FACULTY OF SCIENCES

SYLLABUS FOR THE BATCH FROM 2022 to 2025

Programme Code: BSHZ

Programme Name: B.Sc. Hons.
Zoology

(Semester I- II)

Examinations: 2022-2025

Department of Zoology

Khalsa College, Amritsar

S. No.	PROGRAMME OBJECTIVES
1.	To inculcate scientific temperament to broaden the outlook of students.
2.	To provide students a launch-pad for higher education.
3.	Skill development through practical, enabling them to solve common problems in their daily life.
4.	To undertake activities like field survey, photography, projects etc. to unearth their hidden talents.
5.	Holding Science exhibition, poster competition and educational trips, shaping their personality and preparing their minds to face, think and act in different situations.
6.	Participation in various cultural programs to build their confidence which help them to interact with different individuals in the society and work for welfare of the community.

S. No.	PROGRAMME SPECIFIC OUTCOMES (PSOS)
PSO-1	It is one of the most fundamental units of basic sciences studied at undergraduate level.
PSO-2	The programme helps to develop scientific tempers and attitudes which in turn can be useful for the scientific developments that make a nation or society to grow at a rapid pace.
PSO-3	After the completion of this course, students have the option to go higher studies i.e. Ph.D. and then do research work for the welfare of mankind
PSO-4	After higher studies, students can join as scientist or assistant professor and can even look for professional job oriented courses, such as civil services
PSO-5	Students can go to serve in industries and opt for establishing their own industrial units

B.Sc. Hons. Zoology Program Code: BSHZ

COURSE SCHEME							
SEMESTER - I							
Course Code	**Course Name**	**Hours /Week**	**Max. Marks**				**Page No.**
			Th	**Pr**	**IA**	**Total**	
ZHZ-111	Biology of Non Chordates-I	4	37	-	13	50	4
BHZ-111	Cryptogams-I	4	37	-	13	50	6
PHU-111	Optics	4	37	-	13	50	8
MHZ-111	Bio-Mathematics-I	4	25+12	-	13	50	10
ZHZ-103	Zoology Lab-I	4	-	37	13	50	12
BHZ-104	Botany Lab-I	4	-	37	13	50	14
PHU-112	Physics Lab-I	4	-	37	13	50	15
BCEN-1123	Communicative English-I	4	37	-	13	50	17
BHPB-1101/	Punjabi-I	4	37	-	13	50	18
BPBI-1102/	Basic Punjabi-I						19
BPHC-1104	Punjab History & Culture						20
ZDA-111	Drug Abuse (Compulsory)	1.5	50	--		50 (NC)	22
			Total Marks			**500**	

COURSE SCHEME							
SEMESTER - II							
Course Code	**Course Name**	**Hours /Week**	**Max. Marks**				**Page No.**
			Th	**Pr**	**IA**	**Total**	
ZHZ-121	Biology of Non Chordates -II	4	37	-	13	50	24
BHZ-121	Cryptogams -II	4	37	-	13	50	26
PHU-121	Modern Physics-II	4	37	-	13	50	28
MHZ-121	Bio-Mathematics-II	4	25+12	-	13	50	29
ZHZ-122	Zoology Lab-II	4	-	37	13	50	31
BHZ-122	Botany Lab-II	4	-	37	13	50	33
PHU-122	Physics Lab-II	4	-	37	13	50	34
BCEN-1223	Communicative English-II	4	37	-	13	50	36
BHPB-1201/	Punjabi-II	4	37	-	13	50	37
BPBI-1202/	Basic Punjabi-II						38
BPHC-1204	Punjab History & Culture						39
ZDA-121	Drug Abuse (Compulsory)	1.5	50	--		50 (NC)	41
			Total Marks			**500**	

(NC)- Non-Credit

Semester I

COURSE CODE: ZHZ-111

COURSE TITLE: BIOLOGY OF NON-CHORDATES-I

Credit Hours/week: 4
Total hours: 60
Theory Paper: 37
Internal Assessment: 13
Periods/week: 6 **Total Marks: 50**

Instructions for the Paper Setters:

1. There will be a total of 9 questions of which five are to be attempted.
2. Question 1 will be compulsory and will be of 8 short answer type (one mark each)
3. The remaining 8 questions shall include two questions from each unit. Candidates shall be required to attempt 4 questions, one from each unit. Each question carries 8 marks. Preferably, the question should not be split into any sub-parts. In case of any splitting, it should not have more than two sub-parts.

COURSE OBJECTIVES: The paper aims to

1	Understand the animal kingdom.
2	Understand the origin and evolutionary relationships and taxonomic positions of phylum Protozoa to Annelida.
3	Understand the general characteristics and body organization of animals belonging to Protozoa to Annelida.

UNIT-I

- Protozoa : Type study
  - *Amoeba proteus* (Amoeboid movements)
  - *Euglena viridis* and
  - *Paramecium (*Kappa particles)

UNIT-II

- Porifera : special reference to different canal systems
  Type study
  - *Sycon*
- Coelenterata : Type study
  - *Obelia*
- Ctenophora: General characteristics, comparison with coelenterates and their evolutionary significance.

UNIT-III

- Platyhelminthes : Type study
  - *Fasciola hepatica*
  - *Taenia solium*
- Pathogenicity and prophylaxis of both.

UNIT-IV

- Aschelminthes :Type study
  - *Ascaris*
- Parasitic adaptations in Helminthes
- Annelida *:* Type study
  - *Pheretima posthuma*

Books Recommend:

1. Barnes, R.D., Invertebrate Zoology, Saunders W.B., Co., Philadelphia, 1980.
2. Dhami, P.S. and Dhami, J.K., Invertebrate Zoology, 5th ed., R. Chand & Co., New Delhi, 2004.
3. Kotpal, R.L., Modern Text Book of Zoology, Invertebrates, 10th ed., Rastogi Publications, Meerut, 2012.
4. Parker, T.J. and Haswell, W.A., Text book of Zoology, Invertebrates, 7th ed., Vol. I (eds. A.J. Marshall & W.D. Williams), CBS Publishers & Distributors., Delhi, 1992.

COURSE OUTCOMES

CO-1.	The subject of non-chordates helps the students to know about the structural aspects of different animals
CO-2.	Students also gain knowledge about the taxonomies and evolutionary aspects of Zoology.
CO-3.	To study faunal diversity and learn to implement conservation measures to save biodiversity

Semester-I
COURSE CODE: BHZ-111
COURSE TITLE: CRYPTOGAMS-I

Credit Hours/week: 4
Total hours: 60
Theory Paper: 37
Internal Assessment: 13
Periods/week: 6 **Total Marks: 50**

Instructions for the Paper Setters:

1. There will be a total of 9 questions of which five are to be attempted.
2. Question 1 will be compulsory and will be of 8 short answer type (one mark each)
3. The remaining 8 questions shall include two questions from each unit. Candidates shall be required to attempt 4 questions, one from each unit. Each question carries 8 marks. Preferably, the question should not be split into any sub-parts. In case of any splitting, it should not have more than two sub-parts.

COURSE OBJECTIVES

1	To acquaint students with basic concepts of diversity of Algae, Fungi, Lichens etc.
2	To study systematic Position, structure, and function of these microbes.

Unit –I

- **Algae:** Habit and habitat, general characters, distribution, classification and economic importance of Algae.
- Structure, reproduction and life cycle of:
  - **Cyanophyta:** *Oscillatoria* and *Nostoc*
  - **Chlorophyta**: *Ulothrix* and *Spirogyra*

Unit –II

- Structure, reproduction and life cycle of:
  - **Xanthophyta**: *Vaucheria*
  - **Phaeophyta**: *Ectocarpus* and *Sargassum*
  - **Rhodophyta**: *Batrachospermum* and *Polysiphonia*

Unit – III

- **Fungi:** Occurrence and distribution, general characteristics, classification and economic importance of Fungi.
- General characteristics, structure, reproduction and life cycle of:
  - **Mastigomycotina:** *Phytophthora*
  - **Zygomycotina**: *Rhizopus*
  - **Ascomycotina**: *Peziza*, *Penicillium*

Unit-IV

- General characteristics, Structure, reproduction and life cycle of:
  - **Basidiomycotina**: *Puccinia, Agaricus*
  - **Deuteromycotina:** *Colletotrichum, Alternaria*
- **General account of Lichens.**

Suggested Readings:

1. Alexopolous, J. and W. M. Charles. 1988. Introduction to Mycology. Wiley Eastern, New Delhi.
2. Dube, H.C.1990. An Introduction to Fungi, Vikas Publishing House, Pvt. Ltd. Delhi.
3. Pandey, B. P. 2001. College Botany, Vol. I: Algae, Fungi, Lichens, Bacteria, Viruses, Plant Pathology, Industrial Microbiology and Bryophyta. S. Chand & Company Ltd, New Delhi.
4. Sharma, O.P. 1992. Text Book of Thallophytes, McGraw Hill Publishing Co. New Delhi.
5. Sharma, P.D. 1991. The Fungi, Rastogi and Co, Meerut.
6. Thakur, A. K. and S. K. Bassi**.** 2008. A Textbook of Botany: Diversity of Microbes and Cryptogams. S. Chand & Company Ltd, New Delhi.
7. Vashishta, B. R. 1990. Botany for Degree Students: Fungi, S. Chand & Company Ltd, New Delhi.

COURSE OUTCOMES

CO-1	This course makes student aware about the diversity in various life forms of plant kingdom
CO-2	It enables students to identify algae and fungi.
CO-3	It is the basis of advanced study in botany.
CO-4	It enables students to differentiate structural differences.
CO-5	Increase the awareness and appreciation of human friendly algae and their economic importance.

Semester-I
COURSE CODE: PHU-111
COURSE TITLE: OPTICS

Credit Hours/week: 4
Total hours: 60
Theory Paper: 37
Internal Assessment: 13
Periods/week: 6 **Total Marks: 50**

Instructions for the Paper Setters:

1. There will be a total of 9 questions of which five are to be attempted.
2. Question 1 will be compulsory and will be of 8 short answer type (one mark each)
3. The remaining 8 questions shall include two questions from each unit. Candidates shall be required to attempt 4 questions, one from each unit. Each question carries 8 marks. Preferably, the question should not be split into any sub-parts. In case of any splitting, it should not have more than two sub-parts.

Course Objectives:

1	To gain theoretical knowledge and an in depth understanding of properties of light like reflection, refraction, interference, diffraction and polarization and their subsequent applications in the design and working of different optical instruments used in various fields of science.

UNIT-I

Ray Optics: Reflection of light, Refraction of light, Total internal reflection and its applications, Lenses, Lens maker's formula, Refraction and dispersion through a prism, Scattering of light, Microscope and its magnifying power.

UNIT-II

Interference: Young's experiment, Coherent Source, Phase and path differences, Theory of interference fringes, Fresnel's biprism, Thickness of thin transparent sheet, Interference in thin film due to reflected and transmitted light, Colour of thin film, Newton's rings and their applications, Michelson interferometer, Febry-Perot Interferometer, Anti reflection coatings.

UNIT-III

Diffraction: Introduction, Fraunhoffer diffraction at a single slit and its discussion, Fraunhoffer diffraction at double slit, Missing orders in a double slit, Diffraction of N slits and its discussion, Diffraction grating, dispersive power, Rayleigh criterion for resolving power, Resolving power of a diffraction grating.

