SURI VIDYASAGAR COLLEGE
(Govt. Sponsored & Constituent college of the University of Burdwan)
SURI, BIRBHUM, PIN – 731101, Ph. No. – 03462-255504
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This Institution is Ragging Free

University prescribed curriculum which includes in its different segments and components cross-cutting issue of

Professional Ethics and Human values

The University of Burdwan

Syllabus for 3- Yr. B.Com.(Hons.)

Under Semester with

Choice Based Credit System

w.e.f. 2017-2018 onward

Structure of B. Com (Hons.) Syllabus under CBCS

Semester I		
Paper code	**Subject**	**Nature**
1.1	Environmental Studies	(AECC-1)
1.2 CH	Financial Accounting-I	(CC-1)
1.3 CH	Business Management	(CC-2)
1.4 CH	Micro Economics	(GE-1)
Semester II		
2.1	Communicative English/MIL	(AECC-2)
2.2 CH	Cost Accounting	(CC-3)
2.3 CH	Business Law	(CC-4)
2.4 CH	Macro Economics	(GE-2)
Semester III		
3.1 CH	Corporate Laws	(CC-5)
3.2 CH	Income Tax Law and Practice	(CC-6)
3.3 CH	Financial Accounting-II	(CC-7)
3.4 CH	E-Commerce	(SEC-1)
3.5 CH	Indian Economy	(GE-3)
Semester IV		
4.1 CH	Business Mathematics and Statistics	(GE-4)
4.2 CH	Fundamentals of Marketing Management	(CC-8)
4.3 CH	Computer Applications in Business	(CC-9)
4.4 CH	Entrepreneurship	(SEC-2)
4.5 CH	Fundamentals of Human Resource Management	(CC-10)
Semester V		
5.1 CH	Financial Accounting-III	(CC-11)
5.2 CH	Auditing	(CC-12)
Any one of the following		(DSE-1)
5.3.1 CH	Management Accounting	
5.3.2 CH	Fundamentals of Banking and Insurance	
Any one of the following		(DSE-2)
5.4.1 CH	Indian Financial System	
5.4.2 CH	Advertising	
Semester VI		
6.1 CH	Fundamentals of Financial Management	(CC-13)
6.2 CH	Indirect Tax Law	(CC-14)
Any one of the following		(DSE-3)
6.3.1 CH	Fundamentals of Investment	
6.3.2 CH	Business Tax Procedures and Management	
Any one of the following		(DSE-4)
6.4.1 CH	International Business	
6.4.2 CH	Project Work	

CC - 2: BUSINESS MANAGEMENT

Marks: 75 **Credit : 6** **Lectures: 65**

Objective: The objective of the course is to provide the student with an understanding of basic management concepts, principles and practices.

CONTENTS

Unit 1: Introduction **Lectures: 15**

a. Concept of Management: Need for Study, Managerial Functions – An overview; Co-ordination: Essence of Managership

b. Evolution of the Management Thought, Classical Approach – Taylor, Fayol, Neo-Classical and Human Relations Approaches, Behavioural Approach, Systems Approach, Contingency Approach, Concepts of MBO.

Unit 2: Planning and Strategic Planning **Lectures: 15**

a. Planning - Types of Plan – An overview to highlight the differences

b.Strategic Planning– Concept, process, Importance and limitations

c. Environmental Analysis and diagnosis (internal and external environment) – Definition, Importance and Techniques (Concepts of SWOT/TOWS/WOTS-UP, Competitor Analysis),

Business environment; Concept and Components

d. Decision-making – concept, importance; Committee and Group Decision-making Process.

Unit 3: Organising **Lectures: 13**

Concept and process of organising – An overview, Span of management, Different types of authority (line, staff and functional), Decentralisation, Delegation of authority, Formal and Informal Structure; Principles of Organising.

Unit 4: Staffing and Leading **Lectures: 12**

a. Staffing: Concept, Process

b. Motivation: Concept, Importance, Motivation theories - Maslow's Need-Hierarchy Theory; Hertzberg's Two-factor Theory.

c. Leadership*:* Concept, Importance, Theories of Leadership (Likert's scale theory, Blake and Mouten's Managerial Grid theory, Trait Theory).

Unit 5: Control **Lectures: 10**

Control - Concept, Process, Limitations, Principles of Effective Control, Major Techniques of Control - Ratio Analysis, ROI, Budgetary Control, EVA, PERT/CPM (Concept only)

Suggested Readings:

1. Harold Koontz and Heinz Weihrich, *Essentials of Management: An International and Leadership Perspective*, McGraw Hill Education.
2. Stephen P Robbins and Madhushree Nanda Agrawal, *Fundamentals of Management: EssentialConcepts and Applications*, Pearson Education.
3. George Terry, *Principles of Management*, Richard D. Irwin
4. Newman, Summer, and Gilbert, *Management*, PHI
5. James H. Donnelly, *Fundamentals of Management,* Pearson Education.
6. B.P. Singh and A.K.Singh, *Essentials of Management*, Excel Books
7. Griffin, *Management Principles and Application,* Cengage Learning
8. Robert Kreitner, *Management Theory and Application,* Cengage Learning
9. TN Chhabra, *Management Concepts and Practice*,DhanpatRai& Co. (Pvt. Ltd.)
10. Stoner, Management, Pearson

Note: Latest edition of text books may be used.

THE UNIVERSITY OF BURDWAN

Burdwan-713104, West Bengal

SYLLABUS FOR B.A. HONOURS
IN
SANSKRIT
UNDER SEMESTER WITH CBCS
(Effective from 2017- 18)

Semester -I

Course Code	Course Title	Course Type	L.T. P	Credit	Marks
CC-1	**Classical Sanskrit Literature(Poetry)**	**Core Course-1**	**5-1-0**	**6**	**75**
	Section-A (20 classes) (I)Raghuvaṁśa: Canto-XIV (Verses: 31-68)				
	Section-B (40 classes) (I) Kirātārjunīya - Canto I (1-25 Verses) (II) The History of Sanskrit Literature. (Aśvaghoṣa,Kālidāsa,Bhāravi,Māgha,Bhaṭṭi,Śrīharṣa)				
CC-2	**Critical Survey of Sanskrit Literature**	**Core Course-2**	**5-1-0**	**6**	**75**
	Section-A (30 classes) (I)Vaidika Sāhitya (II)Rāmāyaṇa (III)Mahābhārata				
	Section-B (30 classes) (I) Purāṇa (II) The History of Sanskrit Grammar. (III) The History of Indian Philosophy.				
GE-1	**Interdisciplinary(Any Discipline other than Sanskrit) (60 classes)**	**Generic Elective Course**	**5-1-0**	**6**	**75**
AECC-1	**ENVS**	**AECC**	**4-0-0**	**4**	**100**
		Total		**22**	**325**

Semester -II

Course Code	Course Title	Course Type	L.T.P	Credit	Marks
CC -3	**Classical Sanskrit Literature(Prose)**	**Core Course**	**5-1-0**	**6**	**75**
	Section-A (15 classes) **Śukanāsopadeśa-** Kādambarī (As in Sanskrit Pāṭhamālā, B.U. (evaṁ samatikrāmatsu ----- bhrātara ucchedyāḥ)				
	Section-B (15 classes) **Daśakumāracarita-(Rājavāhanacarita)---** As in Sanskrit Pāṭhamālā ,BU				
	Section-C (30 classes) (I)**The History of Sanskrit Literature (Prose).** (Subandhu,Daṇḍin,Bāṇabhaṭṭa) (II) **The History of Sanskrit Literature (Fables)** (Pañcatantra,Hitopadeśa,Vetālapañcaviṁśati,Siṁhāsanadvātriṁśikā, Puruṣaparīkṣā)				
CC-4	**Self Management in the Gītā**	**Core Course**	**5-1-0**	**6**	**75**
	Section-A (35 classses) **Śrīmadbhagavadgītā** (Adhyāya-4th)(Whole)				
	Section-B (25 classes) **Selected ślokas from the Gītā** 1.Meditation -Adhyāya-VI (10-26) II. Diet Control-Adhyāya-XVII (8-10) III. Rajoguṇa- Adhyāya III (36-40)				
GE -2	**Interdisciplinary (Any Discipline other than Sanskrit) (60 classes)**	**Generic Elective Course**	**5-1-0**	**6**	**75**
AECC-2	**Communicative English/MIL**		**2-0-0**	**2**	**50**
		Total		**20**	**275**

Semester -III

Course Code	Course Title	Course Type	L.T.P	Credit	MarkS
CC -5	**Classical Sanskrit Literature (Drāmā)**	**Core Course**	**5-1-0**	**6**	**75**
	Section-A (40 classes) (I)Abhijñānaśakuntala (I-V)				
	Section-B (20 classes) (I)The History of Sanskrit Literature (Drāmā) (Bhāsa, Kālidāsa, Śūdraka, Viśākhadatta, Śrīharṣa, Bhavabhūti, Bhaṭṭanārāyaṇa)				
CC-6	**Poetics and Literary Criticism**	**Core Course**	**5-1-0**	**6**	**75**
	Section-A (35 classes) **(I) Vāmana's kāvyālaṁkārasūtravṛtti –** First Adhikaraṇa-- (Chapters –I, II & III) **(II) Metrics** – A General Concept of Sanskrit Metres and the definitions of the following Meters --- (Indravajrā Upendravajrā,Upajāti, Vaṁśasthavila,Vasantatilaka, Mālinī & Mandākrāntā)				
	Section-B (25 classes) **(I) Sāhityadarpaṇa –Chapter-X** (Sleṣa, Upamā, Rūpaka, Utprekṣā, Atiśayokti, Dṛṣṭānta, Nidarśanā & Arthāntaranyāsa)				
CC-7	**Indian Social Institution and Polity**	**Core Course**	**5-1-0**	**6**	**75**
	Section-A **(35 classes)** **Manusaṃhitā** –Chapter-VII State Politics-(1-15), Upāyacatuṣṭaya-(106-110) &Sāḍguṇya –(161-170)				
	Section-B. Arthaśāstra- (Dūtapraṇidhi) **(25 classes)**				
GE-3	**Interdisciplinary (Any Discipline other than Sanskrit) (60 classes)**	**Generic Elective Course**	**5-1-0**	**6**	**75**
SEC-1	**Basic Sanskrit**				
	Section-A (10 classes) Brāhmī Script Writing	**AEC (Skill Based)**	**2-0-0**	**2**	**50**
	Section-B (7 classes) Declensions (a-kārānta,i-kārānta, u-kārānta and ṛ-kārānta - Masculine,Feminine &Neuter, Pronouns & Number)				
	Section-C (7 classes) **Conjugations** – (Bhū, Paṭh,Gam, Dṛś,Sev,Labh,Pac,Vṛt, Kṛ,Dā, Śru, Jñā - laṭ, loṭ laṅ,liṅ & lṛṭ)				
	Section-D (6 classes) Translation				

	Saction-E(10 classes) Brahmadatta-karkaṭa-kathā-(Aparīkṣitakāraka) –from Pañcatantra				
	OR				
	Ethical & Moral Issues in Sanskrit (40 classes)				
	I. **Hitopadeśa**-Mitralābha(up to verse No -50) II. **Pañcatantra**—Mitrabheda-katha-2 Gomāyadundubhikathā				
		Total		**26**	**350**

Semester-IV

Course Code	Course Title	Course Type	L.T.P	Credit	MarkS
CC -8	**Indian Epigraphy and Chronology**	**Core Course**	**5-1-0**	**6**	**75**
	Section-A (30 classes) (I) Epigraphy-The History of Epigraphical study in India.				
	Section-B (30 classes) Silālekha- (a)Rudradāmanśilālipi (b)Meharauli Iron Pillar Inscription of Candra				
CC-9	**Modern Sanskrit Literature**	**Core Course**	**5-1-0**	**6**	**75**
	Section-A (30 classes) Survey of Modern Sanskrit Literature in Bengal				
	Section-B (30 classes) (I)Saṃskṛtoddharaṇa – Sukhamaya Mukhopadhyaya (II)Cipiṭakacarvaṇa- Śrījiva Nyāyatīrtha				
CC-10	**Sanskrit and World Literature**	**Core Course**	**5-1-0**	**6**	**75**
	Section-A (60 classes) (I) Sanskrit Studies Across the World - William Jones, Charles Wilkins, H.Wilson, Max Muller, J.G.Buhler, Sri Aurobindo, Dayānanda Sarasvatī, Haridāsa Siddhāntavāgīśa,Śrījīva Nyāyatīrtha,Nityānada Smṛtitīrtha, Kshitish Chandra Chatterji, Roma Chaudhuri, Pañcānana Tarkaratna & Ramaranjan Mukherji)				
GE-4	**Interdisciplinary(Any Discipline other than Sanskrit) (60 classes)**	**Generic Elective Course**	**5-1-0**	**6**	**75**
SEC-2	**Spoken Sanskrit**	**AEC (Skill Based)**	**2-0-0**	**2**	**50**
	A. Spoken Sanskrit (**20 classes**)				

