper handling of toxic chemicals
PSO9	Critical analyses of experimental data so as to draw a goal-specific and objective conclusion
PSO10	Rationalise the thinking towards greener approach for sustainable development in Chemistry by adopting natural resources
PSO11	Inculcating the interdisciplinary mind-set for better understanding of Chemistry through the window of other science subjects
PSO12	Development of various skills such as communication, writing, reading and listening to scientific literature
B. Sc. Botany	
PSO1	To lay a strong foundation w.r.t. plant diversity, physiology cell biology and molecular biology to develop clear basic concepts.
PSO2	To study the basic and important branches of Botany like morphology and anatomy to study and classify plants.
PSO3	To make students aware of the importance of botany in day to day life. .
PSO4	To get familiar with basics of ecological studies. Understanding of food chain, food web, their importance; plants growing in different environments and their characters. .
PSO5	To create awareness w.r.t. protection and conservation of our environment . Based on learning at F.Y.B.Sc. level, the concepts in plant physiology are learnt in certain depth to know the mechanisms at various levels and their applications.
PSO6	To study basics of plant biotechnology like gene cloning, vectors and applications of plant biotechnology in details
PSO7	To develop scientific attitude and reasoning capacity
PSO8	To acquire skills related to laboratory work and field work
PSO9	To build concepts in various fields of Botany like cell biology, molecular biology, genetics, medicinal plants and their conservation, seed technology, lower and higher cryptogams, biostatistics and computers etc. are learnt in detail so that students would be able to think independently on a problem and try to find out some solution for that
PSO10	To prepare foundation for the entry in University departments for post graduation as well as various competitive examinations and jobs related to life science
PSO11	To be aware about conservation and sustainable use of biodiversity
B. Sc. Zoology	
PSO1	Identify and list out common animals
PSO2	Explain various physiological changes in our bodies
PSO3	Analyze the impact of environment on our bodies
PSO4	Understand various genetic abnormalities
PSO5	Develop respect for nature

PSO6	Explain the role and impact of different environmental conservation programmes
PSO7	Identify animals beneficial to humans
PSO8	Identify various potential risk factors to health of humans
PSO9	Explain the importance of genetic engineering
PSO10	Use tools of information technology for all activities related to Zoology
BCA	
PSO1	An ability to apply knowledge of computing and mathematics appropriate to the discipline.
PSO2	An ability to identify, formulate, and develop solutions to computational challenges.
PSO3	An ability to design, implement, and evaluate a computational system to meet desired needs within realistic constraints
PSO4	An ability to function effectively on teams to accomplish shared computing design, evaluation, or implementation goals
PSO5	An understanding of professional, ethical, legal, security, and social issues and responsibilities for the computing profession
PSO6	An ability to communicate and engage effectively with diverse stakeholders.
PSO7	An ability to apply mathematical foundations, algorithmic principles, and computer science theory in the modeling and design of computational systems in a way that demonstrates comprehension of the tradeoffs involved in design choices
PSO8	An ability to use appropriate techniques, skills, and tools necessary for computing practice.
PSO9	An ability to apply design and development principles in the construction of software systems of varying complexity
B. Sc. Electronic Science	
PSO1	Ability to apply knowledge of mathematics & science in solving electronics related problems
PSO2	Ability to design and conduct electronics experiments, as well as to analyze and interpret data
PSO3	Ability to design and manage electronic systems or processes that conforms to a given specification within ethical and economic constraints
PSO4	Ability to identify, formulate, solve and analyze the problems in various disciplines of Electronics
PSO5	Ability to function as a member of a multidisciplinary team with sense of ethics, integrity and social responsibility
PSO6	Ability to communicate effectively in term of oral and written communication skills
PSO7	Recognize the need for, and be able to engage in lifelong learning.
PSO8	Ability to use techniques, skills and modern technological/scientific/engineering software/tools for professional practices
B. Sc. Microbiology	