UNIT-IV

Polarization: Transverse nature of light, Polarization by reflection and refraction, Brewster's Law, Malus Law, Double refraction, Nicol Prism, Elliptically and circularly polarized light, Quarter-wave and half-wave plates, Production and detection of polarized light, Optical activity, Specific rotation. Half shade polarimeter.

Reference Books:

1. Bhatia, T. S., Sharma, V. K. S. Vikas & Company: A Text Book of Optics.
2. Ghatak, Ajoy: Optics. Tata Mc Graw Hill Publishing Company Limited.
3. Jenkins and White: Fundamentals of Optics.
4. Subramanayam, N., Lal, B. and Avadhanulu, M. N.: A Text Book of Optics

COURSE OUTCOMES

	On completing the course, the students will be able to:
CO-1	Gain knowledge about wave theory of light.
CO-2	Acquire an in depth understanding of properties of light like reflection, refraction, interference, diffraction and polarization
CO-3	Understand the applications of interference in design and working of interferometers.
CO-4	Comprehend the concept of Polarization through thorough understanding of Electromagnetic waves and their transverse nature.
CO-5	Understand the applications of diffraction and polarization in various optical instruments.

Semester – I
COURSE CODE: MHZ-111
COURSE TITLE: BIO-MATHEMATICS-I

Credit Hours/week: 4
Total hours: 60
Theory Paper: 25
Practica: 12
Internal Assessment: 13
Periods/week: 4+2=6 **Total Marks: 50**

Instructions for the Paper Setters:

1. There will be a total of 9 questions of which five are to be attempted.
2. Question 1 will be compulsory and will be of 8 short answer type (one mark each)
3. The remaining 8 questions shall include two questions from each unit. Candidates shall be required to attempt 4 questions, one from each unit. Each question carries 8 marks. Preferably, the question should not be split into any sub-parts. In case of any splitting, it should not have more than two sub-parts.

COURSE OBJECTIVES:

1	To enable the students understand the basic concept of function and limit.
2	To help the students to acquit with the properties of Matrices.
3	To make the students aware about the differentiation of a various functions.
4	To correlate mathematical concepts with the zoology.

UNIT-I

Functions: Domain and Range of a function, Graph of a function, Inverse functions, Exponential and logarithmic functions, Limit of functions, Algebraic computation of limits, Continuity of function at a point.

UNIT-II

Differentiation: Derivability and Derivative, Derivatives of standard functions, Formulae on derivative of sum, difference, product and quotient of functions, Chain rule. Derivative of trigonometric functions, exponential functions.

UNIT-III

Derivative of functions expressed in parametric form
Logarithmic differentiation, Derivative of higher order (upto 2^{nd} order)

UNIT-IV

Maxima and minima of a function of a single variable
Introduction to Partial Differentiation

Practicals:

1. Graphs of Trigonometric functions
2. Exponential function
3. Logarithmic function
4. Inverse functions
5. Hyperbolic functions
6. Polynomial functions

Recommended books:.

1. Batschelet E.(1971): Introduction to Mathematics for Life Scientist, Springer-Verlog, Berlin.
2. Shanti Naryan and P.K. Mittal (2011): Differential Calculus, S.Chand and Co. (New Delhi)

COURSE OUTCOMES:

CO-1	Understand the basic concept of function and limit.
CO-2	To acquit with the properties of matrices.
CO-3	Solve the problems related to the differentiation of a various functions.
CO-4	Find out the maximum and minimum value of a function using derivatives.
CO-5	Correlate mathematical concepts with the zoology.

Semester-I
BHZ-107: Zoology Lab-I
(Related to BHZ-101)

Credit Hours/week: 4
Total hours: 60
Practical Paper: 37
Internal Assessment: 13
Periods/week: 6 **Total Marks: 50**

COURSE OBJECTIVES: The paper aims to:

1	Understand the structure of invertebrates and classify them.
2	Understand the structure and function of digestive, reproductive & nervous system of earthworm.
3	Understand the preparation of temporary slides.
4	Study permanent stained slides of animals from protozoa to annelida.

I.	Classification up to orders and study of the specimens mentioned against each phylum with ecological note and economic importance if any	
	Protozoa:	*Amoeba, Euglena, Trypanosoma, Noctiluca, Eimeria, Monocystis, Paramecium, Opalina, Vorticella, Balantidium, Nyctotherus and Polystomella, Radiolarian, Forminiferan.*
	Porifera:	*Sycon, Grantia, Spongilla, Euplectella, Hyalonema, Chalina, Euspongia.*
	Coelenterata:	*Porpita, Velella, Physalia, Aurelia, Metridium, Alcyonium, Tubipora, Zooanthus, Madrepora, Favia, Fungia, Gorgonia, Pennatula.* *Obelia* (colony, medusa and polyp), *Sertularia, Tubipora, Plumularia, Pennaria, Bougainvillea.*
	Platyhelminthes:	*Planaria, Fasciola, Taenia, Dugesia,Echinococcus*
	Aschelminthes:	*Ascaris* (male and female), *Trichinella, Ancylostoma*
	Annelida:	*Pheretima, Lumbricus, Nereis, Heteronereis, Polynoe, Aphrodite, Amphitrite, Chaetopterus, Arenicola, Hirudinaria, Pontobdella*
II	**Study of Permanent slides**	
	Porifera:	Spicules, Gemmules, *Sycon* (T.S. and L.S.).
	Coelenterata:	*Hydra* (W.M.) with bud, T.S. through the regions of testis and ovary
	Platyhelminthes:	*Fasciola* (W.M. & T.S.), Miracidium, Sporocyst, Redia, Cercaria and Metacercaria larvae of *Fasciola*, *Taenia* (scolex, mature and gravid proglottids)
	Aschelminthes:	*Ascaris* (T.S. male and female)
	Annelida:	Earthworm (T.S. typhlosolar and pharyngeal region, through gizzard), spermathecae , setae and septal nephridium; Parapodia of *Nereis*
III	**Temporary mounts:**	Gemmules and spicules of *Sycon*

IV	**Culture Preparation:**	*Paramecium*
V	**Study of systems through charts/models**	
	Pheretima posthuma:	Digestive, Reproductive and Nervous system
	Ascaris:	Reproductive and Nervous system
VI	**Students must be taken out to study biodiversity among invertebrates**	

Guide lines for conduct of practical Examination:-

1.	Identify and classify the specimens upto order. Write a note on their habit, habitat, special features and economic importance.	15
2.	Identify the slides and give two reasons for identification.	9
3.	Identify the systems by using models.	4
4.	Preparation of Temporary mount	4
5.	Assignment	3
6.	Viva-voce & Practical file.	5

*Minor changes in the practicals can be done depending upon availability of the materials.

COURSE OUTCOMES:

CO-1.	Have a knowledge about all the different phyla of invertebrates
CO-2.	Understand the comparative structure of invertebrates
CO-3.	Have an insight about the microscopic life
CO-4.	Differentiate invertebrates on the basis of morphological characteristics

Semester–I
COURSE CODE: BHZ-112
COURSE TITLE: Botany Lab I (Cryptogams-I)

Credit Hours/week: 4
Total hours: 60
Practical Paper: 37
Internal Assessment: 13
Periods/week: 6 **Total Marks: 50**

COURSE OBJECTIVES: The paper aims to

1	Study the morphology of algae and fungi.
2	Study diseases of algae and fungi.
3	Study the various types of Lichens and their reproductive structures

1. To study the morphology of various genera included in algae:
   *Oscillatoria*and *Nostoc*
   *Ulothrix*and *Spirogyra*
   Vaucheria
   Ectocarpus
   Batrachospermum and *Sargassum*
2. To study the morphology and reproductive stages of various genera included in fungi:
   Phytophthora
   Rhizopus
   Saccharomyces
   Agaricus
   Peziza
3. To study disease samples along with spores and life cycle in:
   Puccinia
   Colletotrichum
   Alternaria
4. To Study the various types of Lichens and their reproductive structures (soredia and apothecium):
   Crustose
   Foliose
   Fructicose
5. To study Mycorrhizae:
   Ectomycorrhiza
   Endomycorrhiza

COURSE OUTCOMES:

CO-1.	To understand the external structure of algae and fungi.
CO-2.	To study disease samples along with spores and life cycle
CO-3.	Study the various types of Lichens and their reproductive structures

Semester-I
COURSE CODE: PHU-112
COURSE TITLE: Physics Lab-I

Credit Hours/week: 4
Total hours: 60
Practical Paper: 37
Internal Assessment: 13
Periods/week: 6 **Total Marks: 50**

General Guidelines for Practical Examination

I. The distribution of marks is as follows:
- i) One experiment-**10 Marks**
- ii) Brief Theory-**3 Marks**
- iii) Viva–Voce -**4 Marks**
- iv) Record (Practical file)-**3 Marks**

II. There will be one sessions of 3 hours duration. The paper will have one session and will consist of 8 experiments out of which an examinee will mark 6 experiments and one of these is to be allotted by the external examiner.

III. Number of candidates in a group for practical examination should not exceed 12.

IV. In a single group no experiment is to be allotted to more than three examinee in any group.

Course Objectives:

1	To acquaint and make the students understand the working principles of different optical instruments and relate them to the theoretical concepts of Interference, diffraction and polarization.
2	Gain precision in handling of optical instruments and in making accurate physical measurements using experimental uncertainty and limits

Course Contents:

1. To find the angle of prism by rotating telescope.
2. To find the refractive index of the glass prism using a spectrometer.
3. To find the refractive index of a transparent liquid using a hollow glass prism and spectrometer for given wavelength.
4. To study the variation of refractive index with wavelength of spectral line of mercury source and hence find the values of Cauchy's constant.
5. To measure the wavelength of sodium light by using Newton's rings apparatus.
6. To determine the wavelength of spectral line of mercury using diffraction grating.
7. To determine the wavelength of sodium light using plane diffraction grating.
8. To determine the resolving power of plane diffraction grating.
9. To measure an accessible distance between two points using a sextant.
10. To measure an inaccessible distance between two points using a sextant.
11. To find the magnification power of a telescope.
12. To find the specific rotation of sugar solution by Laurentz half shade polarimeter.

Reference Books:

1. Arora, C.L.: Practical Physics, S. Chand & Co.
2. Bhatia, T.S., Kaur,Gursharan and Singh, Iqbal: Practical Physics Vol. II, Vishal Publications

COURSE OUTCOMES

	On completing the course, the students will be able to:
CO1	Understand the working of basic optical instruments.
CO2	Understand and differentiate between the different phenomenon related to light such as Interference, diffraction and polarization.
CO3	Gain precision in handling of optical instruments.
CO4	Understand the operating principle of certain optical instruments
CO5	Understand the applications of Interference, diffraction and polarization.

Semester – I
COURSE CODE: BCEN-1123
COURSE TITLE: COMMUNICATIVE ENGLISH-I
[B.Sc. (Hons.) Physics, Chemistry, Zoology, Botany, Math, Computational Statistics & Data Analytics]

Credit Hours/week: 4
Total hours: 60
Theory Paper: 37
Internal Assessment: 13
Periods/week: 6 **Total Marks: 50**

Suggested paper pattern:-

1. Practical Question on Paragraph Writing with internal choice as prescribed in *The Written Word* (8 marks)
2. Short answer type questions from Unit 1 and 2 of *Making Connections : A Strategic Approach To Academic Reading* (12 marks)
3. Essay type question with internal choice from Unit 1 and 2 of *Making Connections: A strategic Approach to Academic Reading* (8 marks)
4. A question on Letter Writing from *The Written Word* (6 marks)
5. Theoretical question(s) based on the two chapters from the book *The Written Word* (6 marks)

COURSE OBJECTIVES:

1	To develop competence in written communication.
2	To inculcate innovative and critical thinking among the students.
3	To enable them to grasp the application of communication theories.
4	To acquire the knowledge of latest technology related with communication skills.
5	To provide knowledge of multifarious opportunities in the field of this programme.