	B. Evolution of Bengali Scripts**(10 classes)** C. Letter writing in Sanskrit. (**10 classes**)				
	OR				
	Political Thought in Sanskrit Literature				
	I.Mudrārākṣasa –(Acts-I & II) **(20 classes**) II. Arthaśāstra- Śāsanādhikāra**(20 cl** asses)				
		Total		**26**	**350**

Semester - V

Course Code	Course Title	Course Type	L.T.P	Credit	MarkS
CC -11	**Vedic Literature**	**Core Course**	**5-1-0**	**6**	**75**
	Section-A (40 classes) Ṛgvedasaṁhitā –(Agnisūkta-(2/6) , Indrasūkta-(2/12), Akṣasūkta-(10/34) , Devīsūkta-(10/125)				
	Section-B (10 classes) Declension of a-stems,Vedic Subjunctive, Vedic Infinitive,The Vedic Accent & Pada-pāṭha				
	Section-C (10 classes) Iśopaniṣad - Whole				
CC-12	**Sanskrit Grammar**	**Core Course**	**5-1-0**	**6**	**75**
	Section-A (20 classes) The Concept of the following Saṃjñās: Sūtra,Vārtika,Bhāṣya,Karmapravacanīya,Nipāta,Gati, Upasarga,Guṇa,Vṛddhi,Ṭi,Ghi,Ghu,Nadī,Upadhā and Samprasāraṇa.				
	Section- B (40 classes) **Samāsa** - (Selected Sūtras upto Dvandva Compound)				
DSE-1	**Dramaturgy -- Sāhityadarpaṇa - Chapter- VI (60 classes)** **(**Rūpaka,Nāndī,Vṛttis(withoutAṃgas),Prastāvanā,Arthaprakṛti, Arthopakṣepaka,Patākāsthānakas,Kārya,Avasthā, Sandhi(without Aṃgas) & Nāṭikā	**Discipline Specific Elective**	**5-1-0**	**6**	**75**
	OR				
	Maxims in Sanskrit Language (60 classes)				
	Prastāvikā of Hitopadeśa- (verses-1-47)				
DSE-2	**Elements of Linguistics – (60 classes)** (I)Primitive Indo-European, Division of Indo-European, Indo-Iranian (Aryan),Emergence of Indo-Aryan, Non-Aryan Influence on Sanskrit, Vedic and Classical Sanskrit. (II)Some Phonetic Laws and Tendencies - Grimm's Law,Verner's Law,Grassmann's Law,Collitz's Law, Assimilation, Dissimilation Metathesis, Prothesis, Epenthesis,Anaptyxis and Haplology	**Discipline Specific Elective**	**5-1-0**	**6**	**75**

The University of Burdwan

Syllabus for B.A.(Hons.)

in

Political Science

Under Semester with

Choice Based Credit System

w.e.f. 2017-2018 onward

Structure of B.A. Honours in Political Science under Semester with CBCS

Semester	Course Title	Course Type	Credit	Full Marks
Sem-I	CC -1 : WESTERN POLITICAL THOUGHT	Core Course	6	75
	CC- 2 : POLITICAL THEORY	Core Course	6	75
	GE - 1 (Any discipline other than Pol. Sc.)	Generic Elective	6	75
	ENVS	AECC-1	4	100
Sem-II	CC - 3 : INDIAN POLITICAL THOUGHT	Core Course	6	75
	CC - 4 : INDIAN GOVERNMENT AND POLITICS	Core Course	6	75
	GE - 2 (Any discipline other than Pol. Sc.)	Generic Elective	6	75
	Communicative English/MIL	AECC-2	2	50
Sem-III	CC -5 : COMPARATIVE GOVERNMENT AND POLITICS	Core Course	6	75
	CC - 6 : PUBLIC ADMINISTRATION- Basic Theories	Core Course	6	75
	CC -7 : LOCAL GOVERNMENT IN INDIA	Core Course	6	75
	GE - 3 (Any discipline other than Pol. Sc.)	Generic Elective	6	75
	Skill Enhancement Course	SEC-1	2	50
Sem-IV	CC - 8 : INTERNATIONAL RELATIONS	Core Course	6	75
	CC -9 : SOCIOLOGY AND POLITICS	Core Course	6	75
	CC- 10 INTERNATIONAL ORGANIZATIONS	Core Course	6	75
	GE - 4 (Any discipline other than Pol. Sc.)	Generic Elective	6	75
	Skill Enhancement Course	SEC-2	2	50
Sem-V	CC-11 : SOCIAL MOVEMENTS IN INDIA	Core Course	6	75
	CC-12 : ELEMENTARY RESEARCH METHODS IN POLITICAL SCIENCE	Core Course	6	75
	Discipline Specific Elective	DSE-1	6	75
	Discipline Specific Elective	DSE-2	6	75
Sem-VI	CC-13 : INDIAN FOREIGN POLICY	Core Course	6	75
	CC-14 :CONTEMPORARY ISSUES IN INDIA	Core Course	6	75
	Discipline Specific Course	DSE-3	6	75
	Discipline Specific Course	DSE-4	6	75

CORE COURSE (CC) : 6 CREDITS EACH

CC-1 : WESTERN POLITICAL THOUGHT

CC-2 : POLITICAL THEORY

CC-3 : INDIAN POLITICAL THOUGHT

CC-4 : INDIAN GOVERNMENT AND POLITICS

CC -5 : COMPARATIVE GOVERNMENT AND POLITICS

CC -6 : PUBLIC ADMINISTRATION – BASIC THEORIES

CC-7 : LOCAL GOVERNMENT IN INDIA

CC-8 : INTERNATIONAL RELATIONS

CC-9 : SOCIOLOGY AND POLITICS

CC-10 : INTERNATIONAL ORGANIZATIONS

CC-11 : SOCIAL MOVEMENTS IN INDIA

CC-12 : ELEMENTARY RESEARCH METHODS IN POLITICAL SCIENCE

CC-13 : INDIAN FOREIGN POLICY

CC-14 : CONTEMPORARY ISSUES IN INDIA

DISCIPLINE SPECIFIC ELECTIVE (DSE)

DSE-1 : SELECT COMPARATIVE POLITICAL THOUGHT Or,

ADVANCED POLITICAL THEORY

DSE-2 : DEMOCRACY AND DECENTRALIZED GOVERNANCE Or,

UNDERSTANDING GOOD GOVERNANCE

DSE-3 : PUBLIC POLICY: CONCEPTS AND IMPLEMENTATION IN INDIA Or,

LOCAL GOVT. IN WEST BENGAL

DSE-4 : UNDERSTANDING GLOBALIZATION Or,

POLITICAL ECONOMY OF INTERNATIONAL RELATIONS

GENERIC ELECTIVE (FOR THE STUDENTS OF OTHER DISCIPLINES)

GE-1 :WESTERN POLITICAL THOUGHT

GE-2 :POLITICAL THEORY

GE-3: INDIAN POLITICAL THOUGHT

GE-4: INDIAN GOVERNMENT AND POLITICS

SKILL ENHANCEMENT COURSES(SEC)

SEC-1 : LEGISLATIVE SUPPORT Or, PEACE AND CONFLICT RESOLUTION.

SEC-2 : PUBLIC OPINION AND SURVEY RESEARCH Or, DEMOCRATIC AWARENESS THROUGH LEGAL LITERACY.

Detailed Syllabus

SEMESTER - I

CC-1 : WESTERN POLITICAL THOUGHT: 6 credits(Theoretical-5 Credits, Tutorial 1 Credit)

1. Ancient Greek Political Thought: Plato – Justice; Aristotle: Concept of the State

2. Medieval Political Thought: Main features 5 lectures

3. Renaissance and Machiavelli: Concept of Power and Secularization of Politics

4. Hobbes: Concept of Sovereignty; Locke: Foundations of Liberalism; Rousseau: General Will

5. Hegel: State

8. Marx and Engels: Dialectical and Historical Materialism; Lenin: Imperialism

9. J.S. Mill and Isaiah Berlin: concept of Liberty

Suggested Readings:

1. G. H. Sabine, *A History of Political Theory* (USA: Wadsworth Publishing Co Inc,)

2. A.K. Mukhopadhyay, *Western Political Thought : From Plato to Marx* (Kolkata: K.P. Bagchi)

3. S. Mukherjee and S. Ramaswamy, *A History of Political Thought,* (New Delhi: PHI)

4. Brian R. Nelson, *Western Political Thought: From Socrates to the Age of Ideology,* (Delhi: Pearson)

5. Shefali Jha, *Western Political Thought* (Delhi: Pearson)

CC- 2 : POLITICAL THEORY : 6 credits (Theoretical-5 Credits, Tutorial 1 Credit)

1. The meaning of Politics and Political Theory; Importance of Political Theory: Decline and Resurgence

2. Different Approaches: (a) Traditional (b) Behavioural and Post-Behavioural (c) Marxist

3. The Concept of Sovereignty: (a) Monistic (b) Pluralist (c) Popular

4. Liberty and Equality: Meaning and their Inter-relationship

5. Theory of Justice: Rawls

6. Ideology – Meaning and Variants: (a) Anarchism (b) Liberalism and Neo-Liberalism (c) Fascism; The End of Ideology Debate – Daniel Bell and Francis Fukuyama

7. Theories of State: (a) Idealist (b) Liberal (c) Marxist (d) Gandhian

Suggested Readings:

1. R. Bhargava and A. Acharya eds. *Political Theory* (Delhi : Longman, 2008)
2. O. P. Gauba. *Introudction to Political Theory* (New Delhi : Macmillan, 2011)
3. J. C. Johari. *Contemporary Political Theory* (New Delhi : Advent Books)
4. S. Ramaswamy. *Political Theory: Ideas and Concept* (New Delhi : Macmillan)
5. A. Roy and M. Bhattacharya. *Political Theory: Ideas and Institutions* (Kolkata: World Press)
6. S.P. Verma. *Modern Political Theory* (New Delhi: Vikash)
7. D.C. Bhattacharyya, *Political Theory* (Kolkata: Vijoya Publishing House)

Generic Elective (FOR THE STUDENTS OF OTHER DISCIPLINES)

GE -1 : WESTERN POLITICAL THOUGHT : 6 Credits (Theoretical-5 Credits Tutorial 1 Credit)

1. Ancient Greek Political Thought: Main Features

2. Medieval Political Thought: Main features

3. Machiavelli: Concept of statecraft and power politics

4. Hobbes, Locke and Rousseau: Concept of Sovereignty

5. Marx and Engels: Dialectical and Historical Materialism; Revolution; Lenin: Imperialism

6. J.S. Mill: Concept of Liberty

Suggested Readings :

1. G. H. Sabine, *A History of Political Theory* (USA: Wadsworth Publishing Co Inc,)
2. A.K. Mukhopadhyay, *Western Political Thought : From Plato to Marx* (Kolkata: K.P. Bagchi)
3. S. Mukherjee and S. Ramaswamy, *A History of Political Thought,* (New Delhi: PHI)
4. Brian R. Nelson, *Western Political Thought: From Socrates to the Age of Ideology,* (Delhi: Pearson)
5. Shefali Jha, *Western Political Thought* (Delhi: Pearson)

Generic Elective (FOR THE STUDENTS OF OTHER DISCIPLINES)

GE -2 : POLITICAL THEORY : 6 credits (Theoretical-5 Credits, Tutorial 1 Credit)

1. The meaning of Politics and Political Theory; Importance of Political Theory; Different Approaches: (a) Traditional (b) Behavioural and Post-Behavioural (c) Marxist

2. The Concept of Sovereignty: (a) Monistic (b) Pluralist (c) Popular

3. Liberty and Equality: Meaning and their Inter-relationship

4. Liberalism and Neo-Liberalism

5. Theories of State: (a) Idealist (b) Liberal (c) Marxist (d) Gandhian

6. Political parties and pressure groups: concept and role

Suggested Readings:

1. R. Bhargava and A. Acharya eds. *Political Theory* (Delhi : Longman, 2008)
2. O. P. Gauba. *Introudction to Political Theory* (New Delhi : Macmillan, 2011)
3. J. C. Johari. *Contemporary Political Theory* (New Delhi : Advent Books)
4. S. Ramaswamy. *Political Theory: Ideas and Concept* (New Delhi : Macmillan)
5. A. Roy and M. Bhattacharya. *Political Theory: Ideas and Institutions* (Kolkata: World Press)
6. S.P. Verma. *Modern Political Theory* (New Delhi: Vikash)
7. D.C. Bhattacharyya, *Political Theory* (Kolkata: Vijoya Publishing House)