PSO1	Acquired knowledge and understanding of the microbiology concepts as applicable to diverse areas such as medical, industrial, environment, genetics, agriculture, food and others.
PSO2	Demonstrate key practical skills/competencies in working with microbes for study and use in the laboratory as well as outside, including the use of good microbiological practices.
PSO3	Competent enough to use microbiology knowledge and skills to analyze problems involving microbes, articulate these with peers/ team members/ other stake holders, and undertake remedial measures/ studies etc.
PSO4	Developed a broader perspective of the discipline of Microbiology to enable him to identify challenging societal problems and plan his professional career to develop innovative solutions for such problems.
B. Sc. Computer Science	
PSO1	Demonstrate the aptitude of Computer Programming and Computer based problem solving skills.
PSO2	Display the knowledge of appropriate theory, practices and tools for the specification, design, implementation
PSO3	Ability to learn and acquire knowledge through online courses available at different MOOC Providers
PSO4	Ability to link knowledge of Computer Science with other two chosen auxiliary disciplines of study.
PSO5	Display ethical code of conduct in usage of Internet and Cyber systems.
PSO6	Ability to pursue higher studies of specialization and to take up technical employment
PSO7	Ability to formulate, to model, to design solutions, procedure and to use software tools to solve real world problems and evaluate .
PSO8	Ability to operate, manage, deploy, configure computer network, hardware, software operation of an organization
PSO9	Ability to present result using different presentation tools.
PSO10	Ability to appreciate emerging technologies and tools
B. Sc. Statistics	
PSO1	Demonstrate the ability to use skills in Statistics and different practicing areas for formulating and tackling Statistics related problems and identifying and applying appropriate principles and methodologies to solve a wide range of problems associated with Statistics
PSO2	Acquire (i) fundamental/systematic or coherent understanding of the academic field of Statistics and its different learning areas and applications (ii) procedural knowledge that creates different types of professionals related to subject area of Statistics, including professionals engaged in government/public service and private sectors; (iii) skills in areas related to one's specialization area within the disciplinary/subject area of Statistics and emerging developments in the field

	of Statistics.
PSO3	Recognize the importance of statistical modeling and computing, and the role of approximation and mathematical approaches to analyze the real problems using various statistical tools.
PSO4	Plan and execute Statistical experiments or investigations, analyze and interpret data/information collected using appropriate methods, including the use of appropriate statistical software including programming languages, and report accurately the findings of the experiment/investigations.
PSO5	Demonstrate relevant generic skills and global competencies such as (i) problem-solving skills that are required to solve different types of Statistics related problems with well-defined solutions, and tackle open-ended problems that belong to the disciplinary-area boundaries; (ii) investigative skills, including skills of independent thinking of Statistics-related issues and problems; (iii) communication skills involving the ability to listen carefully, to read texts and reference material analytically and to present information in a concise manner to different groups/audiences of technical or popular nature; (iv) analytical skills involving paying attention to detail and ability to construct logical arguments using correct technical language related to Statistics and ability to translate them with popular language when needed; (v) ICT skills; (vi) personal skills such as the ability to work both independently and in a group
PSO6	Demonstrate professional behavior such as (i) being objective, unbiased and truthful in all aspects of work and avoiding unethical, irrational behavior such as fabricating, falsifying or misrepresenting data or committing plagiarism; (ii) the ability to identify the potential ethical issues in work-related situations; (iii) appreciation of intellectual property, environmental and sustainability issues; and (iv) promoting safe learning and working environment
PSO7	Developing a holistic approach towards data visualization, analysis, and interpretation
B. A. Hindi	
PSO1	Understand the history of Hindi Literature in the context of the present scenario and develop a futuristic outlook.
PSO2	Understand the different streams of poetry of different eras, like the freedom struggle developing feelings of patriotism, and also differentiate between poetry for common people and class people, as well as their impact at the national and international levels.
PSO3	To understand literary criticism and theoretical perspectives of Hindi literature and become capable of literary writing.
PSO4	Understand and define correctly different issues present in Indian society

