Academic Council Meeting No. and Date : 8/ September 04, 2023

Agenda Number : 2 Resolution Number : 34, 35 / 2.11, 2.32

Vidya Prasarak Mandal's

B. N. Bandodkar College of Science (Autonomous), Thane

Syllabus for

Programme : Bachelor of Science

Specific Programme : Human Science

Level 4.5

CHOICE BASED GRADING SYSTEM

[F.Y.B.Sc. Human Science]

Revised under NEP

From academic year 2023 - 2024

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Preamble

- The basic thoughts and understanding in the programme of B.Sc. with Human Science is many or around 60 % students after their graduation leave higher education and opt for jobs. These jobs are in Government offices, Municipal Corporations, private companies or, in schools as teachers. They are absorbed as science graduates. Even when the students opt for management carriers they are considered as science graduates at entry level. Thus the specialization or the major subject does not have relevance unless the students want to pursue the carrier in the field of research or higher education.
- Among all higher studies Masters in management is a most preferred option because of availability of lucrative jobs. Among the specializations in management studies Human Resource Management is one among the preferred choice. When a person works in any office it is needed that the concerned understands the psychology of organization, the co-workers, the officers and also the customers.
- With all these requirements of job market University has decided to introduce the graduation course in Arts and science as B. A. /B. Sc. Human science. In this the topics considered are Origin of Human Science, Evolution of human being, Cultural evolution, Social evolution, Development of communication and language, Anthropology, Family culture, Organization culture, Management techniques and many more. The Bachelor's Degree B.A./B.Sc. Human Sciences is a three year (six semesters) innovative interdisciplinary programme that focuses on understanding the human being holistically from biological, psychological and social perspectives. It helps in comprehending the human being from birth to death with a whole gamut of perspectives from origin, ancient history, its evolution to modern times. It is an amalgamation of various disciplines of sciences namely psychology, sociology, anthropology, paleontology, neuroscience, genetics, home science and other allied spheres of knowledge. A learner with such a vast knowledge and understanding of Human Science will be fit to work in any industry/ Government offices/ Schools or any other place.
- A learner if wish to go for higher education he can opt for Masters in Psychology, Anthropology or Masters in Management.

BOS Chairperson: Prof. (Dr.) Vinda Manjramkar

Eligibility: B.A./B.Sc. in Human Science program is open to candidates who have passed H.S.C Examination in Arts or Science from Board of Maharashtra or its equivalent.

Duration: 3 years (level 4.5)

Mode of Conduct: Offline

Laboratory Practicals / Offline lectures / online lectures

Total Credits for the Program: 22 [Starting year of NEP implementation: 2023- 24]

Eligibility For certificate if exit at level 4.5

Name of the Degree Program: B.Sc HUMAN SCIENCE

Discipline/Subject: Human Science

Specific Programme: F.Y.B.Sc. Subject (Major) Credits: 06

Program Specific Outcome: By the end of the program the students will be able to learn psychology, sociology, anthropology, paleontology, neuroscience, genetics, home science, law and other allied spheres of knowledge.

VPM's B.N. Bandodkar College of Science (Autonomous), Thane

Curriculum Structure for the Undergraduate Degree Program F.Y.B.Sc Human Science

NEP IMPLEMENTATION ON 2023-24

Structure of Programme

Semester I			
Course Code	**Course Title (Major) HUMANITIES of human science**	**No. of lectures in hrs**	**Credits**
23BUHS1T1	**Society and Languages**	**30**	**02**
Unit 1	Origin of Communication, Language of Words	15	
Unit 2	Institution of Society, Marriage, Family and Religion	15	
23BUHS1T2	**Human Diversity & Ecosystems**	**30**	**02**
Unit 1	Geographical Distribution of Races	15	
Unit 2	Nutrition & Lifestyle of races	15	
23BUHS1P1	**PRACTICALS**	**60**	**02**
	Total	**120**	**06**
Course Code	**Semester 1 Course Title (Minor) LIFE SCIENCES**	**No. of lectures in hrs**	**Credits**
23BUHS1T3	**Biodiversity**	**30**	**02**
Unit 1	Kingdom Plantae	15	
Unit 2	Kingdom Animalia	15	
23BUHS1T4	**Human Anatomy and Physiology**	**30**	**02**
Unit 1	Anatomy & Skeleton System	15	
Unit 2	Physiology	15	
23BUHS1P2	**PRACTICALS**	**60**	**02**
	Total	**120**	**06**
Course Code	**Semester 1 Course Title (Generic Elective Subjective)**	**No. of lectures in hrs**	**Credits**
23BUHS1T5	**Evolution**	**30**	**02**
Unit 1	Origin of Life	15	
Unit 2	Paleoanthropology	15	
	Total	30	**02**