Course Contents

1. Reading and Comprehension Skills:

Students will be required to read and comprehend the essays in Unit 1 and 2 of the book *Making Connections: A Strategic Approach to Academic Reading* by Kenneth J. Pakenham, Second Edition. They will be required to answer the questions given after each essay.

2. Developing Vocabulary and using it in the Right Context:

The students will be required to master "Word List" and "Correct Usage of Commonly Used Words and Phrases" from the Chapter "Vocabulary" in the book *The Written Word.*

3. Writing Skills

Students will be required to write Paragraph Writing and Letter Writing as in the book *The Written Word* by Vandana R. Singh, Oxford University Press, New Delhi.

COURSE OUTCOMES: The completion of this course enables students to:

CO-1	Identify common errors in language and rectify them
CO-2	Develop and expand writing skills through controlled and guided activities
CO-3	Develop coherence, cohesion and competence in written discourse through intelligible pronunciation
CO-4	Develop the ability to handle the interview process confidently and learn the subtle nuances of an effective group discourse
CO-5	Communicate contextually in specific and professional situations with courtesy

Semester – I
COURSE CODE: BPBI-1101
COURSE TITLE: ਲਾਜ਼ਮੀ ਪੰਜਾਬੀ

ਕ੍ਰੈਡਿਟ ਪ੍ਰਤੀ ਹਫਤਾ: 04
ਕੁੱਲ ਘੰਟੇ: 60
ਥਿਊਰੀ ਅੰਕ: 37
ਇੰਟਰਨਲ ਅਸੈੱਸਮੈਂਟ: 13
ਸਮਾਂ: 3 ਘੰਟੇ ਕੁੱਲ ਅੰਕ: 50

ਅੰਕ-ਵੰਡ ਅਤੇ ਪ੍ਰੀਖਿਅਕ ਲਈ ਹਦਾਇਤਾਂ

ਸਿਲੇਬਸ ਦੇ ਚਾਰ ਭਾਗ ਹਨ ਪਰ ਪ੍ਰਸ਼ਨ-ਪੱਤਰ ਦੇ ਪੰਜ ਭਾਗ ਹੋਣਗੇ। ਪਹਿਲੇ ਚਾਰ ਭਾਗਾਂ ਵਿਚ 02-02 ਪ੍ਰਸ਼ਨ ਪੁੱਛੇ ਜਾਣਗੇ। ਹਰੇਕ ਭਾਗ ਵਿਚੋਂ 01-01 ਪ੍ਰਸ਼ਨ ਕਰਨਾ ਲਾਜ਼ਮੀ ਹੋਵੇਗਾ। ਹਰੇਕ ਪ੍ਰਸ਼ਨ ਦੇ ਬਰਾਬਰ (08) ਅੰਕ ਹੋਣਗੇ। ਪ੍ਰਸ਼ਨ ਪੱਤਰ ਦੇ ਪੰਜਵੇਂ ਭਾਗ ਵਿਚ ਸਾਰੇ ਸਿਲੇਬਸ ਵਿਚੋਂ 01-01 ਅੰਕ ਦੇ ਛੇ ਪ੍ਰਸ਼ਨ ਪੁੱਛੇ ਜਾਣਗੇ, ਜਿਨ੍ਹਾਂ ਵਿਚੋਂ 05 ਪ੍ਰਸ਼ਨਾਂ ਦੇ ਉੱਤਰ ਦੇਣਾ ਲਾਜ਼ਮੀ ਹੋਵੇਗਾ। ਪੇਪਰ ਸੈੱਟ ਕਰਨ ਵਾਲਾ ਜੇਕਰ ਚਾਹੇ ਤਾਂ ਪ੍ਰਸ਼ਨਾਂ ਦੀ ਵੰਡ ਅੱਗੋਂ ਵੱਧ ਤੋਂ ਵੱਧ ਚਾਰ ਉਪ-ਪ੍ਰਸ਼ਨਾਂ ਵਿਚ ਕਰ ਸਕਦਾ ਹੈ।
ਨੋਟ: ਇੰਟਰਨਲ ਅਸੈੱਸਮੈਂਟ 13 ਅੰਕਾਂ ਦੀ ਹੈ, ਜੋ ਕਾਲਜ ਵੱਲੋਂ ਨਿਰਧਾਰਿਤ ਦਿਸ਼ਾ ਨਿਰਦੇਸ਼ਾਂ ਅਨੁਸਾਰ ਥਿਊਰੀ ਅੰਕਾਂ ਤੋਂ ਵੱਖਰੀ ਹੋਵੇਗੀ। ਇਸ ਪੇਪਰ ਦੇ ਕੁੱਲ ਅੰਕ 37+13 = 50 ਹਨ।

ਕੋਰਸ ਦਾ ਉਦੇਸ਼ ਫ਼ੋਰਸਏ ਬਜਏਚਟਵਿਏ

- ਵਿਦਿਆਰਥੀਆਂ ਵਿਚ ਸਾਹਿਤਕ ਰੁਚੀਆਂ ਪੈਦਾ ਕਰਨਾ।
- ਆਲੋਚਨਾਤਮਕ ਰੁਚੀਆਂ ਵਿਕਸਤ ਕਰਨਾ।
- ਮਾਤ ਭਾਸ਼ਾ ਦੀ ਸਮਝ ਨੂੰ ਵਿਕਸਤ ਕਰਨਾ।

ਪਾਠ-ਕ੍ਰਮ

ਭਾਗ-ਪਹਿਲਾ

ਸਾਹਿਤ ਦੇ ਰੰਗ, ਡਾ. ਮਹਿਲ ਸਿੰਘ (ਸੰਪਾ.), ਰਵੀ ਸਾਹਿਤ ਪ੍ਰਕਾਸ਼ਨ, ਅੰਮ੍ਰਿਤਸਰ।
ਭਾਗ ਪਹਿਲਾ - ਕਵਿਤਾ ਅਤੇ ਕਹਾਣੀ, ਡਾ. ਮਹਿਲ ਸਿੰਘ ਅਤੇ ਡਾ. ਆਤਮ ਰੰਧਾਵਾ (ਸਹਿ ਸੰਪਾ.)
(ਕਵਿਤਾ ਭਾਗ ਵਿਚੋਂ ਪ੍ਰਸੰਗ ਸਹਿਤ ਵਿਆਖਿਆ/ਕਵਿਤਾ ਦਾ ਵਿਸ਼ਾ-ਵਸਤੂ। ਕਹਾਣੀ ਭਾਗ ਵਿਚੋਂ ਸਾਰ/ਵਿਸ਼ਾ-ਵਸਤੂ)

ਭਾਗ-ਦੂਜਾ

ਸੰਸਾਰ ਦੀਆਂ ਪ੍ਰਸਿੱਧ ਹਸਤੀਆਂ
ਪ੍ਰਿੰ. ਤੇਜਾ ਸਿੰਘ ਅਤੇ ਹਰਨਾਮ ਸਿੰਘ ਸ਼ਾਨ (ਸੰਪਾ .), ਪੰਜਾਬੀ ਸਾਹਿਤ ਪ੍ਰਕਾਸ਼ਨ, ਅੰਮ੍ਰਿਤਸਰ।
(ਜੀਵਨੀ 01 ਤੋਂ 09 ਤੱਕ, ਵਿਸ਼ਾ-ਵਸਤੂ/ਸਾਰ/ਨਾਇਕ ਬਿੰਬ)

ਭਾਗ-ਤੀਜਾ

(ੳ) ਪੈਰ੍ਹਾ ਰਚਨਾ
(ਅ) ਪੈਰ੍ਹਾ ਪੜ੍ਹ ਕੇ ਪ੍ਰਸ਼ਨਾਂ ਦੇ ਉੱਤਰ।

ਭਾਗ-ਚੌਥਾ

(ੳ) ਪੰਜਾਬੀ ਭਾਸ਼ਾ: ਨਿਕਾਸ ਤੇ ਵਿਕਾਸ
(ਅ) ਭਾਸ਼ਾ ਵੰਨਗੀਆਂ: ਭਾਸ਼ਾ ਦਾ ਟਕਸਾਲੀ ਰੂਪ, ਭਾਸ਼ਾ ਅਤੇ ਉਪ-ਭਾਸ਼ਾ ਦਾ ਅੰਤਰ, ਪੰਜਾਬੀ ਉਪ-ਭਾਸ਼ਾਵਾਂ ਦੇ ਪਛਾਣ-ਚਿੰਨ੍ਹ

ਪਾਠ-ਕ੍ਰਮ ਨਤੀਜੇ ਫ਼ੋਰਸਏ ਟਚੋਮਏਸ (ਫ਼ੌਸ)

- ਵਿਦਿਆਰਥੀ ਦੀ ਸਾਹਿਤਕ ਸੋਚ-ਸਮਝ ਵਿਕਸਤ ਹੋਵੇਗੀ।
- ਵਿਦਿਆਰਥੀ ਵਿਚ ਸਾਹਿਤ ਰੁਚੀਆਂ ਵਿਕਸਤ ਹੋਣਗੀਆਂ।
- ਵਿਦਿਆਰਥੀ ਨੂੰ ਸਾਹਿਤ ਸਿਰਜਣਾ ਦੀ ਸੰਭਾਵਨਾ ਵਧੇਗੀ।
- ਵਿਦਿਆਰਥੀ ਕਿਸੇ ਵੀ ਵਿਸ਼ੇ ਦਾ ਗਹਿਨ ਅਧਿਐਨ ਕਰਨ ਦੇ ਕਾਬਲ ਹੋਵੇਗਾ।
- ਵਿਦਿਆਰਥੀ ਮਾਤ ਭਾਸ਼ਾ ਦੇ ਵਿਕਾਸ ਵਿਚ ਵਿਸ਼ੇਸ਼ ਯੋਗਦਾਨ ਪਾਉਣਗੇ।

Semester – I
COURSE CODE: BPBI-1102
COURSE TITLE: ਮੁਢਲੀ ਪੰਜਾਬੀ
(In Lieu of Compulsory Punjabi)

ਕ੍ਰੈਡਿਟ ਪ੍ਰਤੀ ਹਫਤਾ: 04
ਕੁੱਲ ਘੰਟੇ: 60
ਥਿਊਰੀ ਅੰਕ: 37
ਇੰਟਰਨਲ ਅਸੈੱਸਮੈਂਟ: 13
ਸਮਾਂ: 3 ਘੰਟੇ ਕੁੱਲ ਅੰਕ: 50