	(poverty, illiteracy, capitalism, gender issues, and caste and class issues) by studying stories, novels, dramas and other prose.
PSO5	Have a clear concept of communication and mass media, their history, types, importance and uses in the present era, along with the ability to develop writing skills in regard to this and build a career in this field.
PSO6	Be a thoughtful, skilled, independent, worthy and competent citizen of the society, nation and world.
B. A. History	
PSO1	To distinguish facts from myths.
PSO2	To develop a critical thinking of historical facts, events and interpretations.
PSO3	To recognize causes and effects of events.
PSO4	To have a knowledge and familiarity with multiple cultures
PSO5	To look at things in a global perspective
PSO6	To evaluate how history has been shaped throughout the ages.
PSO7	To be able to evaluate historical information from multiple sources.
B. A. Geography	
PSO1	To study the physical as well as cultural elements of the environment and co-relate these elements with plant, animals and mankind
PSO2	To learn multifacial resources of our earth, their utilization and distribution
PSO3	To learn the techniques of adjustment with the sustainable resource development so that, each and every resource could be preserved.
PSO4	To maintain the equilibrium between development utilization and exploitation so that life become peaceful and our planet is happy, devoid of pollution degradation and disparities.
B. A. Sociology	
PSO1	Understand Principles of sociology
PSO2	to understand various social institutions like marriage, family, kinship, religion and education and their important role in the society
PSO3	To understand various social development issues that prevail in the Indian society. The major problems like family disorganization, crime, juvenile delinquency, child labour and problems of aged possible are discussed and possible solutions are suggested
PSO4	To understand what is social research and what are the advanced techniques of social research.It also helps learners to understand the conceptual framework and theoretical base of sociology, which enables students to study society in scenario of globalisation, gender equity, policy making and developmental issues.
PSO5	It enables the learners to understand social thought and sociological theories. It helps to know the concept sex and gender. The learner is able to understand status of women in Indian society and women and social institution and various feminist theories .it also enlighten important gender issues in India and policies related to women empowerment
BLib	
PSO1	Demonstrate in depth knowledge of the basic concepts, principles, theories

	and laws related with the broad field of Library and Information Science and its sub-fields such as types of libraries, types of information sources, library management, reference and information services.
PSO2	Demonstrate understanding of rationality and procedures of (i) selection, acquisition, classification, cataloguing and physical processing of documents; (ii) using Information and Communication Technologies in Libraries and Information Centers; (iii) providing library and information services and managing other library routine activities.
PSO3	Apply skills in carrying out professional activities such as (i) acquisition, accessioning, classification, cataloguing, and physical processing of documents; (ii)housekeeping operations using library management software and Information and Communication Technologies;(iii) maintaining library collection and; (iv) educating users..
PSO4	Demonstrate skills in providing various library services such as document circulation, reference and information services, Internet and database searching.
PSO5	Demonstrate knowledge, understanding and skills that offer job opportunities as librarians in public libraries and school libraries; as assistant librarians in different types of college libraries, as library assistants / technical assistants in university libraries and other libraries of higher education institutes, as librarians and/or assistant librarians in corporate and industrial libraries, libraries of research institutes, etc.
PSO6	Demonstrate professional attitude through commitment for providing every user his/her document/information; ensuring every document/information its user; saving time of the user and enhancing use of reading material and user satisfaction through effective and efficient library services
PSO7	Demonstrate core values by honouring diversity and insuring inclusion by treating all students and colleagues with respect and dignity, showing respect for and sensitivity to gender, culture and religious differences; and challenging prejudice, biases and intolerance at the workplace etc. and displaying ethical integrity which involves honest behavior
B. Sc. Biotechnology	
PSO 1	Impart knowledge and facilitate basic understanding about Animal, Plant and Microbial Science.
PSO 2	Introduce and develop concepts in fundamental subjects of life science like Cell Biology, Molecular Biology, Developmental Biology, Biochemistry, Genetics Immunology and Environment Science
PSO 3	Develop concepts in Physics, Chemistry, Mathematics and Statistics and their applications in Biotechnology
PSO 4	Develop practical skill sets through hands on experimentation and field exposure
PSO 5	Introduce to application of Biotechnology through subjects likeTissue Culture , fermentation and Recombinant DNA technology.