Course Code	Semester 1-Optional Elective Course Title	No. of lectures in hrs	Credits
23BUID1T6	**(ID For HS)Soft skills and personality development-I**	**30**	**02**
Unit 1	Introduction to soft skills and communication skills	10	
Unit 2	Business Communication	10	
Unit 3	Barriers to Communication And improving communication skill.	10	
	Total	30	**02**
23BU1VSC7	**Semester 1 Vocational Education Skill Enhancement Course (VESEC) Course Title**	**No. of lectures in hrs**	**Credits**
	Analysis of Environmental Data and Ecosystem	15	01
	PRACTICALS	30	01
	Total	**45**	**02**
23BUEN1T8	**Semester 1 Ability Enhancement Course (AEC) Course Title**	**No. of lectures in hrs**	**Credits**
	Basic English Learning course	**30**	**02**
	Total	**30**	**02**
23BUIK1T9	**Semester 1- Indian Knowledge System (IKS) Course Title**	**No. of lectures in hrs**	**Credits**
		30	**02**
Unit 1	History of Science and Theories of Human Origin	15	
Unit 2	Social Evolution, Social Animal, Society Formation	15	
	Total	**30**	**02**

Semester II			
Course Code	**Course Title (Major) HUMANITIES of human science**	**No. of lectures in hrs.**	**Credits**
23BUHS2T1	**Fundamental of Psychology**	**30**	**02**
Unit 1	Perspectives in Psychology	15	
Unit 2	Instinct and Innate Behavior	15	
23BUHS2T2	**Cognitive development**	**30**	**02**
Unit 1	Cognitive processes	15	
Unit 2	Theoretical Perspectives on Life span Development	15	
23BUHS2P1	**PRACTICALS**	**60**	**02**
	Total	**120**	**06**

Course Code	**Semester II Course Title (Minor) LIFE SCIENCES For Human Science**	**No. of lectures in hrs.**	**Credits**
23BUHS2T3	**Neurosciences**	**30**	**02**
Unit 1	Peripheral and Autonomous Nervous System	15	
Unit 2	Neurotransmitters and their role, Nerve impulse and transmission	15	
23BUHS2T4	**Genetics**	**30**	**02**
Unit 1	Mendelian Inheritance, Genetic material and Chromosomal theory	15	
Unit 2	Sex determination, Chromosomal anomalies	15	
23BUHS2P2	**PRACTICALS**	**60**	**02**
	Total	**120**	**06**

Course Code 23BUHS2T5	**Course Title (Generic Elective Subjective) Evolution of brain & behaviour**	**No. of lectures in hrs. 30**	**Credits 02**
Unit 1	Evolution of Skull and Human Brain	15	
Unit 2	Behavioral Ecology	15	
	Total	**30**	**02**
23BUID2T6	**OPTIONAL ELECTIVE (ID FOR H.S) Soft Skills and Personality Development - II**	**No. of lectures in hrs. 30**	**Credits 02**
Unit 1	Individual Interaction and skills	10	
Unit 2	Leadership Skills	10	
Unit 3	Negotiation Skills (To be Taught through Role Plays and Cases)	10	
	Total	**30**	**02**

23BU2VSC7	Course Title VESEC (Vocational Education Skill Enhancement Course)	No. of lectures in hrs	Credits
	Human Machine interface (HMI) and Genetic counseling	15	1
	PRACTICALS	30	1
	Total	**45**	**2**
23BUEN2T8	**Course Title (AEC)**	**No. of lectures in hrs**	**Credits**
	Scientific English Writing	30	02
	Total	**30**	**02**
23BUIK2T9	**Indian Knowledge System (IKS)**	**No. of lectures in hrs.**	**Credits**
Unit 1	Food habits of Ancient Indian civilization	15	
Unit 2	Ayurveda	15	
	Total	**30**	**02**

Semester I

COURSE CODE	Semester I - Course Title MAJOR HUMANITIES in Human sciences	Credits 04	No. of lectures in hrs

Program specific outcomes:

- Through this course learner will develop an insight about the development of human communications.
- Learners will get a combined knowledge on important factor that associated with languages.
- Students will understand the importance and significant aspect of society, marriage and family.

Course Outcomes:

- To understand the origin and types of communication and language and to provide training in effective communication.
- To trace the origin and evolution of society & social interactions.
- To understand emergence, values and perspectives of different religions, along with importance of social institutions.
- To explain the aspects of human diversity in relation to geographical differences and Environmental impacts.

23BUHS1T1	SOCIETY AND LANGUAGES	Credits 02	No. of lectures in hrs
Unit I :	**Origin of Communication, language of words:** • Understanding human communication • What is communication? Its Process, effectiveness and barriers • Brief history, evolution and the development of communication • Evolution of languages • Development of Speech- From Non-verbal to verbal, Oral communication • Non-verbal communication: Body language, five senses of communication, gestures and relation with sound • Mass Communication		**15**
Unit II :	**Institution of Society, Marriage, Family and Religion :** Approaches: Social Cohesion and Social identification • Types of groups: Primary and Secondary • Development, Dispersal and transformation of groups **Relationship in the society** • Friendship nature and functions • Social Institutions: Marriage and Family (functions, types and changes) • Kinship (functions & basic terminology) **Religion** • Evolution of Religion and introduction to various religions • Development of various religious practices • Concept of Universal Religion		**15**

23BUHS1T2	HUMAN DIVERSITY	Credits02	No. of lectures in hrs
Unit I :	**Geographical Distribution of Races:** • Geographical distribution of Races • Impact of Climatic and Environmental conditions then existing on races		**15**
Unit II :	**Nutrition and Life style of different Races:** • Type of food available • Types of tools used, inventions like fire • Development from Hunters to Food gatherers and Farmers • Traditional costumes • Traditional arts and crafts		**15**

23BUHS1P1	Course Title (MAJOR)	Credits 02	No. of Practical in hrs. 60
Practical 1	Traditional costumes of India		
Practical 2	Traditional costumes of World		
Practical 3	Traditional Art and craft		
Practical 4	Traditional food of India		
Practical 5	Traditional food of World		
Practical 6	Study of different Geographical races of Human		
Practical 7	Family communication related case studies		

COURSE CODE	Semester I - Course Title MINOR LIFE SCIENCE	Credits 04	No. of lectures in hrs

Program Specific outcome:

- Through this course students will able to classify different organism according to their physical features and their hierarchy.
- The learner will get knowledge on anatomy and physiological mechanism of different organs.