ਅੰਕ-ਵੰਡ ਅਤੇ ਪ੍ਰੀਖਿਅਕ ਲਈ ਹਦਾਇਤਾਂ

ਪਹਿਲੇ ਭਾਗ ਵਿਚੋਂ ਚਾਰ ਵਰਣਨਾਤਮਕ ਪ੍ਰਸ਼ਨ ਪੁੱਛੇ ਜਾਣਗੇ ਜਿਨ੍ਹਾਂ ਵਿਚੋਂ ਤਿੰਨ ਪ੍ਰਸ਼ਨਾਂ ਦਾ ਉੱਤਰ ਦੇਣਾ ਲਾਜ਼ਮੀ ਹੈ। ਹਰ ਪ੍ਰਸ਼ਨ ਦੇ ਚਾਰ-ਚਾਰ ਅੰਕ ਹਨ। ਭਾਗ ਦੂਸਰਾ ਵਿਚੋਂ ਦੋ-ਦੋ ਅੰਕ ਦੇ ਪੰਜ ਪ੍ਰਸ਼ਨ ਪੁੱਛੇ ਜਾਣਗੇ। ਸਾਰੇ ਪ੍ਰਸ਼ਨ ਲਾਜ਼ਮੀ ਹਨ। ਭਾਗ ਤੀਸਰਾ ਵਿਚੋਂ ਤਿੰਨ ਪ੍ਰਸ਼ਨ ਪੁੱਛੇ ਜਾਣਗੇ ਜਿਨ੍ਹਾਂ ਵਿਚੋਂ ਦੋ ਪ੍ਰਸ਼ਨ ਹੱਲ ਕਰਨੇ ਲਾਜ਼ਮੀ ਹਨ ਜਿਨ੍ਹਾਂ ਦੇ ਪੰਜ-ਪੰਜ ਅੰਕ ਹਨ। ਭਾਗ ਚੌਥਾ ਵਿਚ ਪੰਜ ਅਸ਼ੁੱਧ ਸ਼ਬਦਾਂ ਨੂੰ ਸ਼ੁੱਧ ਕਰਕੇ ਲਿਖਣਾ ਹੋਵੇਗਾ।
ਨੋਟ: ਇੰਟਰਨਲ ਅਸੈੱਸਮੈਂਟ 13 ਅੰਕਾਂ ਦੀ ਹੈ, ਜੋ ਕਾਲਜ ਵੱਲੋਂ ਨਿਰਧਾਰਿਤ ਦਿਸ਼ਾ ਨਿਰਦੇਸ਼ਾਂ ਅਨੁਸਾਰ ਥਿਊਰੀ ਅੰਕਾਂ ਤੋਂ ਵੱਖਰੀ ਹੋਵੇਗੀ। ਇਸ ਪੇਪਰ ਦੇ ਕੁਲ ਅੰਕ 37+13 = 50 ਹਨ।

ਕੋਰਸ ਦਾ ਉਦੇਸ਼ Course Objective

- ਵਿਦਿਆਰਥੀ ਨੂੰ ਸ਼ੁੱਧ ਪੰਜਾਬੀ ਪੜ੍ਹਨਾ-ਲਿਖਣਾ ਸਿਖਾਉਣਾ।
- ਪੰਜਾਬੀ ਭਾਸ਼ਾ ਦੀਆਂ ਵਿਆਕਰਨਕ ਬਾਰੀਕੀਆਂ ਤੋਂ ਜਾਣੂ ਕਰਾਉਣਾ।
- ਸ਼ੁੱਧ ਸੰਚਾਰ ਨੂੰ ਵਿਕਸਤ ਕਰਨਾ।

ਪਾਠ-ਕ੍ਰਮ

ਭਾਗ-ਪਹਿਲਾ

(ੳ) ਪੰਜਾਬੀ ਭਾਸ਼ਾ ਤੇ ਗੁਰਮੁਖੀ ਲਿਪੀ:
ਨਾਮਕਰਣ ਤੇ ਸੰਖੇਪ ਜਾਣ-ਪਛਾਣ: ਗੁਰਮੁਖੀ ਵਰਣਮਾਲਾ, ਅੱਖਰ ਕ੍ਰਮ, ਸਵਰ ਵਾਹਕ (ੳ, ਅ, ੲ), ਲਗਾਂ-ਮਾਤਰਾਂ, ਪੈਰ ਵਿਚ ਬਿੰਦੀ ਵਾਲੇ ਵਰਨ, ਪੈਰ ਵਿਚ ਪੈਣ ਵਾਲੇ ਵਰਨ, ਬਿੰਦੀ, ਟਿੱਪੀ, ਅੱਧਕ
(ਅ) ਸਿਖਲਾਈ ਤੇ ਅਭਿਆਸ

ਭਾਗ-ਦੂਜਾ

ਗੁਰਮੁਖੀ ਆਰਥੋਗਰਾਫੀ ਅਤੇ ਉਚਾਰਨ:
ਸਵਰ, ਵਿਅੰਜਨ: ਮੁਢਲੀ ਜਾਣ-ਪਛਾਣ ਅਤੇ ਉਚਾਰਨ, ਮੁਹਾਰਨੀ, ਲਗਾਂ-ਮਾਤਰਾਂ ਦੀ ਪਛਾਣ

ਭਾਗ-ਤੀਜਾ

ਪੰਜਾਬੀ ਸ਼ਬਦ-ਜੋੜ: ਮੁਕਤਾ (ਦੋ ਅੱਖਰਾਂ ਵਾਲੇ ਸ਼ਬਦ, ਤਿੰਨ ਅੱਖਰਾਂ ਵਾਲੇ ਸ਼ਬਦ), ਸਿਹਾਰੀ ਵਾਲੇ ਸ਼ਬਦ, ਬਿਹਾਰੀ ਵਾਲੇ ਸ਼ਬਦ, ਔਂਕੜ ਵਾਲੇ ਸ਼ਬਦ, ਦੁਲੈਂਕੜ ਵਾਲੇ ਸ਼ਬਦ, ਲਾਂ ਵਾਲੇ ਸ਼ਬਦ, ਦੁਲਾਵਾਂ ਵਾਲੇ ਸ਼ਬਦ, ਹੋੜੇ ਵਾਲੇ ਸ਼ਬਦ, ਕਨੌੜੇ ਵਾਲੇ ਸ਼ਬਦ, ਲਗਾਖਰ (ਬਿੰਦੀ, ਟਿੱਪੀ, ਅੱਧਕ) ਵਾਲੇ ਸ਼ਬਦ

ਭਾਗ-ਚੌਥਾ

ਸ਼ੁੱਧ-ਅਸ਼ੁੱਧ ਸ਼ਬਦ

ਪਾਠ-ਕ੍ਰਮ ਨਤੀਜੇ Course Outcomes (COs)

- ਵਿਦਿਆਰਥੀ ਪੰਜਾਬੀ ਭਾਸ਼ਾ ਅਤੇ ਗੁਰਮੁਖੀ ਲਿਪੀ ਦੀ ਸਿਖਲਾਈ ਵਿਚ ਮੁਹਾਰਤ ਹਾਸਿਲ ਕਰਨਗੇ।
- ਪੰਜਾਬੀ ਭਾਸ਼ਾ ਵਿਚ ਮੁਹਾਰਨੀ, ਲਗਾਂ-ਮਾਤਰਾਂ, ਸਵਰ ਅਤੇ ਵਿਅੰਜਨ ਦੀ ਪਛਾਣ ਅਤੇ ਵਰਤੋਂ ਦੁਆਰਾ ਉਨ੍ਹਾਂ ਦੀ ਸਮਝ ਨੂੰ ਵਿਕਸਿਤ ਹੋਵੇਗੀ।
- ਪੰਜਾਬੀ ਸ਼ਬਦ-ਜੋੜਾਂ ਦੀ ਜਾਣਕਾਰੀ ਹਾਸਿਲ ਕਰਕੇ ਉਹ ਸ਼ੁੱਧ ਪੰਜਾਬੀ ਲਿਖਣ-ਪੜ੍ਹਨ ਦੇ ਸਮਰੱਥ ਹੋਣਗੇ।
- ਉਹ ਪੰਜਾਬੀ ਭਾਸ਼ਾ ਦੇ ਵਿਆਕਰਨ ਪ੍ਰਬੰਧ ਦੀ ਜਾਣਕਾਰੀ ਹਾਸਿਲ ਕਰਨਗੇ।

Semester – I
COURSE CODE: BPHC-1104
COURSE TITLE: PUNJAB HISTORY & CULTURE (From Earliest Times to C 320)
(Special Paper in lieu of Punjabi compulsory)
(For those students who are not domicile of Punjab)

Credit Hours/week: 4
Total hours: 60
Theory Paper: 37
Internal Assessment: 13
Periods/week: 6 **Total Marks: 50**

Instructions for the Paper Setters:
The question paper consists of five units: I, II, III, IV and V. Units I, II, III and IV will have two questions each. Each question carries 8 marks. The students are to attempt one question from each unit approximately in 800 words. Unit-V consists of 7 short answer type questions to be set from the entire syllabus. Students are to attempt any 5 questions in about 20 words each. Each question carries 1 mark.
Note: **The examiner is to set the question paper in two languages: English & Hindi.**

COURSE OBJECTIVES: The main objective of this course is to educate the history and culture of the Ancient Punjab to the students who are not domicile of the Punjab.

1.	It aims to familiarize these students with the physical features of ancient Punjab and its impact on its history and culture.
2.	It also provides them information about the different sources to construct the history and culture of the ancient Punjab
3.	The course intends to provide knowledge of social, economic, religious life of the Harrapan civilization, Indo-Aryans, teachings and impact of Jainism and Buddhism in the Punjab.

Unit-I

Physical features of the Punjab and impact on history.
1. Sources of the ancient history of Punjab.

Unit-II

2. Harappan Civilization: Town planning; social, economic and religious life of the Indus Valley People.
3. The Indo-Aryans: Original home and settlement in Punjab.

Unit-III

4. Social, Religious and Economic life during Rig Vedic Age.
5. Social, Religious and Economic life during later Vedic Age.

Unit-IV

6. Teachings and impact of Buddhism.
7. Jainism in the Punjab.

Suggested Readings:-

1. L. Joshi (ed),*History and Culture of the Punjab,* Art-I, Patiala, 1989 (3rd edition)
2. L.M. Joshi and Fauja Singh (ed*), History of Punjab*, Vol.I, Patiala 1977.
3. Budha Parkash,*Glimpses of Ancient Punjab*, Patiala, 1983.
4. B.N. Sharma, *Life in Northern India,* Delhi. 1966.

Course Outcomes: After completion of the course, the students will be able to learn-

CO-1	The history and culture of the Ancient
CO-2	Punjab. Physical features of ancient Punjab
CO-3	The sources of the history of the Punjab.
CO-4	Social, economic, religious life of the Harrapan civilization and Vedic-Aryans
CO-5	Teachings and impact of Jainism and Buddhism in the Punjab

Semester – I
COURSE CODE: ZDA-111
COURSE TITLE- Drug Abuse: PROBLEM OF DRUG ABUSE
(Compulsory for all Under Graduate Classes)

Credit Hours (per week):
1.5 hrs.
Total Hours: 22.5 hrs.
Max. Marks: 50

Instructions for the Paper Setters:
Section–A: (15 Marks): It will consist of five short answer type questions. Candidates will be required to attempt three questions, each question carrying 05 marks. Answer to any of the questions should not exceed two pages.
Section–B: (20 Marks) It will consist of four essay type questions. Candidates will be required to attempt two questions, each question carrying 10 marks. Answer to any of the questions should not exceed four pages.
Section–C: (15 Marks) It will consist of two questions. Candidate will be required to attempt one question only. Answer to the question should not exceed 5 pages.