SEMESTER-III

CC-5 : COMPARATIVE POLITICS 6 Credits Total Classes : 60

1. Transition from Comparative Government to Comparative Politics - Scope and Objectives of Comparative Politics

2. Conventions and the Rule of Law in UK ; Bill of Rights in the USA

3. Unitary Systems: UK and France; Federal Systems: USA

4. Parliamentary and Presidential Systems: UK and USA and China

5. Party System in UK and USA and France, Nigeria, Mexico.

6. Legislatures in UK and USA: Composition and Functions.

7. Judiciary in UK, USA and France

References:

1. G. Almond et al, Comparative Politics Today : A World View. (Delhi, Pearson)

2. Gabriel Abraham Almond, G. Bingham Powell, Comparative politics: system, process, and policy, (Little, Brown and Co)

3. Rod Hague, Martin Harrop and Shaun Breslin, Comparative Government and Politics – An

Introduction (Macmillan, London)

4. S.N. Ray, Modern Comparative Politics – Approaches, Methods and Issues. (New Delhi, PHI)

5. J.C. Johari, Major Modern Political Systems (New Delhi, Sterling).

6. Rakhahari Chatterjee, Comparative Politics: History, Methods and Approaches (Sarat Book House, Kolkata).

The University of Burdwan

Syllabus for B.A. (Hons.)

in

Philosophy

Under Choice Based Credit System

w.e.f. 2017-2018 onwards

THREE-YEAR B.A. HONOURS IN PHILOSOPHY

(SIX- SEMESTER PATTERN)

(To be effective from 2017-2018)

There will be six semesters in the Three-Year B.A. (Honours) programme. It consists of **14** Core Courses, **2** Ability Enhancement Courses, **2** Skill Enhancement Courses, **4** Discipline Specific Elective Courses and **4** Interdisciplinary Generic Elective Courses. Each Course, except Ability Enhancement Course and Skill Enhancement Course, is of **75** marks, of which **60** marks is for Semester-End Examination (written) and **15** marks for Internal Assessment.

Ability Enhancement Course will be as per General Instruction; while Skill Enhancement Course is of **50** marks, of which **40**marks is for Semester-End Examination (written) and **10**marks for Internal Assessment.

B.A.(Honours) in Philosophy: 1st Semester

In this semester, for the Philosophy Honours Students the Core Courses and the Ability Enhancement Course (centrally framed) are compulsory; while they are to opt for one Interdisciplinary Generic Elective Course from any subject other than Philosophy. Students of any other Honours subject may opt for the Interdisciplinary Generic Elective Course ofPhilosophy.

Course Code	Course Title	Course Type	L - T - P	Credit	Marks
CC- 1	Outlines of Indian Philosophy—I	Core Course	5 - 1 - 0	6	75
CC- 2	Outlines of Western Philosophy—I	Core Course	5 - 1 - 0	6	75
GE- 1	Indian Philosophy	Interdisciplinary (Generic Elective)	5 - 1 - 0	6	75
AECC- 1	ENVS	Ability Enhancement Course	4 – 0 -0	4	100

B.A.(Honours) in Philosophy: 2nd Semester

In this semester, for the Philosophy Honours Students the Core Courses and the Ability Enhancement Course (centrally framed) are compulsory; while they are to opt for one Interdisciplinary Generic Elective Course from any subject other than Philosophy. Students of any other Honours subject may opt for the Interdisciplinary Generic Elective Course ofPhilosophy.

Course Code	Course Title	Course Type	L - T - P	Credit	Marks
CC- 3	Outlines of Indian Philosophy—II	Core Course	5 - 1 - 0	6	75
CC- 4	Outlines of Western Philosophy—II	Core Course	5 - 1 - 0	6	75
GE- 2	Western Philosophy	Interdisciplinary (Generic Elective)	5 - 1 - 0	6	75
AECC- 2	Communicative Eng./ MIL	Ability Enhancement Course	2 -0 -0	2	50

B.A.(Honours) in Philosophy: 3rd Semester

In this semester, for the Philosophy Honours Students the Core Courses and the Skill Enhancement Course are compulsory; while they are to opt for one Interdisciplinary Generic Elective Course from any subject other than Philosophy. Students of anyother Honours subject may optfor the Interdisciplinary Generic Elective Course of Philosophy.

Course Code	Course Title	Course Type	L - T - P	Credit	Marks
CC- 5	Indian Ethics	Core Course	5 - 1 - 0	6	75
CC- 6	Western Ethics	Core Course	5 - 1 - 0	6	75
CC- 7	Indian Logic	Core Course	5 - 1 - 0	6	75
GE- 3	Logic	Interdisciplinary (Generic Elective)	5 - 1 - 0	6	75
SEC- 1	Philosophy in Practice	Skill Enhancement Course	2 - 0 - 0	2	50

B.A.(Honours) in Philosophy: 4th Semester

In this semester, for the Philosophy Honours Students the Core Courses and the Skill Enhancement Course are compulsory; while they are to op for one Interdisciplinary Generic Elective Course from any subject other than Philosophy. Students of any other Honours subject may optfor the Interdisciplinary Generic Elective Course of Philosophy.

Course Code	Course Title	Course Type	L - T - P	Credit	Marks
CC- 8	Western Logic-I	Core Course	5 - 1 - 0	6	75
CC- 9	Psychology	Core Course	5 - 1 - 0	6	75
CC- 10	Philosophy of Religion	Core Course	5 - 1 - 0	6	75
GE- 4	Contemporary Indian Philosophy	Interdisciplinary (Generic Elective)	5 - 1 - 0	6	75
SEC- 2	Philosophy of Human Rights	Skill Enhancement Course	2 - 0 - 0	2	50

B.A.(Honours) in Philosophy: 5th Semester

In this semester, for the Philosophy Honours Students, besides the two compulsory Core Courses there are two Discipline Specific Elective Courses containing Special Texts.

Course Code	Course Title	Course Type	L - T - P	Credit	Marks
CC- 11	Socio-Political Philosophy	Core Course	5 - 1 - 0	6	75
CC- 12	Western Logic-I I	Core Course	5 - 1 - 0	6	75
DSE- 1	Special Text: Kaṭhopaniṣad	Discipline Specific Elective	5 - 1 - 0	6	75
DSE- 2	Special Text: B. Russell: The Problems of Philosophy	Discipline Specific Elective	5 - 1 - 0	6	75

B.A.(Honours) in Philosophy: 6th Semester

In this semester, for the Philosophy Honours Students, besides the two compulsory Core Courses there are two Discipline Specific Elective Courses containing Special Texts.

Course Code	Course Title	Course Type	L - T - P	Credit	Marks
CC- 13	Philosophy in the Twentieth Century: Indian	Core Course	5 - 1 - 0	6	75
CC- 14	Philosophy in the Twentieth Century: Western	Core Course	5 - 1 - 0	6	75
DSE- 3	Special Text: Rabindranath Tagore: Sadhana	Discipline Specific Elective	5 - 1 - 0	6	75
DSE- 4	Special Text: Hume: An Enquiry Concerning Human Understanding	Discipline Specific Elective	5 - 1 - 0	6	75

DETAILED SYLLABUS

Semester- 1

Course Code	Course Title	Course Type	L - T - P	Credit	Marks
CC- 1	**Outlines of Indian Philosophy—I**	**Core Course**	**5 - 1 - 0**	**6**	**75**

Recommended Topics:

1. **DetailedIntroduction:** (a) General Features of Indian Philosophy, (b) Spirit of Indian Philosophy, (c) Basic Concepts of the Vedic and the Upaniṣadic World-Views
2. **Cārvāka:**(a) Perception as the only Source of Knowledge, Refutation of Inference and Testimony as Sources of Knowledge, (b) jaḍavāda and dehātmavāda
3. **Jainism:** (a) anekāntavāda, (b) syādvāda and nayavāda, (c) Theory of Self and Liberation (d) Nature of Substance: Relation between Substance, Attributes & Modes
4. **Buddhism:** (a) Four Noble Truths, (b) pratītyasamutpāda (c) kṣaṇabhangavāda, (d) nairātmyavāda (e) Four Major Schools of Buddhism
5. **Nyāya–Vaiśeṣika:** (a) Nyāya Epistemology : pratyakṣa (Perception), anumāna (Inference), upamāna (Comparison) and śabda (Testimony); khyātivāda (Theory of Error) (b) Vaiśeṣika Metaphysics : saptapadārtha (Seven Ontological Categories), paramāṇuvāda

Recommended Texts :

- Sāyana Mādhavācārya : Sarvadarśanasaṁgraha
- S. C. Chatterjee & D. M. Dutta : An Introduction to Indian Philosophy
- Haridas Bandyaopadhyay : Bharatiya Darshaner Marmakatha

References :

- C. D. Sharma : A Critical Survey of Indian Philosophy
- J. N. Mohanti : Classical Indian Philosophy
- Satyajyoti Chakraborty (ed. & Bengali. tr.): Sarvadarśanasaṁgraha
- Niradbaran Chakraborty : BharatiyaDarshan
- Deepak Kumar Bagchi : Bharatiya Darshan
- Debabrata Sen : BharatiyaDarshan
- Pradyot Kumar Mandal : Bharatiya Darshan
- Panchanan Shastri : CarvakDarshan
- Ramkrishna Bhattacharya : CarvakCarca
- Shailendra Brahmachari : AbhidhammaDarpan
- Panchanan Shastri : BauddhaDarshan
- Satindra Chandra Nyayacarya : Jaina Dashaner Digdashan

- Karuna Bhattacharya : Nyaya-VashesikDarshan

Course Code	Course Title	Course type	L - T - P	Credit	Marks
CC- 2	**Outlines of Western Philosophy—I**	**Core Course**	5 - 1 - 0	6	75

Recommended Topics:

1. **ThePre-SocraticPeriod:** (a) Ionian School,(b) Parmenides, (c) Heraclitus and (d) Zeno (Paradoxes)
2. **Plato :** (a) Theory of Knowledge, (b) Theory of Ideas
3. **Aristotle:**(a) Refutation of Plato's Theory of Ideas, (b) Theory of Substance, (c) Form and Matter, (d) Theory of Causation
4. **Descartes:**(a) Method of Doubt, (b) CogitoErgoSum, (c) Criterion of Truth, (d) Classification of Ideas, (e) Interactionism, (f) Substance
5. **Spinoza:**(a) The Doctrine of Substance, Attributes and Modes,(b) Parallelism, (c) Degrees of Knowledge, (d) Determinism and Freedom
6. **Leibniz:**(a)Monadologyand Pre-establishedHarmony (b) TruthsofReasonandTruths of Fact,(c) Theory of Knowledge

Recommended Texts :

- F. Copleston : A History of Philosophy [vols. I, IV, V, & VII]
- W. T. Stace : A Critical History of Greek Philosophy

References :

- B. Russell : A History of Western Philosophy
- Y. Masih : A Critical History of Western Philosophy
- R. Falckenberg : History of Modern Philosophy
- Anders Wedberg : A History of Philosophy, vols.-I & II
- Tom Sorell & G. A. J. Rogers (ed.): AnalyticPhilosophy andHistory of Philosophy
- Niradbaran Chakraborty : Pashcatya Darshaner Itihas(Plato, Aristotle)
- Sushanta Chakraborty : Pashcatya Darshaner Itihas
- Kalyan Chandra Gupta : Pashcatya DarshanerItihas
- Chandroday Bhattacharya: Pashcatya Darshaner Itihas
- Tarak Chandra Das : Pashcatya Darshaner Itihas, vols.-I, II & III
- Shyamal Kumar Mukhopadhyay : SocrateserBicaro Mrtyu(Pub: Darshan O Samaj Trust, 1996)
- Sardar Fajlul Karim: Plator Samlap (Bengali Tr. of Plato's Dialogues), Dhaka Bangla Academy

Course Code	Course Title	Course type	L - T - P	Credit	Marks
GE- 1	**Indian Philosophy**	**Interdisciplinary Generic Elective**	**5 - 1 - 0**	**6**	**75**

Recommended Topics:

1. Introduction: General Features of Indian Philosophy

2. **Cārvāka**: (a) pratyakṣa(Perception) as the only Source of Knowledge , (b)Refutation of anumāna (Inference) and śabda (Testimony) as Sources of Knowledge (c) Jaḍavāda and dehātmavāda
3. **Jainism:** (a) anekāntavāda (b) syādvāda and nayavāda
4. **Buddhism:**(a)FourNobleTruths,(b)pratītyasamutpāda, (c) kṣaṇabhaṅgavāda(d)nairātmyavāda
5. **Nyāya–Vaiśeṣika:** (a) pramāṇa: pratyakṣa (Perception), anumāna (Inference), upamāna (Comparison) and śabda (testimony) (b) saptapadārtha (Seven Categories)
6. **Sāṁkhya:** (a) satkāryavāda(Theory of Causality), (b) pariṇāmavāda(Theory of Evolution)
7. **Yoga :** (a) cittavṛttinirodha (b) aṣṭāṅgayoga
8. **Mīmāṁsā :** (a)arthāpatti (b)anupalabdhi