Course Outcomes:

- To appreciate biodiversity in plants and animal kingdoms at the time of Human evolution.
- To study the insight of the complex nature of human body with understanding of its structure & functions.
- To understand the structural framework of human body.

23BUHS1T3	BIODIVERSITY AND ECOSYSTEM	Credits 02	No. of lectures in hrs
Unit I :	**Kingdom Plantae :** Definitions, Broader classification with examples of each group Cryptogams • Thallophyta • Bryophyta • Pteridophyta Phanerogams • Gymnosperms • Angiosperms		**15**
Unit II :	**Kingdom Animalia:** Definition, Broader classification with examples of each group Phylum – Porifera Phylum – Coelenterata (Cnidaria) Phylum – Platyhelminthes Phylum – Aschelminthes (Nemotoda) Phylum – Annelida Phylum – Arthropoda Phylum – Mollusca Phylum – Echinodermata Phylum – Chordata		**15**

23BUHS1T4	HUMAN ANATOMY AND PHYSIOLOGY	Credits 02	No. of lectures in hrs
Unit I :	**Anatomy and Skeletal system:** • Cell, tissues and body fluid, • Structure of Human organs Heart, Lungs, Kidney, Liver, Endocrine glands, Sense organs • Axial skeleton and appendicular skeleton.		
Unit II :	**Physiology:** • Physiology of Nutrition • Physiology of Respiration • Physiology of Circulation • Physiology of Excretion • Reproduction and Immunology • Movement: structure of muscle, Physiology of muscle contraction		

23BUHS1P2	Semester I Course Title (MINOR)	Credits 02	No. of practical in hrs. 60
Practical 1	Qualitative study of Amylase Activity		
Practical 2	Qualitative Test for carbohydrates, lipids, proteins		
Practical 3	Calorimetric estimation of proteins, in hens egg Folin-Lowry method		
Practical 4	Detection of adulterants in milk (Starch and Urea)		
Practical 5	Study of muscle fiber from chicken		
Practical 6	Urine analysis for normal and abnormal constituents (Normal; Urea , Uric acid, Abnormal; Glucose, Albumin, Bile		
Practical 7	Detection ammonia from fish / uric acid from bird excreta		

Course Code 23BUHS1T5	Semester I Course Title Generic Elective Subjective	Credits 02	No. of lectures in hrs. 30

Program Specific Outcome:

- Students will understand the importance of history and different historical events which led to discoveries and inventions.
- Learners will get combined knowledge of evolution and evolved organism.

Course Outcomes:

- To study the human evolution & evolutionary theories.
- To study basic concepts of paleontology.

23BUHS1T5	Evolution	Pedagogy	Assessment (CIA)	No. of lectures in hrs
Unit I :	**Origin of Life :** •Mythological approach: Ancient and medieval beliefs (Theories of Cosmozoic, big bang, spontaneous generation, Biogenesis) •Modern hypotheses of origin of life (Biological evolution, chemical and biochemical origin of life) •Biological evolution. •Origin of Human Being, Theories of Human evolution and the geographical impact on the same	With the help of documentaries related to Origin of life can be used to understand the different theories of origin of life.	Internal assessment- Unit test (20 marks) External assessment (60 marks) Presentation (20 marks)	**15**
Unit II :	**Paleoanthropology** Fossilization: Processes ,types, Tracing and records •Biostratigraphy: Concept of stage and zone Micropaleontology: Microfossils ,calcareous, phosphatic, siliceous and organic microfossils •Stromatolites: Morphology, fossil records and modern occurrence •Homologous and Analogous organ, Vestigeal organs •Paleoecology and Paleobotany	By showing different preserved specimens and by visiting museum and anthropological study centers	Internal assessment- Unit test (20 marks) External assessment (60 marks) Presentation (20 marks)	**15**

Course Code **23BUID1T6**	**Semester I Course Title** **Soft Skills and Personality Development - I**	**Credits** **2**	**No. of lectures in hrs** **30**
Unit I:	• Introduction to soft skills and communication skills • Introduction to soft skills, Need for Communication, Process of Communication • Written and Verbal Communication, Visual communication, Signs, Signals and Symbols, Silence as a Mode of Communication		

	• Inter-cultural, Intra-cultural, Cross-cultural and International communication • Communications skills, Communication through Questionnaires, Business Letter Writing, Electronic Communication
Unit II:	• Business Communication • Business Cases and Presentations, Letters within the Organizations, Letters from Top Management, Circulars and Memos • Business Presentations to Customers and other stakeholders, Presenting a Positive Image through Verbal and Non-verbal Cues, Preparing and Delivering the Presentations, Use of Audio-visual Aids • Report Writing • Writing of CV/ Resume
Unit III:	Barriers to Communication and Improving Communication Skills • Preparation of Promotional Material • Non-verbal communication • Body language • Postures and gestures • Value of time; Time Management • Organizational body language • Listening Skills**,** Importance of Listening • Emotional Intelligence

Course Code 23BU1VSC7 (Theory)	**Semester I Course Title VESEC (Vocational Education Skill Enhancement Course)**	**Credits 01**	**No. of lectures in hrs 15**

Program specific outcome:

- Students will able to solve Biostatistical problems.
- Learners will be able to identify different organisms belonging to different ecosystem.