COURSE OBJECTIVES: The course aims to

CO-1.	Generate the awareness against drug abuse.
CO-2.	Describe a variety of models and theories of addiction and other problems related to substance abuse.
CO-3.	Describe the behavioral, psychological, physical health and social impact of psychoactive substances.
CO-4.	Provide culturally relevant formal and informal education programs that raise awareness and support for substance abuse prevention and the recovery process.
CO-5.	Describe factors that increase likelihood for an individual, community or group to be at risk of substance use disorders.

UNIT–I

- **Meaning of Drug Abuse**
  Meaning, Nature and Extent of Drug Abuse in India and Punjab.

UNIT-II

- **Consequences of Drug Abuse for:**
  Individual : Education, Employment and Income.
  Family : Violence.
  Society : Crime.
  Nation : Law and Order problem.

UNIT-III

- **Management of Drug Abuse**
  Medical Management: Medication for treatment and to reduce withdrawal effects.

UNIT-IV

- Psychiatric Management: Counseling, Behavioral and Cognitive therapy.
- Social Management: Family, Group therapy and Environmental Intervention.

References:

1. Ahuja, Ram (2003), Social Problems in India, Rawat Publication, Jaipur.
2. Extent, Pattern and Trend of Drug Use in India, Ministry of Social Justice and Empowerment, Government of India, 2004.

3. Inciardi, J.A. 1981. The Drug Crime Connection. Beverly Hills: Sage Publications. 23
4. Jasjit Kaur Randhawa & Samreet Randhawa, "Drug Abuse-Problem, Management & Prevention", KLS, ISBN No. 978-81-936570-6-5, (2018).
5. Jasjit Kaur Randhawa & Samreet Randhawa, "Drug Abuse Problem, Management & Prevention", KLS, ISBN No. 978-81-936570-8-9, (2019).
6. Jasjit Kaur Randhawa & Samreet Randhawa, "Drug Abuse Problem, Management & Prevention" (Punjabi version) KLS, ISBN No. 978-81-936570-7-1, (2018).
7. Jasjit Kaur Randhawa, "Drug Abuse -Management & Prevention", KLS, ISBN No. 978-93- 81278-80-2, (2018).
8. Kapoor. T. (1985) Drug epidemic among Indian Youth, New Delhi: Mittal Pub.
9. Modi, Ishwar and Modi, Shalini (1997) Drugs: Addiction and Prevention, Jaipur: Rawat Publication.
10. National Household Survey of Alcohol and Drug abuse. (2003) New Delhi, Clinical Epidemiological Unit, All India Institute of Medical Sciences, 2004.
1. Rama Gandotra and Randhawa, J.K. 2018. Drug Abuse-Management and Prevention (Punjabi version) Kasturi Lal & Sons, Educational Publishers, Amritsar- Jalandhar.
11. Sain, Bhim 1991, Drug Addiction Alcoholism, Smoking obscenity New Delhi: Mittal Publications.
12. Sandhu, Ranvinder Singh, 2009, Drug Addiction in Punjab: A Sociological Study. Amritsar: Guru Nanak Dev University.
13. Singh, Chandra Paul 2000. Alcohol and Dependence among Industrial Workers: Delhi: Shipra.
14. Sussman, S and Ames, S.L. (2008). Drug Abuse: Concepts, Prevention and Cessation, Cambridge University Press.
15. World Drug Report 2010, United Nations office of Drug and Crime.
16. World Drug Report 2011, United Nations office of Drug and Crime.

COURSE OUTCOMES: The students will be able

CO-1.	To describe issues of cultural identity, ethnic background, age and gender in prevention, treatment and recovery.
CO-2.	To describe warning sign, symptoms, and the course of substance use disorders.
CO-3.	To describe principles and philosophy of prevention, treatment and recovery.
CO-4.	To describe current and evidenced-based approaches practiced in the field of addictions.

Semester–II
COURSE CODE: ZHZ-121
COURSE TITLE: BIOLOGY OF NON CHORDATES -II

Credit Hours/week: 4
Total hours: 60
Theory Paper: 37
Internal Assessment: 13
Periods/week: 6 **Total Marks: 50**

Instructions for the Paper Setters:

1. There will be a total of 9 questions of which five are to be attempted.
2. Question 1 will be compulsory and will be of 8 short answer type (one mark each)
3. The remaining 8 questions shall include two questions from each unit. Candidates shall be required to attempt 4 questions, one from each unit. Each question carries 8 marks. Preferably, the question should not be split into any sub-parts. In case of any splitting, it should not have more than two sub-parts.

COURSE OBJECTIVES: The paper aims to

1	Understand the animal kingdom.
2	Understand the origin and evolutionary relationships and taxonomic positions of phylum Arthropoda to Hemichordata.
3	Understand the general characteristics and body organization of animals belonging to Arthropoda to Hemichordata.

UNIT-I

- Arthropoda : Type study
  - *Palaemon malcolmsonii*
  - *Periplaneta Americana*
- Onychophora: (General characteristics and evolutionary significance)

UNIT-II

- Mollusca :Type study
  - *Pila*
  - *Unio*
- Significance of Torsion in Molluscs

UNIT-III

- Echinodermata :Type study
  - *Asterias* (Special reference to water vascular system)
- Study of Echinoderm larvae

UNIT-IV

- Hemichordata :
  - *Balanoglossus*
- Affinities of Hemichordates with non-chordates and chordates.

Books Recommended

1. Barnes, A., Invertebrate Zoology, Harcourt Publishers, International Company, 2001.

2. Chaudhry, S., Fundamental Invertebrate Zoology, S. Vikas & Co. Fatehpura, Jalandhar, 2003.
3. Dhami, P.S. and Dhami, J.K., Invertebrate Zoology, 5th ed., R. Chand & Co., New Delhi, 2004.
4. Kotpal, R.L., Modern Text Book of Zoology, Invertebrates, 10th ed., Rastogi Publications, Meerut, 2012.
5. Parker, T.J. and Haswell, W.A., Text book of Zoology, Invertebrates, 7th ed., Vol. I (eds. A.J. Marshall & W.D. Williams), CBS Publishers & Distributors, Delhi, 1992

COURSE OUTCOMES

CO-1.	The subject of non-chordates helps the students to know about the structural aspects of different animals
CO-2.	Students also gain knowledge about the taxonomies and evolutionary aspects of Zoology.
CO-3.	To study faunal diversity and learn to implement conservation measures to save biodiversity

Semester–II
COURSE CODE: BHZ-121
COURSE TITLE: CRYPTOGAMS -II

Credit Hours/week: 4
Total hours: 60
Theory Paper: 37
Internal Assessment: 13
Periods/week: 6 **Total Marks: 50**

Instructions for the Paper Setters:

1. There will be a total of 9 questions of which five are to be attempted.
2. Question 1 will be compulsory and will be of 8 short answer type (one mark each)
3. The remaining 8 questions shall include two questions from each unit. Candidates shall be required to attempt 4 questions, one from each unit. Each question carries 8 marks. Preferably, the question should not be split into any sub-parts. In case of any splitting, it should not have more than two sub-parts.

COURSE OBJECTIVES:

1	To acquaint students with basic concepts of diversity of Bryophytes and Pteridophytes
2	To study systematic Position, structure, and function of these plants.

Unit-I

- **Bryophytes:**
  - General characters, classification and economic importance
  - Bryophytes as amphibians of plant kingdom
  - Adaptive characters for land habitat displaying heterologous alternation of generations

Unit –II

- Study of morphology, anatomy, reproductive characters and life cycle of following:
  - **Hepaticopsida**: *Marchantia*
  - **Anthocerotopsida:** *Anthoceros*
  - **Bryopsida:***Funaria*

Unit- III

- **Pteridophytes:**
  - General characters, classification and economic importance
  - The first vascular plants
  - Stelar system in Pteridophytes
  - Heterospory and seed habit, apogamy and apospory

Unit - IV

- Study of morphology, anatomy, reproductive characters and life cycle of following:
  - **Psilophyta**: *Psilotum*
  - **Lycophyta***: Lycopodium*
  - **Sphenophyta:** *Equisetum*
  - **Pterophyta:***Pteris*

Suggested Readings:

1. Bryophyta. S. Chand & Company Ltd, New Delhi.

2. Parihar, N.S. 1991. Bryophytes. Central Book Depot, Allahabad.
3. Parihar, N.S. 1996. The Biology and Morphology of Pteridophytes. Central Book Depot, Allahabad.
4. Puri, P. 1980. Bryophyta. Atma Ram and Sons. Delhi.
5. Richardson, D.H.S. 1981 The Biology of Mosses. John Wiley and Sons, New York.
6. Sambamurty 2008 A Textbook of Bryophytes, Pteridophytes, Gymnosperms and Paleobotany. IKInternational Publishers.
7. Shaw, A.J. and Goffinet, B. (2000) Bryophyte Biology. Cambridge University Press.
8. Vander-Poorteri 2009 Introduction to Bryophytes. COP.
9. Vashishta, B. R., A. K. Sinha and Adarsha Kumar. 2008. Botany for Degree Students:
10. Vashishta, B. R., A. K. Sinha and V. P. Singh. 2008. Botany for Degree Students: Algae.S. Chand & Company Ltd, New Delhi.

COURSE OUTCOMES:

CO-1	This course makes student aware about the diversity in various life forms of plant kingdom
CO-2	It enables students to identify Bryophytes and Pteridophytes.
CO-3	It is the basis of advanced study in botany.
CO-4	It enables students to differentiate structural differences.

Semester-II
COURSE CODE: PHU-121
COURSE TITLE: MODERN PHYSICS-II
(Same for B.Sc. Hons. Botany BHB-203)

Credit Hours/week: 4
Total hours: 60
Theory Paper: 37
Internal Assessment: 13
Periods/week: 6 **Total Marks: 50**

Instructions for the Paper Setters:

1. There will be a total of 9 questions of which five are to be attempted.
2. Question 1 will be compulsory and will be of 8 short answer type (one mark each)
3. The remaining 8 questions shall include two questions from each unit. Candidates shall be required to attempt 4 questions, one from each unit. Each question carries 8 marks. Preferably, the question should not be split into any sub-parts. In case of any splitting, it should not have more than two sub-parts.

COURSE OBJECTIVES:

1	To gain theoretical knowledge and an in depth understanding of atoms, elementary particles, radioisotopes and radiation.
2	To understand various techniques related to radioisotope.

UNIT-I

Atomic Structure: Structure of Atom, Rutherford Scattering, Impact parameter, Distance of closest approach, Nucleus and its properties, The Bohr model of atom, Electron orbits, Energy levels and Hydrogen spectra, Bohr's correspondence principle, Atomic excitation, Franck Hertz experiment, Introduction to Lasers, Einstein's coefficients, He-Ne Laser.

UNIT-II

Radioisotopes and their Application: Radioactivity, Radioactive decay laws, Uranium and Carbon dating, α, β and γ decays and their properties, Radioisotopes, their production and separation, Uses of radioisotopes in medicine, agriculture and geology, Radiation doses and their units, Biological effects of radiation.

UNIT-III

Dual Nature of Matter and Radiation: Planck's quantum hypothesis, de Broglie's hypothesis, Electron diffraction experiments of Davisson and Germen, Wave group and particle velocities, Heisenberg's uncertainty principle, Principle of the electron microscope, Diffraction of X-rays from crystals, , Bragg's law of diffraction.