8. Advaita Vedānta: Brahman, jīva and jagat

Recommended Texts :

- S. C. Chatterjee & D. M. Dutta: An Introduction to Indian Philosophy
- C. D. Sharma : A Critical Survey of Indian Philosophy
- Haridas Bandyaopadhyay : Bharatiya Darshaner Marmakatha

References :

- J. N. Mohanti : Classical Indian Philosophy
- Niradbaran Chakraborty : BharatiyaDarshan
- Karuna Bhattacharya : Nyaya-Vaisheṣika Darshan
- Panchanan Shastri : CarvakaDarshan
- Panchanan Shastri : BauddhaDarshan
- Rajat Bhattacharya : Samkhyakarika O Samkhyatattvakaumudi
- Niradbaran Chakraborty : BharatiyaDarshan
- Deepak Kumar Bagchi : Bharatiya Darshan
- Debabrata Sen : BharatiyaDarshan
- Pradyot Kumar Mandal : Bharatiya Darshan
- Kanakprabha Bandyopadhyay : Samkhyapatanjaldarshan
- Tarakishor Sharma Choudhury :Patanjaldarshan
- Gobindagopal Mukhopadhyay : Yoger Katha : Patanjalir Dristite
- Purnachandra Vedantachunchu : PatanjalDarshan
- Purnachandra Vedantachunchu: Samkhyakarika

Course Code	Course Title	Course type	L - T - P	Credit	Marks
AECC- 1	**ENVS**	**Ability Enhancement Course**	**4 -0 -0**	**4**	**100**

Semester- 2

Course Code	Course Title	Course Type	L - T - P	Credit	Marks
CC- 3	**Outlines of Indian Philosophy-II**	**Core Course**	5 - 1 - 0	6	75

Recommended Topics:

1. **Sāṁkhya :** (i) satkāryavāda, (ii) pañcaviṁśati tattva and tattvapariṇāma, (iii) prakṛti and its guṇa-s, (iv) Notion of puruṣa, bahupuruṣavāda
2. **Yoga:**(i) citta, (ii) cittabhūmi, (iii) cittavṛtti, (iv) cittavṛttinirodha(v) īśvara
3. **Pūrva-Mīmāṁsā :** (i) pramāṇa-s with special reference to arthāpatti and anupalabdhi, (ii) prāmāṇyavāda
4. **Advaita Vedānta :** (i) vivartavāda,, (ii) māyā, (iii) Brahman, jīvaand jagat
5. **ViśiṣṭādvaitaVedānta:**(i) Distinction between advaitavāda and viśiṣṭādvaitavāda, (ii) Nature of īśvara, jīva and jagat, (iii) Criticism of Saṁkara's Doctrine of māyā
6. ***Khyātivāda:*** (Theory of Error): Bhāṭṭa and Advaita

Recommended Texts :

- S. C. Chatterjee & D. M. Dutta: An Introduction to Indian Philosophy
- Haridas Bandyaopadhyay : Bharatiya Darshaner Marmakatha

References :

- C. D. Sharma : A Critical Survey of Indian Philosophy
- M. Hiriyanna : Outlines of Indian Philosophy
- Niradbaran Chakraborty : BharatiyaDarshan
- Deepak Kumar Bagchi : BharatiyaDarshan
- Debabrata Sen : BharatiyaDarshan
- Pradyot Kumar Mandal : Bharatiya Darshan
- Rajat Bhattacharya : Samkhyakarika O Samkhyatattvakaumudi
- Bidhubhushan Bhattacharya : Samkhya Darshaner Bibaran
- Kanakprabha Bandyopadhyay : Samkhyapatanjaldarshan
- Harihrananda Aranya : Yogdarshan
- Tarakishor Sharma Choudhury :Patanjaladarshan
- Gobindagopal Mukhopadhyay : Yoger Katha : Patanjalir Dristite
- Purnachandra Vedantachunchu : PatanjalDarshan
- Sukhamaya Bhattacharya : Purva Mimamsa Darshan
- Roma Choudhury : VedantaDarshan
- Pramathanath Sharma : Mayavad

Course Code	Course Title	Course type	L - T - P	Credit	Marks
CC- 4	**Outlines of Western Philosophy—II**	**Core Course**	**5 - 1 - 0**	**6**	**75**

Recommended Topics:

1. **Locke:**(a) Refutation of Innate Ideas and Principles,(b) Theory of Ideas, (c) Theory of Substance, (d) Distinction between Primary and Secondary Qualities and (e) Theory of Knowledge
2. **Berkeley:**(a)Rejection of the Lockean Notionof Substance, (b) Refutation of Abstract Ideas (c) Rejection of the Distinction between Primary and Secondary Qualities and (d) EsseEstPercipii
3. **Hume:**(a)Origin of Knowledge : Impressions and Ideas, (b) Laws of Association, (c) Relations of Ideas and Matters of Fact, (d) Notion of Causality, (e) Problem of Personal Identity and (f) Scepticism
4. **Kant :** (a) Idea of the Critical Philosophy, (b) Possibility of Metaphysics, (c) Kant's Copernican Revolution in Philosophy, (d) Role of Sensibility and Understanding in the Origin of Knowledge, (e) Possibility of Synthetic A-priori Judgments and (f) Space and Time
5. **Hegel:** (a) Dialectical Method and (b) The Absolute

Recommended Texts :

- Y. Masih : A Critical History of Western Philosophy
- R. Falckenberg : History of Modern Philosophy
- I. Kant : CritiqueofPureReason,tr. N. K. Smith

References :

- F. Copleston : A History of Philosophy [vols. I, IV, V, & VII]
- B. Russell : A History of Western Philosophy
- W.T. Stace : A Critical History of Greek Philosophy
- Anders Wedberg : A History of Philosophy, vols-I & II
- Tom Sorell & G. A. J. Rogers (ed.): AnalyticPhilosophy andHistory of Philosophy
- Humayun Kabir : Immanuel Kant
- Rashbihari Das : A Handbook on Kant's Critique of Pure Reason
- Sushanta Chakraborty : Pashcatya Darshaner Itihas
- Kalyan Chandra Gupta : Pashcatya DarshanerItihas
- Chandroday Bhattacharya: Pashcatya Darshaner Itihas
- Tarak Chandra Das : Pashcatya Darshaner Itihas, vols.-I, II & III
- Monornjan Basu : Pashcatya Darshaner Itihas
- Rashbihari Das : KanterDarshan
- Tafajol Hossain: Immanuel Kanter Pratham Kritik: Ekti Upasthapana

Course Code	Course Title	Course Type	L - T - P	Credit	Marks
GE- 2	**WesternPhilosophy**	**Interdisciplinary (Generic Elective)**	**5 - 1 - 0**	**6**	**75**

Recommended Topics:

1. **Metaphysics**: Nature of Metaphysics, Elimination of Metaphysics
2. **Realism**: Naive Realism, Scientific Realism, Representative Realism
3. **Idealism**: Subjective Idealism, Objective Idealism

4. **Critical Theory of Kant**
5. **Theories of Causation** : Regularity Theory and Entailment Theory
6. **Substance** : Views of Descartes, Spinoza, Locke and Berkeley
7. **Relation between Mind and Body**: Interactionism and Parallelism
8. **Theories of Evolution** : Mechanistic and Emergent

Recommended Texts:

1. Falkenberg : History of Western Philosophy
2. Sibapada Chakraborty : General Philosophy

Reference:

- Sibapada Chakraborty : An Introduction to General Philosophy
- Ramchandra Pal : DarshanParichay
- Rama Prasad Das & Sibapada Chakraborty : Pashcatya Darshaner Ruprekha
- Niradbaran Chakraborty : Pashcatya Darshaner Bhumika

Course Code	Course Title	Course Type	L - T - P	Credit	Marks
AECC- 2	**Communicative Eng./ MIL**	**AbilityEnhancement Course**	**2-0-0**	**2**	**50**

Semester- 3

Course Code	Course Title	Course Type	L - T - P	Credit	Marks
CC- 5	**Indian Ethics**	**Core Course**	**5 - 1 - 0**	**6**	**75**

Recommended Topics:

1. ***puruṣārtha*** (Cārvāka and Āstikaviews)
2. **Vedic Concept**s : ṛta, satya, yajña, ṛṇa
3. **Ethics in *Śrīmadbhagavadgītā*** : niṣkāmakarma and sthitaprajña
4. **Buddhist Ethics :** pañcaśīla and brahmavihāra
5. **Jaina Ethics :** pañcavrata: mahāvrata and anuvrata, and triratna
6. **Yoga Ethics :** yama and niyama

Recommended Texts:

- S. K. Maitra : The Ethics of the Hindus
- I. C. Sharma : The Ethical Philosophy of India

References :

- K. N. Tewari, Classical Indian Ethical Thought
- Peter Hervey : BuddhistEthics
- Sukhamoy Bhattacharya : PurvamimaṃsaDarshan

- Jagadish Chandra Ghosh :Bhagavadgita
- Somnath Chakraborty : NitividyarTattvakatha
- Sibapada Chakraborty : Nitividya
- Dikshit Gupta : Nitishastra
- Indrani Sanyal & Ratna Dutta Sharma (ed.) : Dharmaniti O Sruti
- Amita Chatterjee (ed.) : Bharatiya Dharmaniti
- Dhruba Acharyya: NitishastreSukhabad

Course Code	Course Title	Course Type	L - T - P	Credit	Marks
CC- 6	**Western Ethics**	**Core Course**	**5 - 1 - 0**	**6**	**75**

Recommended Topics:

1. **Nature and Scope of Ethics**
2. **Nature ofMorality**
3. **Moral and Non-moral actions**
4. **Object of Moral Judgment:** Motive and Intention
5. **Postulates ofMorality**
6. **The Development of Morality**
7. **Normative Theories :** Consequentialism (Teleology): (a) Hedonism, (b) Act Utilitarianism and Rule Utilitarianism; (c) Act Deontology and Rule Deontology, (d) Kant's Moral Theory
8. **Theories of Punishment:** Retributive, Deterrent and Reformative Theory
9. **IssuesinAppliedEthics:** (a) Suicide,(b) Euthanasia, (c) Gender Equality, (d) Affluence and Morality

Recommended Texts:

- W. Frankena: Ethics
- Y. V. Satyanarayan : Ethics : Theory and Practice

References:

- W. Lillie : An Introduction to Ethics
- J. S. Mackenzie : AManualofEthics
- P. Singer : Practical Ethics
- A.S.M. Abdul Khalek : NitibidyarTattvakatha
- Somnath Chakraborty : NitividyarTattvakatha
- Somnath Chakraborty : Kathay Karme Ethics
- Mrinal Kanti Bhadra :Nitividya
- Dikshit Gupta : Nitishastra
- Dhruba Acharyya: Paribesh Nitishastrer Paricay
- Shefali Moitra: Naribad o Naitikata
- Shefali Moitra: Feminist Thought
- Rajshree Basu : Naribad
- Rajshree Basu & Basabi Chakraborty (ed.): Prasanga: Manabividya

Course Code	Course Title	Course Type	L - T - P	Credit	Marks
CC- 7	**Indian Logic**	**Core Course**	5 - 1 - 0	6	75

Recommended Topics & Text :

1. Annaṁbhatta :*Tarkasaṁgraha* with *Dīpikā*

[From the text "sarvavyavahāraheturguṇo buddhirjñānam" to the end of upamāna]

References:

- Gopinath Bhattacharyya (tr. & elucidated) Tarkasaṁgrahadīpikā on Tarkasaṁgraha, Progressive Publishers, Calcutta
- Narayan Chandra Goswami (ed. & tr.) : Tarkasaṁgraha of Annambhatta
- Anamika Roychoudhury (ed. & tr.) : Tarkasaṁgraha
- Kanailal Poddar (ed. & tr.): Tarkasaṁgraha
- Indira Mukhopadhyay (ed. & tr.): Tarkasaṁgraha

Course Code	Course Title	Course Type	L - T - P	Credit	Marks
GE- 3	**Logic**	**Interdisciplinary Generic Elective**	5 - 1 - 0	6	75

Recommended Topics:

1. **BasicConceptsofLogic:**(a) Nature and Scope of Logic, (b) Sentence, Proposition and Statement , (c) Inference and Argument,
2. **Typesof Argument :** Deductive Argument and Inductive Argument
3. **Opposition ofPropositions**
4. **ImmediateInference:** Conversion, Obversion and Contraposition
5. **CategoricalSyllogisms :** Rules and Fallacies, Venn Diagram
6. **Truth-functional Argument**
7. **Science and Hypothesis**

RecommendedTexts:

- M. Copi, C. Cohen, P. Jetli & M. Prabhakar : Introduction to Logic (14th Edition)
- R. S. Agarwal: A Modern Approach to Logical Reasoning, Paperback, 2007

References:

- Bo Bennett : LogicalFallacious: The UltimateCollection of Over300 LogicalFallacies(Academic Edition)

  (This ebook is available in the downloadableformats: pdf (for reading on PC or MAC), epub (iPad, Nook, and most e-book readers), mobi (AmazonKindle)

Course Code	Course Title	Course Type	L - T - P	Credit	Marks
SEC- 1	**Philosophy in Practice**	**Skill Enhancement Course**	2 - 0 - 0	2	50

Recommended Topics:

1. Common and Differentiating Characteristics of Philosophy and *darśana*

2. **Nature of Inquiry in Philosophyand *darśana***

3. **OutlinesofthetypesofInquiryinPhilosophyand*darśana*:**(a)EpistemicInquiryinPhilosophy and darśana, (b) Metaphysical Inquiry in Philosophy and darśana,

4. **AfewModelWorld-viewsandcorrespondingpathsleadingtoPerfection:**(a) Plato's view, (b) Kant's view, (c) Sāṁkhya view and (d) Advaita Vedānta View

5. **MethodsofPhilosophicalDiscourse(*kathā*):**(a) vāda, (b) jalpa, (c) vitaṇḍā, (d) chhala,(e) jātiand (f) nigrahasthāna

Recommended Texts :

- H. Cappelen: TheOxfordHandbookofPhilosophicalMethodology, Oxford University Press, 2016
- B.K. Matilal: The Wordand The World , Oxford University Press, 2001
- Bimal Krishna Matilal: The Character of Logic in India
- Bertrand Russell: The Problems of Philosophy

References:

- Paul F. Kisak: PhilosophicalMethodology:TtheMethodsof PhilosophicalInquiry, CSIPublishingPlatform, 2016
- E. V. Stubley: Philosophic as a Method of Inquiry
- R. M. Keon: Philosophic Semantics and Philosophic Inquiry
- The Methods of Philosophy is the Methods of Inquiry (https://explicitblog.wordpress.com)
- Plato : The Republic
- G. E. Moore: Some Main Problems of Philosophy, New York
- Īśvarakṛṣṇa : Sāṁkhyakārikā
- Sadānanda Yogīndra: Vedāntasāra
- Gautama : Nyāyasūtra
- Th. Stcherbatsky: Buddhist Logic, vol.-I
- B.K. Matilal: Perception , Oxford University Press, Oxford, 1986
- D. M. Datta & S. C. Chatterjee : Introduction to Indian Philosophy
- C. D. Sharma : A Critical Survey of Indian Philosophy
- Sibapada Chakraborty : An Introduction to General Philosophy
- Ramchandra Pal : DarshsanParichay
- Rama Prasad Das & Sibapada Chakraborty : Paschatya Darshaner Ruprekha
- Niradbaran Chakraborty : Paschatya Darshaner Bhumika
- PhanibhushanTarkabagish: Nyay Parichay

Semester- 4

Course Code	Course Title	Course Type	L - T - P	Credit	Marks
CC- 8	**Western Logic-I**	**Core Course**	5 - 1 - 0	6	75

Recommended Topics:

1. Deduction:
Propositional Logic, 1st Order Predicate Logic (Up to singly general proposition).

Recommended Texts :

- M. Copi, C. Cohen, P. Jetli & M. Prabhakar : Introductionto Logic(13th Edition) [Chapters 3 to 8]
- Ramaprasad Das: Navya-yuktivijnan

Course Code	Course Title	Course Type	L - T - P	Credit	Marks
CC- 9	**Psychology**	**Core Course**	5 - 1 - 0	6	75

Suggested Topics:

1. **Nature of Psychology**
2. **Research Methods in Psychology**
3. **Central Nervoussystem**
4. **Perception :** Colour and Depth , Pattern Recognition, Perceptual Organization
5. **Attention:** Nature, Conditions, Span and Division of Attention
6. **Learning:** Classical Conditioning Theory, Instrumental (Operant) Conditioning Theory, Trial and Error Theory, Insight Theory
7. **Memory:** Factors of Memory, Marks of Good Memory, Laws of Association, Causes of Forgetfulness
8. **Consciousness:** Levels of Consciousness, Freud's Theory of Dream
9. **Intelligence**: Insight and Intelligence, Measurement of Intelligence, I. Q. Test of Intelligence

Recommended Texts :

- C. T. Morgan & R. A. King Jr.: Introduction to Psychology
- Robert S. Feldman: Understanding Psychology
- Pareshnath Bhattacharya : A Textbook of Psychology, vols.-I, II & III

References:

- G. F. Stout : A Manual of Psychology
- Woodworth & Marquis :Psychology
- R. S. Woodworth : Contemporary Schools of Psychology
- E. B. Titchener : A Text Book of Psychology
- Pareshnath Bhattacharya : Monovidya
- Priti Bhusan Chattopadhyay :Monovidya
- Ira Sengupta : Monovidya

Course Code	Course Title	Course Type	L - T - P	Credit	Marks
CC- 10	**Philosophy of Religion**	**Core Course**	5 - 1 - 0	6	75

Recommended Topics:

1. **NatureandScopeofPhilosophyofReligion:**(a) Religion, Dharma, Dhamma and (b) Philosophy of

Religion, Comparative Religion and Theology

2. **OriginandDevelopmentofReligion:** Anthropological and Freudien Theories
3. **FundamentalFeaturesofMajorReligions:** Hinduism, Christianity, Islam, Buddhism : Basic Tenets, Bondage and Liberation
4. **Arguments for the Existence of God** (Indian and Western): Yoga Arguments, Nyāya Arguments, Cosmological Arguments, Teleological Arguments, Ontological Arguments
5. **Argumentsagainstthe Existence of God**: Sociological Arguments, Freudian Arguments, Buddhist Arguments
6. **The Problem of Evil**
7. **Monotheism, Polytheism** and **Henotheism**

Recommended Texts :

- J. Hick : Philosophy ofReligion
- P. B. Chatterjee : Studies inComparative Religion
- Edward : Philosophy ofReligion

References:

- Swami Vivekananda: A Study of Religion
- Kalidas Bhattacharyya : AlternativeReligions
- Amlan Datta : Dharma O Yukti
- D. Mahanta: Dharma Darshaner Katipay Samasya
- Kalyan Gupta & Amitava Chakraborty : Dharma Darshan
- M. M. Sharif : A History of Muslim Philosophy
- M. Fakhry : A History of Islamic Philosophy
- S. R. Saha (ed) : Religions of the People of India
- R. K. M. Institute of Culture : The Religion of the World
- Osman Ghani : Ilamic Cinta O Chetanar Kramabikash (vol. 10)
- Hasan Ayub : IslamiDarshan
- R. S. Franks : The Doctrine of Trinity
- K. N. Tiwari : ComparativeReligion
- Pijush Kanti Ghosh : Dharma Darshan
- N. Arabinda Basu and Nibedita Chakraborty: Dharma Darshan Parichay

Course Code	Course Title	Course Type	L - T - P	Credit	Marks
GE- 4	**Contemporary Indian Philosophy**	**Interdisciplinary(Generic Elective)**	5 - 1 - 0	6	75

Recommended Topics: Philosophical Thoughts of Rabindranath Tagore, Swami Vivekananda, Sri Aurobindo,

S. Radhakrishnan, Md. Iqbal and Mahatma Gandhi

□ **RabindranathTagore:** (a)Nature of Man : The Finite Aspect of Man, the Infinite Aspect of Man , (b) Nature of Religion and (c) Surplus inMan

- **Swami Vivekananda** : (a)Practical Vedānta and (b) Universal Religion
- **SriAurobindo:**(a) Nature of Reality, (b) Human Evolution– its different stages and (c) Integral Yoga

□ **S. Radhakrishnan:** (a) Nature of Man, (b) Nature of Religious Experience

□ **Md. Iqbal:** (a) Nature of the Self, (b) Nature of the World and (c) Nature of God

□ **Mahatma Gandhi:** (a) God and Truth and (b) Ahimsa

Recommended Texts :

□ B. K. Lal : Contemporary Indian Philosophy

□ D. M. Dutta : Chief Currents of Contemporary Philosophy

□ Binay Gopal Roy : Contemporary Indian Philosophers

References:

□ The Complete Works of Swami Vivekananda (vol. II), Advaita Ashram, Calcutta

Course Code	Course Title	Course Type	L - T - P	Credit	Marks
SEC- 2	**Philosophy of Human Rights**	**SkillEnhancementCourse**	2 - 0 - 0	2	50

Recommended Topics:

1. **Definition and Nature of Human Rights**
2. **TheIdeaofHumanRights:**Its Origins and Historical Developmentsduring Ancientperiod, Modern Period and Contemporary Period
3. **TheIdea of NaturalLawand NaturalRights:**Thomas Hobbes and John Locke
4. **Natural Right, Fundamental Right and Human Right**
5. **Preamble, Fundamental Rights and Duties (Indian Constitution) Recommended**

Texts:

- Patrick Hayden (ed.): ThePhilosophyofHumanRights, Paragon House, St. Paul, First Edition, 2001.
- Morton E. Winston (ed.): The Philosophy of Human Rights, Wadsworth Publishing Co. Belmont, California, 1989.
- Jeremy Waldron (ed.): Theories of Rights, Oxford University Press, Oxford, 1984

References:

- Ashwani Peetush and Jay Drydyk: HumanRights: IndiaandWest, Oxford University Press, New Delhi, 2015
- James Nickel: Making Sense of Human Rights, Blackwell Publishing, Oxford, 2007
- Henry Shue: Basic Rights: Subsistence, Affluence and U. S. Foreign Policy, Princeton University Press, Princeton, 1980
- Gary, B. Herbert: PhilosophicalHistoryofHumanRights,Transaction Publishers,New Jersey,2002
- Michael Freeden: Rights, Worldview Publications, New Delhi, 1998
- Lynn Hunt: Inventing Human Rights: A History, Norton & Company, New York, 2007

- Jack Donnelly: Universal Human rights in Theory and Practice, Manas Publications, New Delhi, 2013
- Benulal Dhar: The Philosophical Understanding of Human Rights, D. K. Print World, New Delhi, 2013
- William A. Edmundson: AnIntroductionto Rights, Cambridge University Press, Cambridge, 2012
- Carl Wellman: TheMoralDimensionsofHumanRights, Oxford University Press, Oxford, 2011
- Benulal Dhar, Manavadhikar Ki Ebong Kena , Pragati Prakashak, Kolkata, 2016
- J. K. Das: Human Rights Law and Practice, PHI Learning, 2016
- Durga Das Basu : Introduction to the Constitution of India, Lexis Nexis, 2016
- Justice Ruma Paul & M.P Jain: Indian Constitutional Law, Lexis Nexis, 2016
- L. K. Thakur, ComparativeInternational HumanRights, Authors Press, Delhi, 2001

Semester- 5

Course Code	Course Title	Course Type	L - T - P	Credit	Marks
CC- 11	**Socio-Political Philosophy**	**Core Course**	5 - 1 - 0	6	75

Recommended Topics:

1. **Nature and Scope of Social Philosophy and Political Philosophy**
2. **BasicConcepts:**Society, Social Group, Community, Association, Institution, Customs, Folkways and Mores
3. **SocialClassandCaste:**Class Attitude and Class Consciousness, Marxian Theory of Class, B. R . Ambedkar's Criticism of Caste System, Dalit Movement
4. **Political Ideals:**

i) Democracy – its differentforms

ii) Socialism – Utopian and Scientific

iii) Nation, Nationalism and Internationalism (Rabindranath)

iv) Radical Humanism (Manabendranath Roy)

Recommended Texts :

- Krishna Roy : Political Philosophy : East and West
- P. B. Chattopadhyay : Social Philosophy
- Andrea Veltman : Social and Political Philosophy
- John Somarville & Ronald Santoni : Social and Political Philosophy

References:

- R. M. MacIver & C. H. Page : Society
- M. Ginsberg : Sociology
- Tom Bottomore : Sociology
- P. Gisbert : Fundamentals of Sociology