PSO 6	Help the students to build interdisciplinary approach
B. A. Marathi	
PSO1	Understand the different types of Marathi literature
PSO2	Analyze Marathi poems and novels
PSO3	Compare contribution of different Marathi poets and writers in Marathi literature
PSO4	Develop skills like script writing, poem and novel writing
PSO5	Ability for employability and/or related career paths
B.Voc Mass Communication/Media Convergences	
PSO1	To inculcate basic Computer skills among students.
PSO2	To acquire knowledge about basic and advanced human communication theories and models for effective implementation in academic and professional situations.
PSO3	To manifest diverse anchoring, Event management, Radio and Television skills
PSO4	To initiate various expertises in the fields of Photographic, video recording, Film and documentary making.
PSO5	To make ready for entry level jobs in media houses
PSO6	To encourage them to peruse Post Graduation in concern fields
B. Voc Beauty and Wellness	
PSO1	To accomplish Basic and Advance beauty, Hair, and Make –up skills.
PSO2	To make the students promptly ready for various job roles in Salon, Spa and Hospitality industry
PSO3	To encourage students to exhibit various Entrepreneur skills
PSO4	To acquire and to conceptualize, implement and evaluate the functions, metabolism, requirements and effects of deficiency of nutrients.
PSO5	To effectively understand the role of food and nutrients in health and disease prevention.
PSO6	To successfully develop the balanced diet to improve the general wellness of an individual if required by altering their diet plans.
PSO7	To constructively recognize the herbal science in various cosmetics with effective formulation of Herbal cosmetic.
PSO8	To attain preliminary knowledge of Naturopathy and Yoga.
PSO9	To encourage students to peruse further education in concerned fields.
PSO10	To encourage students to exhibit various Entrepreneur skills
B. A. Psychology	
PSO1	To understand different fields of Psychology and how psychology can be applied in those fields
PSO2	To understand the background and various schools of thoughts in the realm of Psychology
PSO3	To distinguish the myths and facts of psychology being practiced, heard and

	learned
PSO4	To build the theoretical background of the concepts like Memory, Attention, Statistics, Perception etc. which will help them further in the masters' project
PSO5	Introduction to important fields like clinical, industrial, counselling, social etc. which will help them and ensure them about their decision making of their major subjects
PSO6	Develop ability of rapport establishment, active listening, administering tests and experiment, preparing a report which is the key factors of psychology professionals
PSO7	Introduction of the technical skills like psychometrics and research methodology which is one of the major branch of psychology
PSO8	Ability to explore various societal issues related to the theoretical basis and develop skills in understanding the problems, identifying the causes and consequences and skill enhancement in finding solution for it

.

Program Specific Outcomes(PSO) of Post graduate programmes (M. A and M. Sc.)

M. A Political Science	
PSO1	Know how a variety of political systems operate in the world including that of India
PSO2	Identify the various institutions of the Government and the role of Constitution in it
PSO3	.Learn the various concepts and theories to understand and look into a variety of political and social phenomena in their selected area
PSO4	Identify an area of concentration for in-depth study, and analyze a variety of political and social phenomena
PSO5	Evaluate, critique, and synthesize scholarship in their selected area of concentration
PSO6	Conduct original research that investigates political or social phenomena in their area of concentration using Appropriate methodologies and theories
M. A. Hindi	
PSO1	to write articles as well as acquire the mastery in oratory and in studies in Hindi language.
PSO2	go for research work in higher degree programs in respective subjects.
PSO3	can pursue a career in both public and private sectors such as government departments and agencies, health sectors, travel and tourism sector, journalism and mass communication, media and advertising, interpreting and translation services, market research and public relation company
M. Sc. Physics	
PSO1	Define the physical principles underlying a wide selection of physical