UNIT-IV

Elementary Particles: Classification of elementary particles and their properties, Antiparticles, Conservation laws (qualitative only), Uses of ionization chamber, G.M. Counter, Scintillation counter and Photographic emulsions as detectors, Origin and general characterization of cosmic rays (Primary and Secondary).

Reference Books:

1. Acosta, V. and Grown, C. L., Essentials of Modern Physics
2. Beiser, A. Concepts of Modern Physics
3. Duggal, B. D. and Chhabra, C. L., Fundamentals of Modern Physics

COURSE OUTCOMES: On completing the course, the students will be able to:

CO-1	Gain knowledge about atomic structure.
CO-2	Acquire in depth understanding of properties of light like atoms, elementary particles, radioisotopes and radiation.
CO-3	Understand the applications of various techniques related to radioisotope

Semester-II
COURSE CODE: MHZ-121
COURSE TITLE: BIO-MATHEMATICS-II

Credit Hours/week: 4
Total hours: 60
Theory Paper: 25
Practical: 12
Internal Assessment: 13
Periods/week: 4+2=6 **Total Marks: 50**

Instructions for the Paper Setters:

1. There will be a total of 9 questions of which five are to be attempted.
2. Question 1 will be compulsory and will be of 8 short answer type (one mark each)
3. The remaining 8 questions shall include two questions from each unit. Candidates shall be required to attempt 4 questions, one from each unit. Each question carries 8 marks. Preferably, the question should not be split into any sub-parts. In case of any splitting, it should not have more than two sub-parts.

COURSE OBJECTIVES:

1	To enable the students understand the basic concept of integration and differentiation.
2	To help the students to acquaint with the properties of Statistics.
3	To make the students aware about the Differential equation.
4	To correlate mathematical concepts with the Zoology.

Section -A

Integration as inverse of differentiation.Indefinite integral of standard forms.Integration by parts. Integration by substitution.
Integration using method of partial fractions (of algebraic rational functions).
Definite integral and application in finding the area under simple curves, especially lines , arcs of circles (in standard form only).

Section-B

Statistics: Concept of Probability, Random Experiments: outcomes, sample spaces (Set Representation), Additive and Multiplication law of Probability, Independent Events, Conditional probability. Permutations and Combinations, standard deviation and skewness.

Differential Equations: Definition, Solution of differential equations of first order and first degree (Variable separable, homogeneous equations, linear equations and equations reducible to the linear form). Applications of first order differential equations to biology.

Practicals:

Graphs of simple curves, circles and lines.
Experiments on probability theory, random experiments:- outcomes, sample space along with practical examples.

Recommended books:

1. Bailey, N.T.J.(1995): Statistical Methods in Biology, Cambridge University Press.
2. Gupta S.P. (2000): Statistical methods. Sultan Chand and Company, New Delhi.
3. Kapoor V.K. and Gupta S.C. (2000): Fundamentals of Mathematical Statistics. Sultan Chand and Company, New Delhi.
4. Shanti Naryan and P.K. Mittal(2011): Integral Calculus, S.Chand and Co. (New Delhi)

COURSE OUTCOMES:

CO-1	Understand the basic concept of integration and differentiation.
CO-2	To acquaint with the properties of Statistics.
CO-3	Solve the problems related to the Differential equation.
CO-4	Correlate mathematical concepts with the Zoology.

Semester – II
COURSE CODE: ZHZ-122
COURSE TITLE: ZOOLOGY LAB-II
(Related to BHZ-201)

Credit Hours/week: 4
Total hours: 60
Practical Paper: 37
Internal Assessment: 13
Periods/week: 6 **Total Marks: 50**

Important Note for Practical:

1. Candidates will be required to submit their original note books containing record of their laboratory work.
2. Wherever possible, students must be taken out for excursion to the field (Zoological gardens, sea shores, ponds and hill stations etc.) to study habitat and ecology of the animals.
3. As per the latest UGC guidelines the dissections may please be avoided. In no case an animal falling under the categories of wildlife protection act 1972 should be caught or dissected. The rules of the Prevention of cruelty to Animals act 1960 should be familiar to all who are teaching the Zoology courses.

COURSE OBJECTIVES: The paper aims to:

1	Understand the structure of invertebrates and classify them.
2	Understand the structure and function of digestive, reproductive & nervous system of Cockroach and Pila.
3	Understand the preparation of temporary slides.
4	Study permanent stained slides of animals from Arthropoda to Hemichordata.

PRACTICALS

I	Classification up to orders and study of the specimens mentioned against each phylum with ecological note and economic importance if any	
	Arthropoda:	*Palaemon, Lobster, Cancer, Sacculina, Eupagurus, Lepas, Balanus, Cyclops, Daphnia, Peripatus, Lepisma, Periplaneta, Schistocerca, Poecilocerus, Gryllus, Mantis, Cicada, Forficula*, Dragonfly, Termite queen, Cimex, Epilachna, *Polistes, Apis, Bombyx, Pediculus, Julus, Scolopendra, Palamnaeus, Aranea* and *Limulus, Cypris,*
	Mollusca:	*Anodonta, Mytilus, Pholas, Pecten, Haliotis, Aplysia, Doris, Limax, Pila, Sepia, Octopus, Nautilus, Chiton* and *Anodonta*
	Echinodermata:	*Asterias, Echinus, Cucumaria, Antedon, Ophiothrix*
II.	**Study of Permanent slides**	
	Arthropoda:	Trachea of insect, mouthparts of cockroach; Gill and statocyst of prawn
	Mollusca:	Glochidium larva, Veliger larva, radula and Osphradium of *Pila*
	Echinodermata:	T.S. of Star-fish arm and Bipinnaria larva
III.	**Study of systems through charts/models**	
	Peripaneta americana:	Digestive, Reproductive and Nervous system.
	Palaemon malcolmsonii:	Appendages and green gland.
	Pila:	Digestive and Nervous system

Guide lines for conduct of practical Examination:-

1.	Identify and classify the specimen upto order. Write a note on their habit, habitat, special features and economic importance.	15
2.	Identify the slides and give two reasons for identification.	10
3.	Identify the systems by using models.	6
4.	Assignment	3
5.	Viva-voce & Practical file.	6

COURSE OUTCOMES:

CO-1.	Have a knowledge about all the different phyla of invertebrates
CO-2.	Understand the comparative structure of invertebrates
CO-3.	Have an insight about the microscopic life
CO-4.	Differentiate invertebrates on the basis of morphological characteristics

Semester–II
COURSE CODE: BHZ-122
COURSE TITLE: BOTANY LAB-II (Cryptogams-II)

Credit Hours/week: 4
Total hours: 60
Theory Paper: 37
Internal Assessment: 13
Periods/week: 6 **Total Marks: 50**

COURSE OBJECTIVES: The paper aims to

1	Study the morphology of Bryophytes and Pteridophytes.
2	Study reproductive structures of Bryophytes and Pteridophytes.

1. Study of morphology, anatomy and reproductive structures of various genera of bryophytes:
   - **Hepaticopsida**: *Marchantia*
   - **Anthocerotopsida:** *Anthoceros*
   - **Bryopsida:***Funaria*
2. Study of morphology, anatomy and reproductive structures of various genera of Pteridophytes:
   - **Psilophyta**: *Psilotum*
   - **Lycophyta***: Lycopodium*
   - **Sphenophyta:** *Equisetum*
   - **Pterophyta:***Pteris*
3. Study of some Pteridophytes in their natural habitat.

COURSE OUTCOMES:

CO-1.	To understand the external structure of Bryophytes and Pteridophytes.
CO-2.	To study reproductive structures along with life cycle

Semester-II
COURSE CODE: PHU-122
COURSE TITLE: PHYSICS LAB-II
(Same for B.Sc. Hons. Botany BHB-209)

Credit Hours/week: 4
Total hours: 60
Theory Paper: 37
Internal Assessment: 13
Periods/week: 6 **Total Marks: 50**

General Guidelines for Practical Examination

I. The distribution of marks is as follows:
- i) One experiment- **09Marks**
- ii) Brief Theory- **3Marks**
- iii) Viva–Voce - **4Marks**
- iv) Record (Practical file)- **3Marks**

II. There will be one sessions of 3 hours duration. The paper will have one session and will consist of 8 experiments out of which an examinee will mark 6 experiments and one of these is to be allotted by the external examiner.

III. Number of candidates in a group for practical examination should not exceed 12.

IV. In a single group no experiment is to be allotted to more than three examinees in a group.

COURSE OBJECTIVES:

1	To acquaint and make the students understand the working principles of various instruments and relate them to the theoretical concepts of spectrum, ionization and radioactivity.
2	Gain precision in handling of spectrophotometer, potentiometer and GM counter and in making accurate physical measurements using experimental limits

1. To study the gas discharge spectrum of hydrogen.
2. To study the absorption spectra of iodine vapours.
3. To determine the ionization potential of mercury.
4. To study the photoelectric effect and determine the value of Planck's constant.
5. Study of variation of light intensity with distance using photovoltaic cell (Inverse Square Law).
6. To draw the plateau of a GM counter and find the operating voltage of GM tube.
7. To find the dead time of GM counter.
8. To study the absorption coefficient beta particles in aluminium using GM counter and find the absorption coefficients.
9. To study the statistical fluctuations and end point energy of beta particles using GM counter.
10. Measurement of reverse saturation current in pn junction diode at various temperatures and find the approximate value of the band gap.
11. To determine the wavelength of He-Ne laser using plane diffraction grating.

Reference Books :

1. Arora, C.L. Practical Physics, S. Chand & Co.
2. Bhatia, T.S., Kaur, Gursharan and Singh, Iqbal: Practical Physics Vol. II, Vishal Publications

COURSE OUTCOMES: On completing the course, the students will be able to:

CO1	Understand the working of basic spectometers.
CO2	Understand and differentiate between the different phenomenon related to absorbtion spectrum and gas discharge spectrum.
CO3	Gain precision in handling of GM counter.
CO4	Understand the operating principle of Plank's constant.

Semester – II
COURSE CODE: BCEN-1223
COURSE TITLE: COMMUNICATIVE ENGLISH-II

Credit Hours/week: 4
Total hours: 60
Theory Paper: 37
Internal Assessment: 13
Periods/week: 6 **Total Marks: 50**

Suggested paper pattern:-

1. Practical Question on Essay Writing with internal choice as prescribed in *The Written Word* (8 marks)
2. Short answer type questions from Unit 3 and 4 of *Making Connections : A Strategic Approach To Academic Reading* (12 marks)
3. Essay type question with internal choice from Unit 3 and 4 of *Making Connections: A strategic Approach to Academic Reading* (8 marks)
4. Question on note making from *The Written Word* (6 marks)
5. Theoretical question(s) based on the two chapters from the book *The Written Word* (6 marks)

COURSE OBJECTIVES:

1	To develop competence in oral and visual communication
2	To inculcate innovative and critical thinking among the students
3	To enable them to grasp the application of communication theories
4	To acquire the knowledge of latest technology related with communication skills
5	To provide knowledge of multifarious opportunities in the field of this programme

Course Contents

1. Reading and Comprehension Skills:

Students will be required to read and comprehend the essays in Unit 3 and 4 of the book *Making Connections: A Strategic Approach to Academic Reading* by Kenneth J. Pakenham, Second Edition. They will be required to answer the questions given after each essay.

2. Writing Skills

Students will be required to learn Essay writing, Report Writing and Letter Writing as in the book *The Written Word* by Vandana R. Singh, Oxford University Press, New Delhi.