Course Outcomes:

- To study basic applications of statistics by using environmental data.
- To understand the details of abiotic and biotic factors of community.
- To study the plant- animal interactions within the ecosystem.
- To understand the dynamics of ecosystems.

23BU1VSC7	Semester I (VESEC)	Pedagogy	Assessment (CIA)	No. of lectures in hrs
Unit I	**Analysis of Environmental Data** Conceptual Foundations, Data Exploration , Screening & Adjustments •Purpose of data exploration, screening & adjustments •Common parameters and statistics i. Parameters and statistic ii. The "normal" distribution iii.Measures of central tendency, spread, non-normality •Single variable plots i. Empirical distribution function and cumulative distribution functions ii.Histogram iii.Box-and-whisker plot iv.Extreme values ("outliers") •Measures of association •Plots of association •Scatter plot, Co-plot.	Data collection by using sampling techniques and its analysis by using statistical methods, based on environmental factors, flora and fauna	Internal assessment- Unit test (20 marks) External assessment (60 marks) Presentation (20 marks)	**15**
	Ecosystem Types of Ecosystems Aquatic (Marine, estuarine, fresh water) Terrestrial, Desertine & Grassland •Abiotic factors •Biomass, Energy flow, Food Chain, Energy Pyramids	By conducting field visit & collection of different specimens.	Internal assessment- Unit test (20 marks) External assessment (60 marks) Presentation (20 marks)	

23BU1VSC7 (Practical)	Semester I Course Title Vocational Education Skill Enhancement Course (VESEC)	Credits 01	No. of practical in hrs 30
Practical 1	Data collection by using sampling techniques and its analysis by using statistical methods Based on environmental factors, flora and fauna		
Practical 2	Problems based upon Z- test		

Practical 3	Problem based upon t-test
Practical 4	Problems based upon chi square test
Practical 5	Study of aquatic ecosystems
Practical 6	Study of terrestrial ecosystems
Practical 7	Field visit related biodiversity & ecosystem

Course Code 23BUEN1T8	**Semester I Course Title Basic English Learning course**	**Credits 02**	**No. of lectures in hrs 30**
Unit I :	Sentence, kinds of Sentence Parts of speech Infinitive and participles Commands, requests and questions Punctuation: full stop, comma, colon, semicolon, dash, ellipsis, exclamation and question mark		
Unit II :	Verbs, kinds of verbs Articles, prepositions, conjunctions Tenses, kinds of tenses Using of correct verb forms		
Unit III :	Transformation Antonyms, Synonyms Homophones, Homonyms Collocation Active and passive voices Degree of comparison		
Tutorial activities	Reading Vocabulary learning Conversation Essay writing Short speeches Dialogue writing Mock interview		

23BUIK1T9	**Semester I Course title** **Indian Knowledge System**	**Pedagogy**	**Assessment (CIA)**	**No. of lectures in hrs**
Unit I :	**History of Science and Theories of Human** •Historiography, Milestones in the development of Science,	Books of ancient time and historical short films or movies are useful to teach	Internal assessment-Unit test (20 marks)	**15**

	definition and relevance •Ancient Indian Applied Science •Science during the Medieval India: Maturing in Science and Alchemy •History of Modern Life Sciences	history and can be referred	External assessment (60 marks) Presentation (20 marks)	
Unit II:	**Social evolution, Social Animal, Society Formation** •Early stone-age: A brief survey of Paleolithic, Mesolithic and Neolithic Chalcolithic culture •Early Iron-age culture: Megalithic culture •Brief history of world civilizations: Ancient, medieval and modern periods	Taking references from the books related to sociology and Power point presentation	Internal assessment- Unit test (20 marks) External assessment (60 marks) Presentation (20 marks)	**15**

References

Books and References:					
Sr. No.	**Title**	**Author/s**	**Publisher**	**Edition**	**Year**
1.	Animal Diversity:	B. N. Pandey;	Tata McGraw-Hill Education	(Volume - 1)	2012
2.	Concept of ecology (environmental biology)	N.Arumugam	saras Publication	-	-
3.	Environmental studies A textbook for Undergraduates	Dr. K. Mukkanti	S. Chand	First	2010
4.	A new course in Botany for F. Y. B. Sc. Paper I and S. Y. B. Sc. Paper I	Patel, Golatkar, Sarangdhar	Sheth Publication	-	2014
5.	A new course in Zoology for F. Y. B. Sc. Paper I and S. Y. B. Sc. Paper I	Yeragi, Bhattacharya	Sheth Publication	-	2014

Books and References:					
Sr. No.	**Title**	**Author/s**	**Publisher**	**Edition**	**Year**
1.	Human physiology Volume I and II	C.C. Chaterjee.	CBS Publisher	10th edition	2006
2.	Textbook of Anatomy and functional physiology by;. ;	John Wiley & Sons Inc	Tortora	13th edition	2011
3.	Dorland's Medical Dictionary;;	Dorland	Sunders	32 nd edition	2011