	phenomenon.
PSO2	Describe and critically evaluate the current state-of-the-art in selected areas of physics.
PSO3	Demonstrate the ability to plan, undertake, and report on a programme of original work; including the planning and execution of experiments, the analysis and interpretation of experimental results. Assess the errors involved in an experimental work and make recommendations based on the results in an effective manner
PSO4	To obtain employment in research and development, in the scientific or engineering industries. Alternatively, graduates will have the necessary numerical and transferable skills to allow them to move into a range of more general career choices such as accounting or computing
PSO5	Graduates from this programme will be eligible to continue research at the higher degree (PhD) level
M. Sc. Electronic science	
PSO1	Ability to design, develop and implement electronic circuits in analog,digital,communication and instrumentation
PSO2	Able to solve real time problems using acquired knowledge of electronic circuit analysis as well as programming
PSO3	Able to design embedded systems for identified applications
PSO4	Able to work in industrial environment due to internship and project included in curriculum
PSO5	Ability to work on different platforms as well as with latest technologies such as artificial intelligence, IoT, machine learning etc
PSO6	Ability of self employability as well as industry
M. Sc. Microbiology	
PSO1	understand and be able to explain different branches of Microbiology such as Bacteriology and Virology
PSO2	able to explain about various applications of Microbiology such as Environmental Microbiology, Industrial Microbiology, Food Microbiology, and Microbial Pathogenicity.
PSO3	able to design and execute experiments related to Basic Microbiology, Immunology, Molecular Biology, Recombinant DNA Technology, and Microbial Genetics,
PSO4	able to execute a short research project incorporating techniques of Basic and Advanced Microbiology under supervision
PSO5	equipped to take up a suitable position in academia or industry, and to pursue a career in research if so desired
M. Sc. chemistry	
PSO1	Acquiring the knowledge from different branches of Chemistry
PSO2	Understanding the potential of broad dimensions of Chemistry with its tentacles in different disciplines
PSO3	Designing of skill-based experiments with logical and analytical thinking so as to achieve

	better results
PSO4	Learning the potential usage of hyphenated analytical techniques so as to meet the demand of Chemical Industry
PSO5	Development of knowledge in the fundamental concepts like physical aspects of atomic structure, reaction pathways, role of metal ions in biomolecules, photochemical process, drug-designing and natural products
PSO6	Understands the background of organic reaction mechanisms, complex chemical structures, instrumental method of chemical analysis, molecular rearrangements and separation techniques.
PSO7	Practising the good laboratory practices and safety norms for proper handling of toxic chemicals
PSO8	Understanding the Chemistry practised by Nature to gain insight in the functioning of living organisms on the Mother Earth
PSO9	Critical analyses of experimental data so as to draw a goal-specific and objective conclusion
PSO10	Rationalise the thinking towards greener approach for sustainable development in Chemistry by adopting natural resources
PSO11	Inculcating the interdisciplinary mind-set for better understanding of Chemistry through the window of other science subjects
PSO12	Development of various skills such as communication, writing, reading and listening to scientific literature
M.Sc. Computer Science	
PSO1	Problem solving abilities amongst the students
PSO2	Professionally trained for software industry
PSO3	Analytical abilities and Software skills developed for solving real time problems
PSO4	Develop entrepreneurs for innovative software products
M. Sc. Biotechnology	
PSO 1	To gain in depth knowledge in life science subjects and their application in the field of Genetic Engineering, Bioprocess Engineering, Immunology , Stem Cell Technology, Agriculture, Nano-biotechnology and Bioinformatics
PSO 2	Develop planning, analysing and reasoning abilities through practical courses and research project.
PSO 3	Expose them to advanced techniques and applications through extensive practical courses and research project.
PSO 4	To make students competent enough to take responsibilities in the field of Research, Industries and Academics.
PSO 5	To inculcate sense of scientific responsibilities and understand importance of Bioethics and IPR
M. A. Journalism and mass communication	
PSO1	To implement effectively the process of communication, dissemination and language.
PSO2	To gather, analyze and create information on contemporary issues for print, broadcast and other digital media.
PSO3	To Write and edit authentic, graceful and grammatically correct prose for a news story/copy