COURSE OUTCOMES: After completion of the course, the students will be able to learn**:**

CO 1	Identify common errors in language and rectify them
CO 2	Develop and expand writing skills through controlled and guided activities
CO 3	Develop coherence, cohesion and competence in oral discourse through intelligible pronunciation
CO 4	Develop the ability to handle the interview process confidently and learn the subtle nuances of an effective group discourse
CO 5	Communicate contextually in specific and professional situations with courtesy

Semester – II
COURSE CODE: BHPB-1201
COURSE TITLE: PUNJABI-II ਲਾਜ਼ਮੀ ਪੰਜਾਬੀ

ਕ੍ਰੈਡਿਟ ਪ੍ਰਤੀ ਹਫਤਾ: 04
ਕੁੱਲ ਘੰਟੇ: 60
ਥਿਊਰੀ ਅੰਕ: 37
ਇੰਟਰਨਲ ਅਸੈੱਸਮੈਂਟ: 13
ਸਮਾਂ: 3 ਘੰਟੇ ਕੁੱਲ ਅੰਕ: 50

ਅੰਕ-ਵੰਡ ਅਤੇ ਪ੍ਰੀਖਿਅਕ ਲਈ ਹਦਾਇਤਾਂ

ਸਿਲੇਬਸ ਦੇ ਚਾਰ ਭਾਗ ਹਨ ਪਰ ਪ੍ਰਸ਼ਨ-ਪੱਤਰ ਦੇ ਪੰਜ ਭਾਗ ਹੋਣਗੇ। ਪਹਿਲੇ ਚਾਰ ਭਾਗਾਂ ਵਿਚ 02-02 ਪ੍ਰਸ਼ਨ ਪੁੱਛੇ ਜਾਣਗੇ। ਹਰੇਕ ਭਾਗ ਵਿਚੋਂ 01-01 ਪ੍ਰਸ਼ਨ ਕਰਨਾ ਲਾਜ਼ਮੀ ਹੋਵੇਗਾ। ਹਰੇਕ ਪ੍ਰਸ਼ਨ ਦੇ ਬਰਾਬਰ (08) ਅੰਕ ਹੋਣਗੇ। ਪ੍ਰਸ਼ਨ ਪੱਤਰ ਦੇ ਪੰਜਵੇਂ ਭਾਗ ਵਿਚ ਸਾਰੇ ਸਿਲੇਬਸ ਵਿਚੋਂ 01-01 ਅੰਕ ਦੇ ਛੇ ਪ੍ਰਸ਼ਨ ਪੁੱਛੇ ਜਾਣਗੇ, ਜਿਨ੍ਹਾਂ ਵਿਚੋਂ 05 ਪ੍ਰਸ਼ਨਾਂ ਦੇ ਉੱਤਰ ਦੇਣਾ ਲਾਜ਼ਮੀ ਹੋਵੇਗਾ। ਪੇਪਰ ਸੈੱਟ ਕਰਨ ਵਾਲਾ ਜੇਕਰ ਚਾਹੇ ਤਾਂ ਪ੍ਰਸ਼ਨਾਂ ਦੀ ਵੰਡ ਅੱਗੋਂ ਵੱਧ ਤੋਂ ਵੱਧ ਚਾਰ ਉਪ-ਪ੍ਰਸ਼ਨਾਂ ਵਿਚ ਕਰ ਸਕਦਾ ਹੈ।

ਨੋਟ: ਇੰਟਰਨਲ ਅਸੈੱਸਮੈਂਟ 13 ਅੰਕਾਂ ਦੀ ਹੈ, ਜੋ ਕਾਲਜ ਵੱਲੋਂ ਨਿਰਧਾਰਿਤ ਦਿਸ਼ਾ ਨਿਰਦੇਸ਼ਾਂ ਅਨੁਸਾਰ ਥਿਊਰੀ ਅੰਕਾਂ ਤੋਂ ਵੱਖਰੀ ਹੋਵੇਗੀ। ਇਸ ਪੇਪਰ ਦੇ ਕੁੱਲ ਅੰਕ 37+13 = 50 ਹਨ।

ਕੋਰਸ ਦਾ ਉਦੇਸ਼ COURSE OBJECTIVE

- ਵਿਦਿਆਰਥੀਆਂ ਵਿਚ ਸਾਹਿਤਕ ਰੁਚੀਆਂ ਪੈਦਾ ਕਰਨਾ।
- ਆਲੋਚਨਾਤਮਕ ਰੁਚੀਆਂ ਨੂੰ ਵਿਕਸਤ ਕਰਨਾ।
- ਭਾਸ਼ਾਈ ਗਿਆਨ ਵਿਚ ਵਾਧਾ ਕਰਨਾ।

ਪਾਠ-ਕ੍ਰਮ

ਭਾਗ-ਪਹਿਲਾ

ਸਾਹਿਤ ਦੇ ਰੰਗ, ਡਾ. ਮਹਿਲ ਸਿੰਘ (ਸੰਪਾ.), ਰਵੀ ਸਾਹਿਤ ਪ੍ਰਕਾਸ਼ਨ, ਅੰਮ੍ਰਿਤਸਰ।
ਭਾਗ ਦੂਜਾ - ਵਾਰਤਕ ਅਤੇ ਰੇਖਾ-ਚਿੱਤਰ, ਡਾ. ਪਰਮਿੰਦਰ ਸਿੰਘ, ਡਾ. ਭੁਪਿੰਦਰ ਸਿੰਘ ਅਤੇ ਡਾ. ਕੁਲਦੀਪ ਸਿੰਘ ਢਿੱਲੋਂ (ਸਹਿ ਸੰਪਾ.)
(ਵਾਰਤਕ ਭਾਗ ਵਿਚੋਂ ਸਾਰ/ਵਿਸ਼ਾ-ਵਸਤੂ। ਰੇਖਾ-ਚਿੱਤਰ ਭਾਗ ਵਿਚੋਂ ਸਾਰ/ਨਾਇਕ ਬਿੰਬ)

ਭਾਗ-ਦੂਜਾ

ਸੰਸਾਰ ਦੀਆਂ ਪ੍ਰਸਿੱਧ ਹਸਤੀਆਂ
ਪ੍ਰਿੰ. ਤੇਜਾ ਸਿੰਘ ਅਤੇ ਹਰਨਾਮ ਸਿੰਘ ਸ਼ਾਨ (ਸੰਪਾ.), ਪੰਜਾਬੀ ਸਾਹਿਤ ਪ੍ਰਕਾਸ਼ਨ, ਅੰਮ੍ਰਿਤਸਰ।
(ਜੀਵਨੀ 10 ਤੋਂ 18 ਤੱਕ, ਜੀਵਨੀ ਦਾ ਵਿਸ਼ਾ-ਵਸਤੂ/ਸਾਰ/ਨਾਇਕ ਬਿੰਬ)

ਭਾਗ-ਤੀਜਾ

(ੳ) ਦਫ਼ਤਰੀ ਚਿੱਠੀ ਪੱਤਰ
(ਅ) ਅਖਾਣ ਅਤੇ ਮੁਹਾਵਰੇ

ਭਾਗ-ਚੌਥਾ

(ੳ) ਸ਼ਬਦ-ਬਣਤਰ ਅਤੇ ਸ਼ਬਦ-ਰਚਨਾ: ਪਰਿਭਾਸ਼ਾ ਅਤੇ ਮੁੱਢਲੇ ਸੰਕਲਪ
(ਅ) ਸ਼ਬਦ-ਸ਼੍ਰੇਣੀਆਂ

ਪਾਠ-ਕ੍ਰਮ ਨਤੀਜੇ COURSE OUTCOMES (COs)

- ਵਿਦਿਆਰਥੀ ਦੀ ਸੋਚ-ਸਮਝ ਵਿਕਸਤ ਹੋਵੇਗੀ।
- ਵਿਦਿਆਰਥੀ ਵਿਚ ਸਾਹਿਤਕ ਰੁਚੀਆਂ ਪ੍ਰਫਲਿੱਤ ਹੋਣਗੀਆਂ।
- ਵਿਦਿਆਰਥੀ ਵਿਚ ਸਾਹਿਤ ਸਿਰਜਣਾ ਦੀ ਸੰਭਵਨਾ ਵਧੇਗੀ।
- ਵਿਦਿਆਰਥੀ ਸੰਬੰਧਿਤ ਵਿਸ਼ੇ ਦਾ ਗਹਿਨ ਅਧਿਐਨ ਕਰਨ ਦੇ ਸੁਯੋਗ ਹੋਵੇਗਾ।
- ਵਿਦਿਆਰਥੀ ਭਾਸ਼ਾਈ ਬਣਤਰ ਤੋਂ ਜਾਣੂ ਹੋਵੇਗਾ।

Semester – II
COURSE CODE: BPBI-1202
COURSE TITLE: BASIC PUNJABI-II ਮੁਢਲੀ ਪੰਜਾਬੀ
(In Lieu of Compulsory Punjabi)

ਕ੍ਰੈਡਿਟ ਪ੍ਰਤੀ ਹਫਤਾ: 04
ਕੁੱਲ ਘੰਟੇ: 60
ਥਿਊਰੀ ਅੰਕ: 37
ਇੰਟਰਨਲ ਅਸੈੱਸਮੈਂਟ: 13
ਸਮਾਂ: 3 ਘੰਟੇ ਕੁੱਲ ਅੰਕ: 50

ਅੰਕ-ਵੰਡ ਅਤੇ ਪ੍ਰੀਖਿਅਕ ਲਈ ਹਦਾਇਤਾਂ

ਭਾਗ ਪਹਿਲਾ ਵਿਚੋਂ ਚਾਰ ਪ੍ਰਸ਼ਨ ਪੁੱਛੇ ਜਾਣਗੇ ਜਿਨ੍ਹਾਂ ਵਿਚੋਂ ਤਿੰਨ ਪ੍ਰਸ਼ਨਾਂ ਦਾ ਉੱਤਰ ਦੇਣਾ ਲਾਜ਼ਮੀ ਹੈ। ਹਰ ਪ੍ਰਸ਼ਨ ਦੇ ਚਾਰ-ਚਾਰ ਅੰਕ ਹਨ। ਭਾਗ ਦੂਸਰਾ ਵਿਚੋਂ ਦੋ-ਦੋ ਅੰਕ ਦੇ ਪੰਜ ਪ੍ਰਸ਼ਨ ਪੁੱਛੇ ਜਾਣਗੇ। ਸਾਰੇ ਪ੍ਰਸ਼ਨ ਲਾਜ਼ਮੀ ਹਨ। ਭਾਗ ਤੀਸਰਾ ਵਿਚੋਂ ਚਾਰ ਪ੍ਰਸ਼ਨ ਪੁੱਛੇ ਜਾਣਗੇ ਜਿਨ੍ਹਾਂ ਵਿਚੋਂ ਦੋ ਪ੍ਰਸ਼ਨ ਹੱਲ ਕਰਨੇ ਲਾਜ਼ਮੀ ਹਨ। ਭਾਗ ਚੌਥਾ ਵਿਚੋਂ ਦੋ ਪ੍ਰਸ਼ਨ ਪੁੱਛੇ ਜਾਣਗੇ ਜਿਨ੍ਹਾਂ ਵਿਚੋਂ ਇਕ ਪ੍ਰਸ਼ਨ ਹੱਲ ਕਰਨਾ ਹੋਵੇਗਾ।
ਨੋਟ: ਇੰਟਰਨਲ ਅਸੈੱਸਮੈਂਟ 13 ਅੰਕਾਂ ਦੀ ਹੈ, ਜੋ ਕਾਲਜ ਵੱਲੋਂ ਨਿਰਧਾਰਿਤ ਦਿਸ਼ਾ ਨਿਰਦੇਸ਼ਾਂ ਅਨੁਸਾਰ ਥਿਊਰੀ ਅੰਕਾਂ ਤੋਂ ਵੱਖਰੀ ਹੋਵੇਗੀ। ਇਸ ਪੇਪਰ ਦੇ ਕੁਲ ਅੰਕ 37+13 = 50 ਹਨ।