Sr. No.	Title	Author/s	Publisher	Edition	Year
Books and References:					
1.	Social Anthropology.New Delhi: Universal Book Stall,	Evans-Prichard, E.E.	Free Press Publications	1st	1951
2.	The Tapestry of Culture., New York: Random House.	Rosman & Rubel	Rowman & littlefield Publishers	9th edition	2009
3.	Sociology	Schaeffer and Lamm	McGraw Hill	6th	1999

Semester II

Course Code	Semester II Course Title MAJOR HUMANITIES in Human sciences	Credits 04	No. of lectures in hrs

Program Specific Outcome:

- Through this course students will get an in-depth understanding of evolution of psychology
- To facilitates comprehension of how brain is related to mental states and cognitive processes
- Students will able to draw comparison between various theoretical perspectives on understanding Personality, Behavior, and Developmental Psychology.

Course Outcomes:

- To study the fundamentals of psychology and understanding classical perspectives of psychology
- To understand scientific methods to study psychology
- To understand different models of learning and related concept
- To critically analyze the cognitive functioning of mind
- To understand and apply different concept of memory – attending, storing, and retrieving.

23BUHS2T1	FUNDAMENTALS OF PSYCHOLOGY	Credits 02	No. of lectures in hrs
Unit I :	**Perspective in Psychology** • What is Psychology? Brief history of Psychology • Contemporary Psychology: The Biopsychosocial approach and Current Perspectives: • i. Neuroscience • ii. Evolutionary Behavior Genetics • iii. Psychodynamic: Behavioral, Cognitive, Social-cultural • Research Methods in Psychology • i. Descriptive • ii .Correlation • iii .Experimental		**15**
Unit II :	**Instinct and Innate Behavior** • Instinct: Concepts of Instinct: Fixed Action Pattern, examples of Fixed Action Pattern, Significance of instincts. • Innate Behavior: Concepts of innate behavior, Types of innate behavior exhibited by plants and animals (orientation, irritability, motivation, tropism, taxes, nest building etc.), Significance of innate behavior. • Learning and learning theories: What is learning?		**15**

	• Classical Conditioning: Learning by association, Pavlov's Experiments: the processes of acquisition, extinction, spontaneous recovery, generalization and discrimination, Applications of Classical Conditioning. • Operant conditioning: Learning from the consequences of your behavior, Skinner's experiments: shaping behavior, types of reinforcers, reinforcement schedules, punishment. • Applications of Operant Conditioning, Contrasting Classical and Operant condition. • Biology, Cognition and Learning: Biological Constraints on Conditioning • Limits on Classical Conditioning, Operant Conditioning, Cognitive processes and classical conditioning, Cognitive processes and operant conditioning		
23BUHS2T2	**COGNITIVE DEVELOPMENT**	**Credits 02**	**No. of lectures in hrs**
Unit I :	Cognitive processes **1.Consciousness and Attention** • The Biology of Consciousness, cognitive neuroscience • Dual Processing: The Two-Track Mind • Selective Attention: selective attention and accidents, selective inattention (inattentional blindness and change blindness) **2.Memory** • What is memory? Memory models • Building memories: Encoding and Automatic processing, Encoding and effortful processing • Memory Storage: Capacity and Location of Long Term Memories in the Brain: Explicit-Memory System and Implicit- Memory System • How emotions affect memory processing: the amygdala emotions and memory • How changes at the synapse level affect memory processing **3.Retrieval: getting information out** • Measures of retention • Retrieval cues • Forgetting: forgetting and the two-track mind, encoding failure, storage decay, retrieval failure: interference and motivated forgetting • Memory construction errors: misinformation and imagination effects, source amnesia, discerning true and false memories, children's eyewitness recall, repressed or constructed memories of abuse		**15**
Unit II :	Theoretical Perspectives on Life span Development		**15**

	•Psychoanalytic: Sigmund Freud: Psychosexual Stages of Development, Erik Erikson: Psychosocial Stages of Development. •Humanistic: Abraham Maslow and Carl Rogers. •Cognitive: Jean Piaget: Cognitive Stages in Development, Albert Bandura: Cognitive Learning. •Bio ecological: Urie Bronfenbrenner. •Sociocultural: Lev Vygotsky 2.Attachment theory: John Bowlby, Mary Ainsworth; Attachment theory and close relationships: Cindy Hazan and Philip Shaver 3.Moral development: Jean Piaget, Lawrence Kohlberg, Carol Gilligan	

23BUHS2P1	**Semester II Course Title (Major)**	**Credits 02**	**No. of Practical in hrs 60**
Practical 1	To study the IQ by formula(project)		
Practical 2	Nature of learning curves		
Practical 3	Serial position effect		
Practical 4	Cephalic index		
Practical 5	Problem Solving		
Practical 6	Milestones of child's development		
Practical 7	Interview of psychologists working in different fields		

Course Code	**Semester II Course Title MINOR LIFE SCIENCE**	**Credits 04**	**No. of lectures in hrs**

Program Specific Outcome:

- Learners will get the knowledge of developmental neurosciences
- Students will able to know the importance of heredity and variations

Course Outcomes:

- To comprehend the structure and functions of the nervous system
- To study complex structure of nerves and their role
- To understand the basic concepts of genetics, inheritance, sex determination and Counseling for inherent disorders and infertilityin

23BUHS2T3	**NEUROSCIENCES**	**Credits 02**	**No. of lectures in hrs 30**
Unit I :	**Peripheral and Autonomous Nervous System** • T. S. of Spinal Cord • Reflex arc		**15**

	• Reflex action, Types of Reflex actions • Sympathetic nervous system • Parasympathetic nervous system		
Unit II :	**Neurotransmitters and their role, Nerve impulse and transmission** Structure of neuron , mechanism of nerve impulse • Nerve transmission • Synapse • Neurotransmitters: Acetylcholine, Amino acids; (Glutamate Aspartate, GABA, Glycine) Purines (ATP) • Biogenic amines: Dopamine, Norepinephrine, Epinephrine, Serotonin, Histamine • Science of pain		**15**
23BUHS2T4	**GENETICS**	**Credits 02**	**No. of lectures in hrs. 30**
Unit I :	**Mendelian Inheritance, Genetic material and Chromosomal theory** •Mendelian inheritance: Monohybrid and diybrid ratio , dominance, co-dominance, autosomal(recessive and dominant inheritance), X-linked recessive and dominant inheritance , Y linked and Z linked •Genetic material: Nucleic acids structure of DNA &RNA •Chromosomal theory of inheritance		**15**
Unit II :	Sex determination, Chromosomal anomalies Types of Sex determination •Chromosomal types of sex determination: Haploid, XX-XO, XX-XY, and ZZ- ZW. •Chromosomal anomalies : Autosomal and sex chromosomal		**15**
23BUHS2P2	**Semester II Course Title (Minor)**	**Credits 02**	**No. of lectures in hrs. 60**
Practical 1	To study Brain of Human, Structure of Neuron, T.S. of Spinal cord, Reflex arc, Sympathetic and Parasympathetic nervous system.		
Practical 2	Study of Karyotypes		
Practical 3	Study of Barr Bodies		
Practical 4	RNA Estimation		
Practical 5	DNA estimation		
Practical 6	Haemoglobinometer- operation and its use		
Practical 7	To estimate hemoglobin by Sahali's haemometer		

Course Code	Semester II Course Title GENERIC ELECTIVE SUBJECTIVE	Credits 02	No. of lectures in hrs

Program Specific Outcome:

- Students will understand that brain size cannot decide the intelligence
- Leaners will get the knowledge of the variation in behavior of organism

Course Outcomes:

- To learn the development of human brain throughout the evolution
- To understand of human intelligence and it's evolutionary basis
- To learn the evolution from a single ancestor of a number of descendants with adaptations
- To perceive the various aspects of primate behavior

23BUHS2T5	Evolution of brain & behavior	Pedagogy	Assessment (CIA)	No. of lectures in hrs
Unit I :	Evolution of Skull and Human Brain • Evolution of brain in invertebrates • Evolution of brain in veterbrates • Evolution of skull in vetebrates • Evolutionary development related to human skull and brain • Intelligence dependent on brain size • Evolution of human intelligence (Hominidae, Homininae,Homo sapiens	By using different model of skull and brain of different organism concepts can be cleared	Internal assessment- Unit test (20 marks) External assessment (60 marks) Presentation (20 marks)	**15**
Unit II :	**Behavioral Ecology** Monotremes Metatheria Eutheria Primate Behavioral Ecology **Adaptations** Adaptive radiations in mammals, Aquatic, Arboreal, Terrestrial, Desertine	With the help of different types of experiments and by observing behavioral patterns of animals	Internal assessment- Unit test (20 marks) External assessment (60 marks) Presentation (20 marks)	**15**

Course Code 23BUID2T6	Semester II Course Title Soft Skills and Personality Development - II	Credits 2	No. of lectures in hrs 30
Unit I :	**Individual Interaction and skills** • Basic Interaction Skills –Within family, Society Personal and interpersonal intrapersonal skills • 'The value of 'Empathy' • Types of skills; conceptual, supervisory, technical, managerial and decision making skills. • Problem Solving, Lateral Thinking • Self Awareness and Self Esteem • Group Influence on Interaction Skills • Group Discussions as an activity • Human relations examples through role – play and cases, Group Discussion		
Unit II :	**Leadership Skills** • Working individually and in a team • Leadership skills, Principles of Leadership, Leadership Traits • Leadership Lesson through Literature • Team work and Team building • Interpersonal skills – Conversation, Feedback, Feed forward, Delegation, Humor, Trust, Expectations, Values, Status • Compatibility and their role in building team – work • Conflict Management–Types of conflicts, how to cope with them • Concept of OLQs • Role of Adventure activities in development of leadership qualities • Adventure Activities/ Field activity • Case Studies, Small cases including role – plays will be used as teaching methodology		
Unit III :	**Negotiation Skills (To be Taught through Role Plays and Cases)** • Types of Negotiation • Strategies of Negotiation • Selling skills – Selling to customers Selling to Superiors • Selling to peer groups, team mates & subordinates Conceptual selling, Strategic selling, Selling skills – Body language • Role-Plays and case studies will be used as teaching methodology		
Course Code 23BU2VSC7	**Course Title Vocational Education Skill Enhancement Course (VESEC)**	**Credits 2**	**No. of lectures in hrs**
Program Specific outcome: • Learners will understand the future of technology in upcoming era • Students will get knowledge to identify hereditary disorders			