PSO4	To analyze numerical data and utilize databases for multi-layered storytelling.
PSO5	To constructively use reliable visual aids to tell stories ethically.
PSO6	To demonstrate an awareness of journalism as an ethical practice.
PSO7	To exhibit skills required for entry-level position in the profession through a portfolio exhibiting their work.
PSO8	To encourage students to carry out further Research activities.
M. A. Pyschology	
PSO1	To prepare them with the skills required for acquiring Psychology as a professional and apply the theoretical knowledge in the real practice
PSO2	Ability to administer psychometrics, prepare professional reports and provide guidance and counselling
PSO3	Ability to research the problem areas, carry out research methodology and find out solutions with their findings
PSO4	Ability to work in a field of clinical psychology under supervision or pursue further clinical psychology professional courses
PSO5	Develop an entrepreneurship ability in the realm of psychology
PSO6	Ability to pursue career as a professional in ranges like social sector, private clinics, hospitals, schools, colleges, industries, research institutes and etc.
M. Sc. Biodiversity	
PSO1	Demonstrate the 1) ability to identify Plants, Animals and Microbes 2) ability to work in field and lab for capacity building.
PSO2	Able to execute presentations, documentary, poster and research article writing skills individually and in group.
PSO3	Ability to develop independent funding proposals, formulate questionnaire and work at grass root level
PSO4	Work with the interdisciplinary approach to address an issue related to biodiversity conservation and use tools like RTI for seeking desired info
PSO5	Network building through interaction studies
PSO6	Recognize employability in Institutes, explore entrepreneur and free Lansing skills
M. A. English	
PSO1	knowledge and insight into English language and Literature on an advanced level
PSO2	openness to new ideas, perspectives and ways of thinking
PSO3	aesthetic sensibility; critical and analytical skills; creativity.

PSO4	skill in research and research methodology.
PSO5	skill in organizing and expressing ideas and perspectives with clarity and coherence through writing and speech.
PSO6	Skill in narration, description and argumentation
PSO7	ability to attempt theory based evaluation and analysis of literary texts.
PSO8	knowledge of world literatures and insight into different cultural traditions
PSO9	ability to negotiate the challenges of life and have enhanced career prospects and employability
M. A. Economics	
PSO1	Comprehensive knowledge in economic theory at an advanced level.
PSO2	Comprehension and critical appraisal of the way in which the economy is influenced by policy
PSO3	Exposure to various quantitative techniques which are essential to analyse economic issues
PSO4	Analyse existing economic models and evaluate their relevance for practical problem
PSO5	solving. Identifying economic problems to be analysed and understanding how theory and empirical
PSO6	conditions are to be connected. Planning and carrying out applied work and research projects in economics
PSO7	Ability for hypothesising and problem solving

Attainment of Course outcomes

The major components of Learning outcomes are Course Outcome(CO) and Program Outcome(PO). Based on how well these two parts are defined and evaluated, attainment CO is measured.

COs are the statements of knowledge/ skills/ abilities that students are expected to know, understand and perform as a result from their learning experiences in each course.A well written CO facilitates lecturers in measuring the achievement of the CO at the end of the semester. It also helps the teachers in designing suitable delivery and assessment methods to achieve the designed CO.

CO can be defined and verified by using SMART principle as given below.

Specific	They must provide description of precise behaviour and situation it will be performed. And must be concrete, focused and detailed
Measurable	The performance of the objective must be observed and measured
Achievable	The objective must be achieved by using reasonable amount of effort
Realistic	They must be appropriate for the student and the situation
Time-bound	Must be clearly stated with a time limit for accomplishing objective

Calculating Course Outcome(CO)

Calculating Course Outcomes (CO) involves calculations from the marks obtained by the students in their internal exams, university exams and internal assessment metrices such as

quiz, seminar, presentation, mini project, assignment etc., The indirect method represents a part of Program Outcome is purely survey oriented, so the calculations are based on data and surveys collected from the Current passing out students, Stakeholders, Alumni, Survey from placement officers etc.,

Things to be considered for Calculating CO attainment

- Every internal assessment metrices must be mapped to their corresponding CO's

Test	CO1
Quiz	CO2
Presentation	CO3
Seminar	CO4
Group Mini Project	CO5

- While defining question paper for exams, questions must be chosen based on their corresponding CO's weightage and must be mapped to their CO's. This helps us to calculate the performance of a student for a CO

Calculating CO level for internal examinations

- As discussed above, the internal exam questions must be mapped to their CO's, this help us to list the marks obtained by students for CO in the below image.
- RUBRICS helps us to define the threshold through which level of attainment of a CO's are calculated.
- Rubrics are a simple way to set up some grading criteria through which level of attainment is calculated by using some predefined values.