ਕੋਰਸ ਦਾ ਉਦੇਸ਼ COURSE OBJECTIVE

- ਵਿਦਿਆਰਥੀ ਅੰਦਰ ਪੰਜਾਬੀ ਭਾਸ਼ਾ ਦੀ ਸਮਝ ਵਿਕਸਤ ਕਰਨਾ।
- ਪੰਜਾਬੀ ਭਾਸ਼ਾ ਦੇ ਵਿਆਕਰਨਕ ਪ੍ਰਬੰਧ ਸੰਬੰਧੀ ਗਿਆਨ ਕਰਾਉਣਾ।
- ਸਿਖਲਾਈ ਤੇ ਅਭਿਆਸ ਦੁਆਰਾ ਪੰਜਾਬੀ ਭਾਸ਼ਾ 'ਤੇ ਪਕੜ ਵਧਾਉਣਾ।

ਪਾਠ-ਕ੍ਰਮ

ਭਾਗ-ਪਹਿਲਾ

ਪੰਜਾਬੀ ਸ਼ਬਦ-ਬਣਤਰ:

ਧਾਤੂ, ਵਧੇਤਰ (ਅਗੇਤਰ, ਮਧੇਤਰ, ਪਿਛੇਤਰ), ਪੰਜਾਬੀ ਕੋਸ਼ਗਤ ਸ਼ਬਦ ਅਤੇ ਵਿਆਕਰਨਕ ਸ਼ਬਦ

ਭਾਗ-ਦੂਜਾ

ਪੰਜਾਬੀ ਸ਼ਬਦ-ਪ੍ਰਕਾਰ:

(ੳ) ਸੰਯੁਕਤ ਸ਼ਬਦ, ਸਮਾਸੀ ਸ਼ਬਦ, ਦੋਜਾਤੀ ਸ਼ਬਦ, ਦੋਹਰੇ/ਦੁਹਰੁਕਤੀ ਸ਼ਬਦ ਅਤੇ ਮਿਸ਼ਰਤ ਸ਼ਬਦ
(ਅ) ਸਿਖਲਾਈ ਤੇ ਅਭਿਆਸ

ਭਾਗ-ਤੀਜਾ

ਪੰਜਾਬੀ ਸ਼ਬਦ-ਰਚਨਾ:

ਇਕ-ਵਚਨ/ਬਹੁ-ਵਚਨ, ਲਿੰਗ-ਪੁਲਿੰਗ, ਬਹੁਅਰਥਕ ਸ਼ਬਦ, ਸਮਾਨਅਰਥਕ ਸ਼ਬਦ, ਬਹੁਤੇ ਸ਼ਬਦਾਂ ਲਈ ਇਕ ਸ਼ਬਦ, ਸ਼ਬਦ ਜੁੱਟ, ਵਿਰੋਧਅਰਥਕ ਸ਼ਬਦ, ਸਮਨਾਮੀ ਸ਼ਬਦ

ਭਾਗ-ਚੌਥਾ

ਨਿੱਤ ਵਰਤੋਂ ਦੀ ਪੰਜਾਬੀ ਸ਼ਬਦਾਵਲੀ

ਖਾਣ-ਪੀਣ, ਸਾਕਾਦਾਰੀ, ਰੁੱਤਾਂ, ਮਹੀਨਿਆਂ, ਗਿਣਤੀ, ਮੌਸਮ, ਬਾਜ਼ਾਰ, ਵਪਾਰ, ਧੰਦਿਆਂ ਨਾਲ ਸੰਬੰਧਿਤ

ਪਾਠ-ਕ੍ਰਮ ਨਤੀਜੇ COURSE OUTCOMES (COs)

- ਵਿਦਿਆਰਥੀਆਂ ਦੀ ਨਿੱਤ ਵਰਤੋਂ ਦੀ ਪੰਜਾਬੀ ਸ਼ਬਦਾਵਲੀ ਬਾਰੇ ਸਮਝ ਹੋਰ ਵਿਕਸਿਤ ਹੋਵੇਗੀ।
- ਉਹ ਪੰਜਾਬੀ ਸ਼ਬਦ-ਬਣਤਰ ਦੀ ਜਾਣਕਾਰੀ ਹਾਸਿਲ ਕਰਕੇ ਭਾਸ਼ਾਈ ਗਿਆਨ ਨੂੰ ਵਿਕਸਿਤ ਕਰਨਗੇ।
- ਪੰਜਾਬੀ ਸ਼ਬਦ-ਰਚਨਾ ਸੰਬੰਧੀ ਜਾਣਕਾਰੀ ਉਨ੍ਹਾਂ ਦੇ ਗਿਆਨ ਵਿਚ ਵਾਧਾ ਕਰੇਗੀ।

Semester – II

COURSE CODE: BPHC-1204

COURSE TITLE: PUNJAB HISTORY & CULTURE (C 321 TO 1000 A.D.)

(Special Paper in lieu of Punjabi compulsory)

(For those students who are not domicile of Punjab)

Credit Hours (per week): 04

Total Hours: 60

Time: 3 Hours **Total. Marks: 50**

Theory: 37

Internal Assessment: 13

Instructions for the Paper Setters:

The question paper consists of five units: I, II, III, IV and V. Units I, II, III and IV will have two questions each. Each question carries 8 marks. The students are to attempt one question from each unit approximately in 800 words. Unit-V consists of 7 short answer type questions to be set from the entire syllabus. Students are to attempt any 5 questions in about 20 words each. Each question carries 1 mark.

Note: **The examiner is to set the question paper in two languages: English & Hindi.**

COURSE OBJECTIVES: The main objective of this course is to educate the students who are not domicile of the Punjab about the history and culture of the Ancient Punjab. It is to provide them knowledge about the social, economic, religious, cultural and political life of the people of the Punjab during the rule of various dynasties such as The Mauryans, The Kushans, The Guptas, The Vardhanas and other ancient ruling dynasties of the period under study.

Unit-I

1. The Punjab under Chandragupta Maurya and Ashoka.
2. The Kushans and their Contribution to the Punjab.

Unit-II

3. The Punjab under the Gupta Emperors.
4. The Punjab under the Vardhana Emperors

Unit-III

5. Political Developments 7th Century to 1000 A.D.
6. Socio-cultural History of Punjab from 7th Century to 1000 A.D.

Unit-IV

7. Development of languages and Literature.
8. Development of art & Architecture.

Suggested Readings:-

1. L. Joshi (ed*), History and Culture of the Punjab*, Part-I, Patiala, 1989 (3rd edition)
2. L.M. Joshi and Fauja Singh (ed),*History of Punjab*, Vol.I, Patiala 1977.
3. Budha Parkash,*Glimpses of Ancient Punjab*, Patiala, 1983.
4. B.N. Sharma, *Life in Northern India*, Delhi. 1966.

COURSE OUTCOMES:

After completion of the course, the students will be able to learn:

CO 1	The history and culture of the Punjab in Ancient Period.
CO 2	Social, economic, religious, cultural and political life of Ancient Indian dynasties.
CO 3	Political developments from 7th century to1000AD.
CO 4	Socio cultural history of the Punjab from 7th century to1000AD. CO
CO 5	Language, literature, art and architecture of Ancient Punjab.

Semester – II
Course Code: ZDA-121
Course Title-DRUG ABUSE: PROBLEM, MANAGEMENT AND PREVENTION
DRUG ABUSE: MANAGEMENT AND PREVENTION
(Compulsory for all Under Graduate Classes)

Credit Hours (per week):
1.5 hrs.
Total Hours: 22.5 hrs.
Max. Marks: 50

Instructions for the Paper Setters:
Section–A: (15 Marks): It will consist of five short answer type questions. Candidates will be required to attempt three questions, each question carrying 05 marks. Answer to any of the questions should not exceed two pages.
Section–B: (20 Marks) It will consist of four essay type questions. Candidates will be required to attempt two questions, each question carrying 10 marks. Answer to any of the questions should not exceed four pages.
Section–C: (15 Marks) It will consist of two questions. Candidate will be required to attempt one question only. Answer to the question should not exceed 5 pages.

COURSE OBJECTIVES: The course aim is to

CO-1.	Describe the role of family in the prevention of drug abuse.
CO-2.	Describe the role of school and teachers in the prevention of drug abuse.
CO-3.	Emphasize the role of media and educational and awareness program.
CO-4.	Provide knowhow about various legislation and Acts against drug abuse.

UNIT-I

- **Prevention of Drug abuse**
  Role of family: Parent child relationship, Family support, Supervision, Shaping values, Active scrutiny.

UNIT-II

- **School:** Counseling, Teacher as role-model, Parent-Teacher-Health Professional Coordination, Random testing on students.

UNIT-III

- **Controlling Drug Abuse**
  Media: Restraint on advertisements of drugs, advertisements on bad effects of drugs, Publicity and media, Campaigns against drug abuse, Educational and Awareness Program

UNIT-IV

- **Legislation:** NDPS Act, Statutory warnings, Policing of Borders, Checking Supply/Smuggling of Drugs, Strict enforcement of laws, Time bound trials.

References:

2. Extent, Pattern and Trend of Drug Use in India, Ministry of Social Justice and Empowerment, Government of India, 2004.
3. Gandotra, R. and Randhawa, J.K. 2018. Drug Abuse-Management and Prevention (Punjabi version) Kasturi Lal & Sons, Educational Publishers, Amritsar- Jalandhar.
4. Inciardi, J.A. 1981. The Drug Crime Connection. Beverly Hills: Sage Publications.

5. Modi, Ishwar and Modi, Shalini (1997) Drugs: Addiction and Prevention, Jaipur: Rawat Publication.
6. Randhawa, J.K. and Randhawa, Samreet 2018. Drug Abuse-Management and Prevention. Kasturi Lal & Sons, Educational Publishers, Amritsar- Jalandhar.
7. Sain, Bhim 1991, Drug Addiction Alcoholism, Smoking obscenity New Delhi: Mittal Publications.
8. Sandhu, Ranvinder Singh, 2009, Drug Addiction in Punjab: A Sociological Study. Amritsar: Guru Nanak Dev University.
9. Singh, Chandra Paul 2000. Alcohol and Dependence among Industrial Workers: Delhi: Shipra. 9. World Drug Report 2011, United Nations office of Drug and Crime.
10. World Drug Report 2010, United Nations office of Drug and Crime

COURSE OUTCOMES: The students will be able to

CO-1.	Understand the importance of family and its role in drug abuse prevention.
CO-2.	Understand the role of support system especially in schools and inter-relationships between students, parents and teachers.
CO-3.	Understand impact of media on substance abuse prevention.
CO-4.	Understand the role of awareness drives, campaigns etc. in drug abuse management.
CO-5	Learn about the Legislations and Acts governing drug trafficking and Abuse in India.