Course Outcomes:

- To understand HMI
- To gain knowledge about various inherent disorders
- To study the advances in the science for methods of sex determination and to treat infertility

23BU2VSC7 (Theory)	**VOCATIONAL EDUCATION SKILL ENHANCEMENT COURSE**	**Pedagogy**	**Assessment (CIA)**	**No. of lectures in hrs**
Unit I	**Human Machine interface (HMI)** Human Machine Interface (HMI) •Human Computer Interaction (HCI): What is HCI? Disciplines contributing to HCI, General principles of HCI design, Ergonomic aspects of HCI, New Areas of HCI •HMI related risks: workers health and safety •Brain-Computer Interface (BCI): Cognitive based neural prosthetics 2.Communication technology and its impact •History and Evolution of the Digital Age and the Information Revolution. •Computer-Mediated Communication, Internet, One's place in Cyberspace? (Social networking), The Virtual Self. Gender, Sexuality, and Relationships on the Net. •Community, Culture,	In depth case studies written by researcher's and designers Video Interviews with wide range of experts from the fields including professional interaction designers and university professors , blogs, online tutorials and YouTube Videos	Inte**(VESEC)** rnal assessment- Unit test (20 marks) External assessment (60 marks) Presentation (20 marks)	**15**

	and Communication in Cyberspace. •Virtual Communities, Communication, and Culture in Virtual Communities. •Social Norms, Crime, and Punishment on the Electronic Frontier, Privacy and Surveillance in the Digital Age. •Producing, Regulating, and Protecting Information in Cyberspace, The Rest of the World and the Net. •Our future in the Technology era.			
Unit II	**Genetic counseling** Common hereditary disorders in a family •Disorder from consanguineous marriage •Test for sex determination , Amniocentesis •IVF technique	By referring case studies & short films. With the help of presentation.	Internal assessment- Unit test (20 marks) External assessment (60 marks) Presentation (20 marks)	**15**

23BU2VSC7 (Practical)	**PRACTICAL FOR (VESEC) Vocational Education Skill Enhancement Course (VESEC)**	**Credits 01**	**No. of lectures in hrs. 30**
Practical 1	Study karyotypes Normal (male and female)		
Practical 2	Autosomal chromosomal anomalies; Downs syndrome, Edwards, syndrome, Patuas syndrome, cri du chat syndrome		
Practical 3	Sex chromosomal anomalies: Turner's syndrome, Klinefelter's syndrome.		
Practical 4	Pedigree chart analysis		
Practical 5	HMI related practical		
Practical 6	HMI related practical		
Practical 7	HMI related practical		

Course Code 23BUEN2T8	**Semester II Course Title Scientific English Writing course**	**Credits 02**	**No. of lectures**

			30
	Course outcome: • Acquire basic information of scientific writing. • Develop ability to interpret data, express it as a scientific report and use appropriate ICT tools for the same.		
Unit I: Scientific writing	**1.1 Types of research articles: 8L** 1. Review article 2. Original research article, 3. Book chapter 4. Book review5. Conference abstract 6. Short communication/note 7. Case study **1.2Organization of original research article:** Abstract, Introduction, Material and Methods, Results, Discussion and Conclusion.3L **1.3 Importance of tables, figures and schematics in research article 1L** **1.4 Review of Litearature.2L** **1.5 Bibliography and different citation formats. 1L** **1.6. Importance of statistics in research.1L**		
Unit II : Interpretation, Report writing and use of IT in research	**2.1 Interpretation:** Meaning of Interpretation, Why Interpretation? Technique of Interpretation, Precautions in interpretation. **2.2 Report writing**: Different steps in writing report, Layout of research report, Types of reports, Plagiarism, Poster & Oral Presentation. **2.3 Use of ICT in research:** List of software available for Pre-data, data and post data analysis. **2.4 Demonstration of Use of websites and software useful in Research**: Google scholar, Shodhganga, Mendeley, NDLI, JSTOR, working with Microsoft excel, introduction to SPSS, use of software for plagiarism check		

23BUIK2T9	**Semester II Course title** **INDIAN KNOWLEDGE SYSTEM**	**Pedagogy**	**Assessment (CIA)**	**No. of lectures in hrs**
Unit I :	**Food habits of Ancient Indian Civilization** • Ancient Indian food • History of Indian food culture • Ancient Indian healthy food • Food habits in ancient India before the arrival of Aryans • Comparitive study of food in Vedic, Maurya & Gupta period	By making different food menus and understanding their nutritional value and availability in different region of India	Internal assessment-Unit test (20 marks) External assessment (60 marks) Presentation (20 marks)	**15**

Unit II:	**Ayurveda** • History of Ayurveda • Ayurvedic Pharmaceutics • Ayurvedic Dietetics • Ayurvedic cosmetology	Collection of different plants specimen and analyzing them. It helps to understand their medicinal value.	Internal assessment- Unit test (20 marks) External assessment (60 marks) Presentation (20 marks)	**15**