- Rubrics example used in sample calculation is given below

RUBRICS
50% OF STUDENT ABOVE 50% – 1 (LOW)
60% OF STUDENT ABOVE 50% – 2 (MEDIUM)
70% OF STUDENT ABOVE 50% – 3 (HIGH)

- The Threshold value is the Minimum pass percentage for each CO in a subject

Step 1: Calculating CO level for internal exams

- The marks obtained the students for each CO in an exam (internals) are listed out as shown in the below figure based on the weightage allocated (max mark CO wise) for the CO's in the exam. Level of CO attainment is based on the percentage of students above the threshold percentage.
- For example: In the table below to calculate the level of CO1 for Test 1, the marks scored by 4 students are listed CO-wise and their max mark is specified. Since 50 is the pass percentage threshold and rubrics are set for 50%, by calculating number of students above threshold (only 2 out of 4 which is 50%) the level is defined as 1(low) as specified in the rubrics

Students	Test 1 (marks obtained out of 50)		Test 2 (Marks obtained out of 50)	
	CO1	CO2	CO1	CO
Student 1	30	20	25	35
Student 2	26	10	25	35
Max marks	50	50	50	50
Threshold level(50%)	25	25	25	25
No of students above level	2	0	0	2
Level	3	1	1	3

Rubrics:

50% of students above 50%: Level 1(LOW)

60% of students above 50%: Level 2(MEDIUM)

70% of students above 50%: Level 3(HIGH)

Step 2: Calculating Final CO attainment for the subject

Based on the level of CO obtained for internal and external from the above method the final CO attainment is calculated. The level of CO of each test are listed in the below format.

	Internal exams and assessments

Course	TEST1	TEST2	Average of internal assessement
CO1	3	1	2
CO2	1	3	2
INTERNAL ATTAINMENT: 2(average of total)			
Final attainment is out of 3 for the course is 2 i.e. 60%			

Such calculations can be done for each course

Attainment of Program outcomes

Programme Outcomes (PO) are the knowledge, skills, and abilities students should possess upon graduation, they are the central organising feature of student learning. Program Outcomes (PO) can only be achieved and demonstrated through the integration of course components and Course Outcomes (CO).

Characteristics of Program Outcome (PO)

To effectively define your PO statement check them whether they satisfy following characters

- Must define the scope and depth of the program
- Should focus on the end-point of the program
- Identify what typically students will know and be able to do on graduation
- Should be measurable, realistic and achievable within the context and timeframe
- Must be realised through component courses over the extent of the program
- They should be demonstrated through course assessment, particularly in final year courses, and especially through capstones.

As per OBE, two methods are used for calculating and obtaining Program Outcomes and they are

- Direct method.
- Indirect method.

For measure PO in direct method a CO/PO matrix is used to measure PO. The CO are linked to the PO using the CO vs PO matrix as stated in Course Syllabus blueprint. When designing the CO, lecturers of each course map their CO to the appropriate PO to ensure that all PO are delivered throughout the study.

Defining CO weightage for a PO in CO/PO matrix, the weightage scale can be of any format (1-10, 1-100) but by using the scale 1-3 helps us to simplify our calculations

Where 1represents Low

2 represents Medium

3 represents High

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	1	–	2	–	–	–	3	–	–	–
CO2	–	–	1	–	–	–	–	–	–	1
CO3	–	3	–	–	–	–	–	2	–	–
CO4	–	–	–	2	–	2	–	–	–	–
CO5	–	2	–	–	–	–	1	–	1	–

Calculating PO attainment for direct method

The PO attainment is calculated by using the predefined CO/PO matrix and the value of Final CO attainment for the subject

The PO attainment is calculated by using the formula

PO attainment = Avg, of CO's of a PO /3 X Final CO attainment for the subject

For Example, if you want to calculate the PO attainment value for PO1 in the below table

PO attainment for PO1 = (Avg. of CO's for PO1 / 3) X 2.97

PO attainment for PO1 = **2.97**

Indirect Method Calculation

This method is purely survey oriented, So the calculations are based on data and surveys collected from the following

- Current Passing out students
- Stakeholders
- Alumni
- Survey from placement officers,

The questions in the survey sheet should represent the PO's All these survey needs to be a quantified one (1, 2, 3) and they must be based on predefined levels like Rubrics defined for direct calculation. Sample rubrics for indirect calculation.