- F. Engles : Socialism : Utopian and Scientific
- Satyabrata Chakraborty : Bharatbarsha : Rastrabhabana
- Amal Kumar Mukhopadhyay : 'Secularism in the Present Indian Society' in Bulletin of the Ramkrishna Mission Institute of Culture, vols. LVII No. II
- D.E. Smith : Indian as A Secular State
- Amal Kumar Mukhopadhyay : Rastradarshaner Dhara
- D.R. Jatava : Social Philosophy of B.R. Ambedkar
- Sandip Das : Samaj O Rajnaitikdarshan
- Sailesh Kumar Bandyopadehyay : Gandhi Parikrama
- Bhikhu Parekh : Gandhi's Political Philosophy
- Samarendra Bhattacharya : Samajdarshan O Rastradarshan
- Sobhanlal Duttaguta : MarxiyaRastrachinta
- M.K.Gandhi : Hindswraj

Course Code	Course Title	Course Type	L - T - P	Credit	Marks
CC- 12	**Western Logic-II**	**Core Course**	**5 - 1 - 0**	**6**	**75**

Recommended Topics:

1. **Induction**
2. **Philosophy of Logicand Language :** Meaning, Definition and Truth

Recommended Texts

- M. Copi, C. Cohen, P. Jetli & M. Prabhakar : Introductionto Logic(13th Edition) Chapters 11 to 14
- John Hospers : An Introduction to Philosophical Analysis (Chapters 1 & 2)

Course Code	Course Title	Course Type	L - T - P	Credit	Marks
DSE- 1	**SpecialText:*Kaṭhopaniṣad***	**Discipline Specific Elective**	**5-1-0**	**6**	**75**

Recommended Text and Topics:

- ***Kaṭhopaniṣad (***First Chapter : vallis – I,II and III)

Course Code	Course Title	Course Type	L - T - P	Credit	Marks
DSE- 2	**Special Text: B. Russell: *The Problems of Philosophy***	**Discipline Specific Elective**	**5-1-0**	**6**	**75**

Recommended Text and Topics:

- **B. Russell: *The Problems of Philosophy*** (Chapters- 1 to 6)

Semester- 6

Course Code	Course Title	Course Type	L - T - P	Credit	Marks
CC- 13	**Philosophy in the Twentieth Century: Indian**	**Core Course**	**5-1-0**	**6**	**75**

RecommendedTopics: PhilosophicalThoughts of Rabindranath Tagore,Swami Vivekananda,Sri Aurobindo, S. Radhakrishnan, Md. Iqbal and Mahatma Gandhi

1. **RabindranathTagore:** (a) Nature of Man : The Finite Aspect of Man, the Infinite Aspect of Man, (b) Nature of Religion, and (c) Surplus in Man
2. **SwamiVivekananda :** (a)Practical Vedānta, (b) Universal Religion and (c) Yoga
3. **SriAurobindo:** (a)Nature of Reality, (b) Human Evolution– its different stages and (c) Integral Yoga
4. **S.Radhakrishnan:** (a)Nature of Man, (b) Nature of Religious Experience and (c) Nature of Intuitive Apprehension
5. **Md. Iqbal:** (a)Nature of the Self, (b) Nature of the World and (c) Nature of God
6. **Mahatma Gandhi :** (a) God and Truth and (b) Ahimsa

Recommended Texts :

- B. K. Lal : Contemporary Indian Philosophy
- D. M. Dutta : Chief Currents of Contemporary Philosophy
- Binay Gopal Roy : Contemporary Indian Philosophers

References:

The Complete Works of Swami Vivekananda (vol. II), Adaita Ashram, Calcutta

Course Code	Course Title	Course Type	L - T - P	Credit	Marks
CC- 14	**Philosophyin the TwentiethCentury: Western**	**Core Course**	5 - 1 - 0	6	75

Suggested Topics: Philosophical Thoughts of G.E. Moore, B. Russell, A.J.Ayer, M. Heidegger and J.P. Sartre

1. **G. E. Moore:** A Defence of Common Sense
2. **B. Russell:** Knowledge by Acquaintance and Knowledge by Description
3. **L. Wittgenstein:** Theory ofMeaning
4. **A. J. Ayer:** Verifiability Theory of Meaning
5. **M.Heidegger:** (a)Being in the World : Existenz, Facticity and Fallenness and (b)Authenticity and Inauthenticity
6. **J. P. Sartre:** (a) Nothingness and (b) Freedom

Recommended Texts

- A.J.Ayer : Philosophy in the Twentieth Century
- B. Russell: The Problems of Philosopohy

References:

- A.J.Ayer : Language Truth and Logic

- A.J.Ayer : The Central Questions of Philosophy
- Mrinal Kanti Bhadra : A Critical Survey of Phenomenology and Existentialism
- F. Copleston : ContemporaryPhilosophy
- J. Passmore : Recent Philosophers, A Hundred Years of Philosophy
- Somnath Chakraborty : Prasanga : Darsana Jignasa
- Debika Saha : DarshanerSamasyabali
- Debabrata Sinha : Phenomenology and Existentialism : An Introduction
- M.K.Bhadra : Astibad O Manabatabad
- Dr. Sanjib Ghosh : Pratibhashvigyan O Astivad
- Swapan Sarkar : Astibadidarshan O prativashvigyan
- Amit Sen : Binsha Shatabdir BishleshaniDarshana
- Blackham: Six ExistentialistThinkers

Course Code	Course Title	Course Type	L - T - P	Credit	Marks
DSE- 3	**Special Text: RabindranathTagore:*Sadhana***	**Discipline Specific Elective**	5 - 1 - 0	6	75

Suggested Text and Topics:

- **RabindranathTagore: *Sadhana*** (Lectures- 1 to 5)

References:

Kamalika Roy: Rabindranather Sadhana Baktritamala- Ekti Darshanik Biksha, Karigar, 1912

Course Code	Course Title	Course Type	L - T - P	Credit	Marks
DSE- 4	**Special Text: Hume: *An Enquiry Concerning Human Understanding***	**Discipline Specific Elective**	5 - 1 - 0	6	75

Suggested Text and Topics:

- **Hume: An Enquiry Concerning Human Understanding (1,2,3,4,5&7)**

THE UNIVERSITY OF BURDWAN

Burdwan-713104, West

Bengal SYLLABUS FOR B.A.

HONOURS PROGRAMME

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UNDER SEMESTER WITH CBCS
(Effective from 2017- 18)

Only ticked courses are chosen for reading and evaluation

ND stands for non-detailed study

Type	Credits	Number of Courses	Total credits
CC	6 credits per Course (5 theory, 1 tutorial)	14	84
DSE	6 credits per Course (5 theory, 1 tutorial)	4	24
GE [any discipline other than English]	6 credits per Course (5 theory, 1 tutorial)	4	24
AEC	AECC 1 – 4 credits, AECC 2 – 2 Credits	2	6
SEC	2 credits per paper	2	4
Total			**142**

CORE COURSE (CC)

- ✓ CC1: Indian Classical Literature
- ✓ CC2: European Classical Literature
- ✓ CC3: Indian Writing in English
- ✓ CC4: British Poetry, Drama (16^{th} – 17^{th} Centuries), and Rhetoric &Prosody
- ✓ CC5: American Literature
- ✓ CC6: Popular Literature
- ✓ CC7: British Poetry and Drama (17^{th} – 18^{th} Centuries)
- ✓ CC8: British Literature (18^{th} Century)
- ✓ CC9: British Romantic Literature
- ✓ CC10: British Literature (19^{th} Century)
- ✓ CC11: Women's Writing
- ✓ CC12: British Literature (Early 20^{th} Century)
- ✓ CC13: Modern European Drama
- ✓ CC14: Postcolonial Literatures

DISCIPLINE SPECIFIC ELECTIVE (DSE)

- ✓ DSE1: Modern Indian Writing in English Translation OR Travel Writing
- ✓ DSE2: Partition Literature OR British Literature: Post-WWII
- ✓ DSE3: Literary Theory OR Research Methodology
- ✓ DSE4: Literary Criticism and History of the English Language OR Literature of the Indian Diaspora

GENERIC ELECTIVE (GE) [For learners from other discipline(s)]

- ✓ GE1 : Poetry & Short Story
- ✓ GE2 : Essay,Drama and Novel
- ✓ GE3 : Contemporary India: Women and Empowerment
- ✓ GE4 : Academic Writing and Composition

ABILITY ENHANANCEMENT COMPULSORY COURSE (AECC)

- ✓ AECC - 1: Environmental Studies(to follow ENVS syllabus)
- ✓ AECC - 2: Communicative English / MIL

SKILL ENHANANCEMENTCOURSE (SEC)

- ✓ SEC1: Translation OR Creative Writing
- ✓ SEC2: ELT OR Film Studies

B.A. Honours Programme in English under CBCS

Structure at a Glance

Semester	Courses	Course type	Credit	Full Marks
Sem.- I	CC-I	Core Course	6	75
	CC-II	Core Course	6	75
	GE- 1	Interdisciplinary(other than English)	6	75
	ENVS	AECC 1	4	100
Sem.- II	CC-III	Core Course	6	75
	CC-IV	Core Course	6	75
	GE-2	Interdisciplinary(other than English)	6	75
	Communicative English/ MIL	AECC	2	50
Sem.-III	CC-V	Core Course	6	75
	CC-VI	Core Course	6	75
	CC-VII	Core Course	6	75
	GE-3	Interdisciplinary(other than English)	6	75
	SEC- 1	Skill based	2	50
Sem.-IV	CC-VIII	Core Course	6	75
	CC-IX	Core Course	6	75
	CC-X	Core Course	6	75
	GE-4	Interdisciplinary(other than English)	6	75
	SEC- 2	Skill based	2	50

Sem.-V	CC-XI	Core Course	6	75
	CC-XII	Core Course	6	75
	DSE- 1	Discipline Specific Elective	6	75
	DSE- 2	Discipline Specific Elective	6	75
Sem.-VI	CC-XIII	Core Course	6	75
	CC-XIV	Core Course	6	75
	DSE- 3	Discipline Specific Elective	6	75
	DSE- 4	Discipline Specific Elective	6	75

✓ **CC - IV: British Poetry, Drama (16th – 17th Centuries) & Rhetoric and Prosody**

Section A

1. a) William Shakespeare: 'Sonnet No. 18', 'Sonnet no. 116'	4 (L) + 1 (T)
b) John Donne: 'Good Morrow', 'The Sun Rising''	4(L) + 1 (T)
Rhetoric and Prosody (**Recommended** Bose and Sterling)	12(L) + 3 (T)

Section B

2. William Shakespeare: ***Macbeth***	20(L) + 3 (T)
3. Christopher Marlowe: ***Edward II*** **(ND)**	16(L) + 3 (T)
4. William Shakespeare: ***Twelfth Night*** **(ND)**	20(L) + 3 (T)

Topics

Renaissance Humanism, The Stage, Court and City, Religious and Political Thought, Ideas of Love and Marriage, The Writer in Society

76 Lectures + 14 Tutorials = 90

Recommended Readings

1. Pico Della Mirandola. Excerpts from The Oration on the Dignity of Man, in *The Portable Renaissance Reader*, ed. James Bruce Ross and Mary Martin McLaughlin(New York: Penguin Books, 1953) pp. 476–9.
2. John Calvin. 'Predestination and Free Will', in *The Portable Renaissance Reader*,ed. James Bruce Ross and Mary Martin McLaughlin (New York: Penguin Books,1953) pp. 704–11.
3. Baldassare Castiglione. 'Longing for Beauty' and 'Invocation of Love', in Book 4 of*The Courtier*,'Love andBeauty', tr. George Bull (Harmondsworth: Penguin, rpt.1983) pp. 324–8, 330–5.
4. Philip Sidney.*An Apology for Poetry*, ed. Forrest G. Robinson (Indianapolis: BobbsMerrill,1970) pp. 13–18.