Reference

Books and References:				
Title	**Author/s**	**Publisher**	**Edition**	**Year**
Introduction to Psychology: Gateways to Mind and Behaviour	Coon, D., & Mitterer, J. O. Wadsworth/Thomson	Learning Publications	11th	2012
Experience Psychology.	King, L.A.	New York: McGraw Hill publications.	2nd	2013
Cognitive Psychology	Kathleen M. Galotti	SAGE	5th	2014
Psychology. (Indian sub-continent adaptation).	S. K. & Meyer, G. E.	Dorling Kindersley (India) pvt ltd..	-	2008
Understanding Psychology..	Feldman, R.S.	New York: McGraw Hill publications	11th	2013

Books and References:					
Sr. No.	**Title**	**Author/s**	**Publisher**	**Edition**	**Year**
1.	Textbook of Anatomy and functional physiology by	John Wiley & Sons Inc	Tortora	13th edition	2011
2.	Biology	Campbell, N.A. and Reece, J. B	Pearson Benjamin	8th	2008

Books and References:					
Sr. No.	**Title**	**Author/s**	**Publisher**	**Edition**	**Year**
1.	Introduction to Psychology: Gateways to Mind and Behaviour	Coon, D., & Mitterer, J. O. Wadsworth/Thomson	Learning Publications	11th	2012
2.	An introduction to behavioral ecology	John Krebs, Baron Krebs	-	-	-
3.	Development across the lifespan	Robert feldman	Pearson	7th	2015

Books and References:					
Sr. No.	**Title**	**Author/s**	**Publisher**	**Edition**	**Year**
1.	Cell Biology Genetics Molecular Biology Evolution & Ecology	Agarwal V. K. and Varma P.S.	S. Chand	1st	2004
2.	Genetics: A Molecular Approach:,	Russel P.; Benjamin/Cummings	Pearson	3rd	2013
3.	Cytology, Genetics and Molecular Genetics	B. N. Pandey	Tata McGraw-Hill Education Private Limited	(Volume-2)	2012

Books and References:					
Sr. No.	**Title**	**Author/s**	**Publisher**	**Edition**	**Year**
1.	Nutrition Science	B. Srilakshmi	New age international	6th	2017
2.	Food Science	B. Srilakshmi	New age international	2nd	2007
3.	Dietetics	B. Srilakshmi	New age international	3rd	2013

Books and References: For IKS					
Sr. No.	Title	**Author/s**	**Publisher**	**Edition**	**Year**
1.	Feasts and Fasts: A History of Food in India	Colleen Taylor Sen	Reaktion Books	-	2015
2.	Indian Food : A historical campanion	K.T. Acharya	Oxford		1998

3.	Ayurveda-Prakash	Madhav Upadhyay	Chaukhambha Bharati Academy		2016
4.	Drug & cosmetic act- 1940 & rules 1945				
5.	The Theory And Practice Of Industrial Pharmacy	Lachman Liebermans	CBS		2020
6.	Indian Pharmacopoeia- Government of India				

Evaluation Scheme

Internal Examination: Based on Unit 1 / Unit 2 / Unit 3
Duration: 1 Hour **Total Marks: 20**

	Answer the following	**20**
Q. 1	**Objectives**	**10**
Q. 2	**Subjectives**	**10**

Theory Examination: Suggested Format of Question paper (For Major & Minor- each with I & II papers)
Duration: 1 Hour **Total Marks: 30**

- **All questions are compulsory**

Q. 1	Answer ***any two*** of the following		**10**
	a	Based on Unit I	
	b	Based on Unit I	
	c	Based on Unit I	
	d	Based on Unit I	
Q. 2	Answer ***any two*** of the following		**10**
	a	Based on Unit II	
	b	Based on Unit II	
	c	Based on Unit II	
	d	Based on Unit II	

Q. 3	Answer ***any two*** of the following		**10**
	a	Based on Unit I and II	
	b	Based on Unit I and II	
	c	Based on Unit I and II	
	d	Based on Unit I and II	

Note: Exam pattern can be synchronized with other department

Practical Examination

Semester ____ Practical Examination "Month & Year "

Paper Code :- _____

Duration: - 02.00 hrs. **Total Marks**: - 50

Q. No	**Question's**	**Marks**
Q. 1.		
Q. 2.		
Q. 3.		
Q. 4.		
Q. 5.		

Marks Distribution and Passing Criterion for Each Semester

Theory					**Practical**		
Course Code	Internal	Min marks for passing	Theory Examination	Min marks for passing	Course Code	Practical Examination	Min marks for passing

Pedagogy for student engagement is predominantly lectures. However, other pedagogies enhancing better student engagement to be recommended for each course. The list includes active learning/ course projects/ problem or project based learning/ case studies/self-study like seminar, term paper or MOOC

$ Every course needs to include assessment for higher order thinking skills (Applying/ Analyzing/ Evaluating/ Creating). However, this column may contain alternate assessment methods that help formative assessment (i.e. assessment for learning)

Course Articulation Matrix: Mapping of Course Outcomes (COs) with Program Outcomes (POs 1-12)

Course Outcomes (COs) / Program Outcomes (POs)	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
1												
2												
3												
4												
5												
6												
7												
8												

Course Articulation Matrix relates course outcomes of course with the corresponding program outcomes whose attainment is attempted in this course. Mark 'X' in the intersection cell if a course outcome addresses a particular program outcome.

References:

Text books:

Date **Course Co-ordinator** **Subject Committee Chairperson**

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