RUBRICS

60% People are giving above 3 – 1 (LOW)

70% People are giving above 3 – 2 (MEDIUM)

80% People are giving above 3 – 3 (HIGH)

These levels of attainment are then listed out according to their category in the below format for calculating the indirect PO attainment

Survey	Indirect PO Attainment														
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Current Passing student	3	2	1	1	2	3	1	3	1	2	2	2	2	2	1
Alumni	3	2	2	1	2	2	2	1	2	2	3	2	3	3	1
Placement Officers	3	2	3	2	2	2	1	1	3	2	2	3	2	1	1
Indirect Program Attainment	3.00	2.00	2.00	1.33	2.00	2.33	1.33	1.67	2.00	2.00	2.33	2.33	2.33	2.00	1.00

The indirect program attainment is calculated by using the formula

Indirect program attainment = Sum of levels of attainment of a PO **/ 3**

For Example, to calculate indirect program attainment for PO1

PO1 attainment = 3+3+3 / 3

PO1 attainment = 3

Similarly PO attainment is measure for all subjects and the cumulative PO is calculated. The results from PO calculation are further used for Graduate Attribute (GA) respective matrices.

Appendix 1: Glossary & Notes

GLOSSARY

Graduate Attributes : The disciplinary expertise or technical knowledge that has traditionally formed the core of most university courses. They are qualities that also prepare graduates as agents for social good in an unknown future.

Learning Outcomes : Specific intentions of a Programme or module, written in clear terms. They describe what a student should know, understand, or be able to do at the end of that Programme or module

Levels of Outcomes :

- **Programme Outcomes**: POs are statements that describe what the students graduating from any of the educational Programmes should be able to do.
- **Programme Specific Outcomes**: PSOs are statements that describe what the graduates of a specific educational Programme should be able to do.
- **Course Outcomes:** COs are statements that describe what students should be able to do at the end of a course

Outcome : An outcome of an educational Programme is what the student should be able to do at the end of a Programme/ course/ instructional unit.

Programme : A range of learning experiences offered to students in a formal manner over a period of one-to-four years leading to certificates/ diplomas/ degrees. Examples: BA (Economics) BSc (Physics). All possible formal degree Programmes are identified by UGC

Course Outcomes (COs) : COs are statements that describe what students should be able to do at the end of a course. They can be 6±2 for courses with 2 to 4 credits, and 8±2 for courses with 5 to 6 credits. (examples are given in the "Notes")

Course : List of the course modules, similar to a table of contents in a book or the outline

Outlines		used for writing papers. The outline defines the scope and content of the course.
Credit	**:**	A credit system is a systematic way of describing an educational programme by attaching credits to its components. University Grants Commission defines one credit as 1 Theory period of one hour per week over a semester 1 Tutorial period of one hour per week over a semester 1 Practical period of two hour per week over a semester
Programme Options	**:**	A range of courses offered to students to choose at various levels leading to degrees/ diplomas/ certificates.
Programme Outcomes	**:**	Programme Outcomes (POs) are what knowledge, skills and attitudes a graduate should have at the time of graduation. While no agency has formally defined the POs of General Higher Education 3-year degree Programmes in India, POs of all professional Programmes in engineering and other areas are identified at national level by the concerned accrediting agency. POs are not specific to a discipline.

NOTES

It is considered necessary to provide some exemplars for the different levels of learning outcomes at higher education level. While no agency has defined the POs of General Higher Education three year programme in India, POs of all professional Programes in engineering and other areas are identified at the national level by the concerned accrediting agency. Given below is set of POs of an engineering Programme identified by National Board of Accreditation (NBA). In respect of PSOs and COs, examples from science and social science disciplines are given. These are not comprehensive or exhaustive. But, they point out the manner in which these outcomes can be stated for any educational Programme/course. In case the HEI has these already stated, they may be submitted; however, if at any of these three levels outcomes are not listed, they may be developed and uploaded in Institutional website.

Reference:

http://www.naac.gov.in/images/docs/Manuals/Affiliated_Constituent%20UG-PG%20Colleges%204feb2020(1).doc, pages 164 -178