✓ **CC - VII: British Poetry and Drama (17th– 18th Centuries)** **Section A** 1. John Milton: ***Paradise Lost*(Book I**) 2. Thomas Dekker: ***Shoemaker's Holiday*(ND)** **Section B** 3. Alexander Pope: ***The Rape of the Lock***(**Cantos** I and III) 4. Aphra Behn: ***Oronokoo*** (**ND**) **Topics** Religious and Secular Thought in the 17th Century, The Stage, the State and the Market, The Mock-epic and Satire, Women in the 17th Century, The Comedy of Manners **Recommended Readings** 1. *The Holy Bible*, Genesis, chaps. 1–4, The Gospel according to St. Luke, chaps. 1–7 and 22–4. 2. Niccolo Machiavelli. *The Prince*, ed. and tr. Robert M. Adams (New York: Norton, 1992) chaps. 15, 16, 18, and 25. 3. Thomas Hobbes. Selections from *The Leviathan*, pt. I (New York: Norton, 2006) chaps. 8, 11, and 13. 4. John Dryden. 'A Discourse Concerning the **Original** and Progress of Satire', in *The Norton Anthology of English Literature,* vol. 1, 9th edn, ed. Stephen Greenblatt (New York: Norton 2012) pp. 1767–8 5. *From Dryden to Johnson* by Boris Ford	22(L) + 4 (T) 20 (L)+ 4 (T) 22(L) + 4 (T) 12 (L) + 2 (T) **76 Lectures +** **14 Tutorials = 90**

The University of Burdwan

B.A./B.Sc. (Honours)
In
Economics
w.e.f. 2017-18
under Semester with CBCS

Structure of Syllabus for BA/B.Sc.Honours in Economics under Semester with CBCS

Students must have to pass in Mathematics/ Business Mathematics or equivalentat +2 Level

SEM	*Paper Code*	*Paper Description*	*Course Type*	*L-T-P*	*Credit*	*Marks*
I		Introductory Microeconomics	**CC-1**	5-1-0	6	75
		Statistics-I	**CC-2**	5-1-0	6	75
		AECC-I ENVS	AECC-1	4-0-0	4	100
		Generic Elec(GE)-I – any discipline other than Economics	GE-1	5-1-0	6	75
II		IntroductoryMacroeconomics	**CC-3**	5-1-0	6	75
		Mathematical Economics –I	**CC-4**	5-1-0	6	75
		AECC-II Communicative English / MIL	AECC-2	2-0-0	2	50
		Generic Elec(GE)-II – any discipline other than Economics	GE-2	5-1-0	6	75
III		IntermediateMicroeconomics	**CC-5**	5-1-0	6	75
		IntermediateMacroeconomics	**CC-6**	5-1-0	6	75
		MathematicalEconomics –II	**CC-7**	5-1-0	6	75
		SkillEnhCourse (SEC)-I	SEC-1	2-0-0	2	50
		Generic Elec(GE)-III – any discipline other than economics	GE-3	5-1-0	6	75
IV		Selected Features of Indian Economy	**CC-8**	5-1-0	6	75
		Statistics-II	**CC-9**	5-1-0	6	75
		Development Economics	**CC-10**	5-1-0	6	75
		SkillEnhCourse(SEC)-II	SEC-2	2-0-0 0-0-2	2	50
		Generic Elec(GE)–IV – any discipline other than economics	GE-4	5-1-0	6	75

V		International Economics	**CC-11**	5-1-0	6	75
		Money and Banking	**CC-12**	5-1-0	6	75
	*	DiscSpElective(DSE)-I	**DSE-1**	5-1-0	6	75
	*	DSE-II	**DSE-2**	5-1-0	6	75
VI		Basic Econometrics	**CC-13**	5-1-0	6	75
		Field Survey& Project Report	**CC-14**	0-0-6	6	75
	*	DSE-III	**DSE-3**	5-1-0	6	75
	*	DSE-IV	**DSE-4**	5-1-0	6	75

*** Discipline Specific Electives**

DSE 1 (Semester V)	**DSE 3 (Semester VI)**
Rural Development Or Selected Features of West Bengal Economy	Social Economics Or Political Economy
DSE 2 (Semester V)	**DSE 4 (Semester VI)**
Environmental Economics Or Public Economics	Entrepreneurship Development Or Financial Economics

*** Skill Enhancement Courses**

SEC 1 (Semester-III)	**SEC 2 (Semester-IV)**
Indian Official Statistics Or Insurance Market & Products Or Managerial Economics	Basic Computer Applications Or Indian Stock Market Trading Or Business Project Formulation & Appraisal

Generic Electives (for other disciplines

GE 1 : Microeconomics
GE 2 : Macroeconomics
GE 3: Development Economics
GE 4: Features of Indian Economics

Honours Course Structure

Semester	*Core Course*	*Subject Elective (DSE)*	*Generic Elective (other dept)*	*AECC*	*AECC*	*SEC*	*Total Courses*	*Total Credits*
	6 credits	*6 credits*	*6 credits*	*2 credits*	*4 credits*	*2 credits*		
I	2		1		1		*4*	*22*
II	2		1	1			*4*	*20*
III	3		1			1	*5*	*26*
IV	3		1			1	*5*	*26*
V	2	2					*4*	*24*
VI	2	2					*4*	*24*
Total Courses	*14*	*4*	*4*	*2*	*4*	*2*	*26*	
Total Credits	*84*	*24*	*24*	*2*	*4*	*4*		*142*

OR

DSE 3

Political Economy

Full Marks: 75 **Credit: 6** **Lectures: 70**

1. **Classical Economic Thoughts:** **L30**

a) Economic thoughts of Adam Smith, Ricardo, and Marx; b) Concept of labour theory of value: Classical political approach of Smith, Ricardo and Marx; criticism; c) Land (Theory of Rent): Classical political approach of Smith, Ricardo and Marx; criticism; Economic thoughts of Gandhi, Nehru, Gokhle, Netaji, and Rabindranath; criticism.

2. **Political System:** **L15**

a) Basic features and functioning of the Physiocracy, Mercantilism, Feudalism, Capitalism and Socialism. b) *Social Transition***:** Feudalism to Capitalism; Capitalism to Socialism; b) Stages of Growth: Marx & Rostow

3. **Analysing the social changes:** **L20**

The method of historical materialism; a) Marxian theory of value, Quantitative and qualitative aspect of value; Components of value, Value of Constant and variable capital; Surplus value, Circuit of capital, surplus value and organic composition of capital Commodity fetishism; the reserve army of labour b) Simple reproduction.

The law of falling rate of profit, Theories of crises: The under consumption crises, realization crises and disproportionality crises. c) Emergence of socialism; social mode of extraction of surplus value; socialist pricing.

4. **The state and the economy** – contestation and mutual interdependence, the state as an arena of conflict; imperialism - the basic foundations. **L5**

References:

1. J.Gurley. The materialist conception of history
2. O. lange Political Economy, 2nd edition
3. E.K. Hunt History of Economic Thought, M.E. Sharp Indian Edition
4. Irfan Habib 1995 "Capitalism in history" Social Scientist vol 23:15-23
5. P. Sweezi The theory of capitalist development
6. Vamsi Vakulavaranam 2009 – The recent crises in global capitalism. Towards a Marxian Understanding,EPW, march28,vol 44, 144-150
7. Anwar Shaikh Entries on "Economic crises" and "falling rate of profit" in T. Bottoore et al {eds), The dictionary of Marxian Thought,OUP, Indian edition, Maya blackwe,2000.
8. J. Shumpiter Capitalism, Socialism and democracy, George Allen and Unwin,1976, Ch 6,7 and 8.

SURI VIDYASAGAR COLLEGE

(Govt. Sponsored & Constituent college of the University of Burdwan)
SURI, BIRBHUM, PIN – 731101, Ph. No. – 03462-255504
Website : surividyasagarcollege.org.in, e-mail: : surividyasagarcollege1942@gmail.com
This Institution is Ragging Free

University prescribed curriculum which includes in its different segments and components cross-cutting issue of

Gender

THE UNIVERSITY OF BURDWAN

Burdwan-713104, West Bengal

SYLLABUS FOR B.A. HONOURS PROGRAMME
IN

ENGLISH

UNDER SEMESTER WITH CBCS
(Effective from 2017- 18)

Only ticked courses are chosen for reading and evaluation

ND stands for non-detailed study

Type	Credits	Number of Courses	Total credits
CC	6 credits per Course (5 theory, 1 tutorial)	14	84
DSE	6 credits per Course (5 theory, 1 tutorial)	4	24
GE [any discipline other than English]	6 credits per Course (5 theory, 1 tutorial)	4	24
AEC	AECC 1 – 4 credits, AECC 2 – 2 Credits	2	6
SEC	2 credits per paper	2	4
Total			**142**

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- ✓ CC1: Indian Classical Literature
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- ✓ CC5: American Literature
- ✓ CC6: Popular Literature
- ✓ CC7: British Poetry and Drama (17^{th} – 18^{th} Centuries)
- ✓ CC8: British Literature (18^{th} Century)
- ✓ CC9: British Romantic Literature
- ✓ CC10: British Literature (19^{th} Century)
- ✓ CC11: Women's Writing
- ✓ CC12: British Literature (Early 20^{th} Century)
- ✓ CC13: Modern European Drama
- ✓ CC14: Postcolonial Literatures

DISCIPLINE SPECIFIC ELECTIVE (DSE)

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- ✓ GE1 : Poetry & Short Story
- ✓ GE2 : Essay,Drama and Novel
- ✓ GE3 : Contemporary India: Women and Empowerment
- ✓ GE4 : Academic Writing and Composition

ABILITY ENHANANCEMENT COMPULSORY COURSE (AECC)

- ✓ AECC - 1: Environmental Studies(to follow ENVS syllabus)
- ✓ AECC - 2: Communicative English / MIL

SKILL **ENHANANCEMENTCOURSE (SEC)**

- ✓ SEC1: Translation OR Creative Writing
- ✓ SEC2: ELT OR Film Studies

B.A. Honours Programme in English under CBCS

Structure at a Glance

Semester	Courses	Course type	Credit	Full Marks
Sem.- I	CC-I	Core Course	6	75
	CC-II	Core Course	6	75
	GE- 1	Interdisciplinary(other than English)	6	75
	ENVS	AECC 1	4	100
Sem.- II	CC-III	Core Course	6	75
	CC-IV	Core Course	6	75
	GE-2	Interdisciplinary(other than English)	6	75
	Communicative English/ MIL	AECC	2	50
Sem.-III	CC-V	Core Course	6	75
	CC-VI	Core Course	6	75
	CC-VII	Core Course	6	75
	GE-3	Interdisciplinary(other than English)	6	75
	SEC- 1	Skill based	2	50
Sem.-IV	CC-VIII	Core Course	6	75
	CC-IX	Core Course	6	75
	CC-X	Core Course	6	75
	GE-4	Interdisciplinary(other than English)	6	75
	SEC- 2	Skill based	2	50
Sem.-V	CC-XI	Core Course	6	75
	CC-XII	Core Course	6	75
	DSE- 1	Discipline Specific Elective	6	75
	DSE- 2	Discipline Specific Elective	6	75
Sem.-VI	CC-XIII	Core Course	6	75
	CC-XIV	Core Course	6	75
	DSE- 3	Discipline Specific Elective	6	75
	DSE- 4	Discipline Specific Elective	6	75

SEMESTERIII

✓ **CC - V: American Literature** **Section A** 1. Mark Twain: ***The Adventures of Tom Sawyer*(ND)** 2. a) Edgar Allan Poe: 'The Purloined Letter' b) F. Scott Fitzgerald: 'The Crack-up' c) William Faulkner: 'Dry September' **Section B** 3. a) Anne Bradstreet: 'The Prologue' b) Walt Whitman: 'Passage to India' (lines 1– 68) c) Alexie Sherman Alexie: 'Crow Testament' 4. Tennessee Williams: ***The Glass Menagerie* (ND)** **Topics** The American Dream, Social Realism and the American Novel, Folklore and the American Novel, Black Women's Writings, Questions of Form in American Poetry **Recommended Readings** 1. *American Literature* by Boris Ford 2. Hector St John Crevecouer. 'What is an American', (Letter III) in *Letters from anAmerican Farmer* (Harmondsworth: Penguin, 1982) pp. 66–105. 3. Frederick Douglass.*A Narrative of the life of Frederick Douglass* (Harmondsworth:Penguin, 1982) chaps. 1–7, pp. 47–87. 4. Henry David Thoreau. 'Battle of the Ants' excerpt from 'Brute Neighbours', in *Walden* (Oxford: OUP, 1997) chap. 12 5. Ralph Waldo Emerson. 'Self Reliance', in *The Selected Writings of Ralph Waldo Emerson*, ed. with a biographical introduction by Brooks Atkinson (New York: The Modern Library, 1964). 6. Toni Morrison. 'Romancing the Shadow', in *Playing in the Dark: Whiteness and Literary Imagination* (London: Picador, 1993) pp. 29–39.	20 (L) + 4 (T) 8 (L) + 2 (T) 8 (L) + 2 (T) 4 (L) + 1 (T) 4(L) + 1 (T) 4(L) + 1(T) 4(L) + 1 (T 22 (L) + 4 (T) **74 Lectures +** **16 Tutorials= 90**

SEMESTERIII

✓ **CC - VI: Popular Literature Section A** 1. Lewis Carroll: ***Alice's Adventures in Wonderland*** **(ND)** 2. Agatha Christie:***The Murder of Roger Ackroyd*** **Section B** 3. L. Frank Baum: ***The Wonderful Wizard of Oz*** **(ND)** 4. Herge: ***Tintin in Tibet*** **Topics** Coming of Age, The Canonical and the Popular, Caste, Gender and Identity, Ethics and Education in Children's Literature, Sense and Nonsense, The Graphic Novel **Recommended Readings** 1. Martin Gardner's *The Annotated Alice.* 2. SumathiRamaswamy. 'Introduction', in *Beyond Appearances?: Visual Practices andIdeologies in Modern India* (Sage: Delhi, 2003) pp. xiii–xxix. 3. Leslie Fiedler. 'Towards a Definition of Popular Literature', in *Super Culture:American Popular Culture and Europe*, ed. C.W.E. Bigsby (Ohio: Bowling Green University Press, 1975) pp. 29–38. 4. Felicity Hughes. 'Children's Literature: Theory and Practice', *English Literary History*, vol. 45, 1978, pp. 542–61.	20 (L) + 4 (T) 20 (L) + 4(T) 15 (L) + 3 (T) 20 (L) + 4 (T) **75 Lectures + 15 Tutorials = 90**

✓ **CC - VII: British Poetry and Drama (17th– 18th Centuries)** **Section A** 1. John Milton: ***Paradise Lost*****(Book I)** 2. Thomas Dekker: ***Shoemaker's Holiday*****(ND)** **Section B** 3. Alexander Pope: ***The Rape of the Lock*****(Cantos** I and III) 4. Aphra Behn: ***Oronokoo*** **(ND)** **Topics** Religious and Secular Thought in the 17th Century, The Stage, the State and the Market, The Mock-epic and Satire, Women in the 17th Century, The Comedy of Manners **Recommended Readings** 1. *The Holy Bible*, Genesis, chaps. 1–4, The Gospel according to St. Luke, chaps. 1–7 and 22–4. 2. Niccolo Machiavelli. *The Prince*, ed. and tr. Robert M. Adams (New York: Norton, 1992) chaps. 15, 16, 18, and 25. 3. Thomas Hobbes. Selections from *The Leviathan*, pt. I (New York: Norton, 2006) chaps. 8, 11, and 13. 4. John Dryden. 'A Discourse Concerning the **Original** and Progress of Satire', in *The Norton Anthology of English Literature*, vol. 1, 9th edn, ed. Stephen Greenblatt (New York: Norton 2012) pp. 1767–8 5. *From Dryden to Johnson* by Boris Ford	22(L) + 4 (T) 20 (L)+ 4 (T) 22(L) + 4 (T) 12 (L) + 2 (T) **76 Lectures + 14 Tutorials = 90**

✓ **CC - X: British Literature (19th Century)** **Section A** 1. Charles Dickens.***Hard Times*****(ND)** 2. a)Alfred Tennyson: 'The Lady of Shallot' b) Robert Browning: 'My Last Duchess' c) Christina Rossetti: 'The Goblin Market' **Section B** 3. Charlotte Bronte:***Jane Eyre*** 4. Thomas Hardy:***Return of the Native*****(ND)** **Topics** Utilitarianism, The 19th Century Novel, Marriage and Sexuality, The Writer and Society, Faith and Doubt, The Dramatic Monologue **Recommended Readings** 1. Karl Marx and Friedrich Engels. 'Mode of Production: The Basis of Social Life', 'The Social Nature of Consciousness', and 'Classes and Ideology', in *A Reader in Marxist Philosophy,* ed. Howard Selsam and Harry Martel (New York: International Publishers, 1963) pp. 186–8, 190–1, 199–201. 2. Charles Darwin. 'Natural Selection and Sexual Selection', in *The Descent of Man* in *The Norton Anthology of English Literature*, 8th edn, vol. 2, ed. Stephen Greenblatt (New York: Norton, 2006) pp. 1545–9. 3. John Stuart Mill. The Subjection of Women in *Norton Anthology of English Literature,*8th edn, vol. 2, ed. Stephen Greenblatt (New York: Norton, 2006) chap. 1, pp. 1061–9. 4. *From Dickens to Hardy* by Boris Ford	25 (L) + 5 (T) 4(L) + 1 (T) 3 (L) + 1 (T) 3 (L) + 1 (T) 25(L) + 5 (T) 14(L) + 3 (T) **74 Lectures +** **16 Tutorials = 90**

✓ **CC - XI: Women's Writing**	
Section A	
1. a) Emily Dickinson: 'I cannot live with you', 'I'm wife; I've finished that'	5(L) + 1 (T)
b) Sylvia Plath: 'Daddy'	3(L) + 1 (T)
c) Eunice De Souza. 'Advice to Women', 'Bequest'.	5(L) + 1 (T)
2. Jean Rhys: ***Wide Sargasso Sea*(ND)**	14(L) + 3 (T)
Section B	
3. a) Mary Wollstonecraft: *A Vindication of the Rights of Woman* (New York: Norton, 1988)chap. 1, pp. 11–19; chap. 2, pp. 19–38 **(ND)**	14(L) + 3 (T)
b) Ramabai Ranade: 'A Testimony of our Inexhaustible Treasures', in *PanditaRamabai: Through Her Own Words: Selected Works*, tr. Meera Kosambi (New Delhi: OUP,2000) pp. 295–324 **(ND)**	8 (L) + 2 (T)
c) Rassundari Debi:*Amar Jiban* (Excerpts in Susie Tharu and K. Lalita, eds.,*Women's Writing in India*, vol. 1 (New Delhi: OUP, 1989 pp. 191–2) **(ND)**	10 (L) + 2 (T)
4. a) Charlotte Perkins Gilman: 'The Yellow Wallpaper"	5(L) + 1 (T)
b) Katherine Mansfield: "Bliss"	5(L) + 1 (T)
c) Mahasweta Devi: "Draupadi" (Tr. Gayatri Spivak, Seagull Publishers, Kolkata)	5(L) + 1 (T)
Topics The Confessional Mode in Women's Writing, Sexual Politics, Race, Caste and Gender, Social Reform and Women's Rights	**74 Lectures + 16 Tutorials = 90**
Recommended Readings	
1. Virginia Woolf. *A Room of One's Own* (New York: Harcourt, 1957) chaps. 1 and 6.	
2. Simone de Beauvoir. 'Introduction', in *The Second Sex*, tr. Constance Borde and Shiela Malovany- Chevallier (London: Vintage, 2010) pp. 3–18.	
3. Kumkum Sangari and Sudesh Vaid.Eds., 'Introduction', in *Recasting Women: Essays in Colonial History* (New Delhi: Kali for Women, 1989) pp. 1–25.	
4. Chandra Talapade Mohanty. 'Under Western Eyes: Feminist Scholarship and Colonial Discourses', in *Contemporary Postcolonial Theory: A Reader*, ed. Padmini Mongia (New York: Arnold, 1996 pp. 172–97).	

The University of Burdwan

Syllabus for B.A.(Hons.)

in

Political Science

Under Semester with

Choice Based Credit System

w.e.f. 2017-2018 onward

Structure of B.A. Honours in Political Science under Semester with CBCS

Semester	Course Title	Course Type	Credit	Full Marks
Sem-I	CC -1 : WESTERN POLITICAL THOUGHT	Core Course	6	75
	CC- 2 : POLITICAL THEORY	Core Course	6	75
	GE - 1 (Any discipline other than Pol. Sc.)	Generic Elective	6	75
	ENVS	AECC-1	4	100
Sem-II	CC - 3 : INDIAN POLITICAL THOUGHT	Core Course	6	75
	CC - 4 : INDIAN GOVERNMENT AND POLITICS	Core Course	6	75
	GE - 2 (Any discipline other than Pol. Sc.)	Generic Elective	6	75
	Communicative English/MIL	AECC-2	2	50
Sem-III	CC -5 : COMPARATIVE GOVERNMENT AND POLITICS	Core Course	6	75
	CC - 6 : PUBLIC ADMINISTRATION- Basic Theories	Core Course	6	75
	CC -7 : LOCAL GOVERNMENT IN INDIA	Core Course	6	75
	GE - 3 (Any discipline other than Pol. Sc.)	Generic Elective	6	75
	Skill Enhancement Course	SEC-1	2	50
Sem-IV	CC - 8 : INTERNATIONAL RELATIONS	Core Course	6	75
	CC -9 : SOCIOLOGY AND POLITICS	Core Course	6	75
	CC- 10 INTERNATIONAL ORGANIZATIONS	Core Course	6	75
	GE - 4 (Any discipline other than Pol. Sc.)	Generic Elective	6	75
	Skill Enhancement Course	SEC-2	2	50
Sem-V	CC-11 : SOCIAL MOVEMENTS IN INDIA	Core Course	6	75
	CC-12 : ELEMENTARY RESEARCH METHODS IN POLITICAL SCIENCE	Core Course	6	75
	Discipline Specific Elective	DSE-1	6	75
	Discipline Specific Elective	DSE-2	6	75
Sem-VI	CC-13 : INDIAN FOREIGN POLICY	Core Course	6	75
	CC-14 :CONTEMPORARY ISSUES IN INDIA	Core Course	6	75
	Discipline Specific Course	DSE-3	6	75
	Discipline Specific Course	DSE-4	6	75

CORE COURSE (CC) : 6 CREDITS EACH

CC-1 : WESTERN POLITICAL THOUGHT

CC-2 : POLITICAL THEORY

CC-3 : INDIAN POLITICAL THOUGHT

CC-4 : INDIAN GOVERNMENT AND POLITICS

CC -5 : COMPARATIVE GOVERNMENT AND POLITICS

CC -6 : PUBLIC ADMINISTRATION – BASIC THEORIES

CC-7 : LOCAL GOVERNMENT IN INDIA

CC-8 : INTERNATIONAL RELATIONS

CC-9 : SOCIOLOGY AND POLITICS

CC-10 : INTERNATIONAL ORGANIZATIONS

CC-11 : SOCIAL MOVEMENTS IN INDIA

CC-12 : ELEMENTARY RESEARCH METHODS IN POLITICAL SCIENCE

CC-13 : INDIAN FOREIGN POLICY

CC-14 : CONTEMPORARY ISSUES IN INDIA

DISCIPLINE SPECIFIC ELECTIVE (DSE)

DSE-1 : SELECT COMPARATIVE POLITICAL THOUGHT Or,

ADVANCED POLITICAL THEORY

DSE-2 : DEMOCRACY AND DECENTRALIZED GOVERNANCE Or,

UNDERSTANDING GOOD GOVERNANCE

DSE-3 : PUBLIC POLICY: CONCEPTS AND IMPLEMENTATION IN INDIA Or,

LOCAL GOVT. IN WEST BENGAL

DSE-4 : UNDERSTANDING GLOBALIZATION Or,

POLITICAL ECONOMY OF INTERNATIONAL RELATIONS

GENERIC ELECTIVE (FOR THE STUDENTS OF OTHER DISCIPLINES)

GE-1 :WESTERN POLITICAL THOUGHT

GE-2 :POLITICAL THEORY

GE-3: INDIAN POLITICAL THOUGHT

GE-4: INDIAN GOVERNMENT AND POLITICS

SKILL ENHANCEMENT COURSES(SEC)

SEC-1 : LEGISLATIVE SUPPORT Or, PEACE AND CONFLICT RESOLUTION.

SEC-2 : PUBLIC OPINION AND SURVEY RESEARCH Or, DEMOCRATIC AWARENESS THROUGH LEGAL LITERACY.

CC-9 : SOCIOLOGY AND POLITICS 6 Credits Total Classes : 60

1. Political Sociology and Sociology of Politics: Nature and Scope

2. Political Culture: Meaning, Components and Types; Political Socialization: Meaning, Role and Agencies

3. Political Participation: Meaning and Components

4. Concepts of Power and Authority; Types of Authority

5. Feminism: Meaning, Significance and Different Schools

6. Environment and Politics; Environment Movements: An Overview; Eco-Feminism

1. .

SEMESTER-V

CC-11 : SOCIAL MOVEMENTS IN INDIA **6** Credits Total Classes 60

1. Social Movements: Definition; Distinction between "new" and "old" social movements

2. Positive discrimination and Dalit movements(Panthers) in India

3. Trade Union movements in India: an overview of strength and weaknesses.

4. Peasant moments in India: Case Study (Telengana and Tebhaga)

5. Women's movements in India: key issues

6. Environmental Movements in India: Chipko, Narmada Bachao Andolan.

Suggested Readings:

1. Shah, Ghanshyam, *Social Movements in India: A Review of Literature* (New Delhi: Sage)

2. Shah, Ghanshyam, *Social Movements and the State* (New Delhi: Sage)

3. Ray, Raka and Katzenstain, Mary Fainsod, *Social Movements in India: Poverty, Power, and Politics,*

(Rowman and Littlefield Publishers)

4. Singh, A. P., *Development Process and Social Movements in Contemporary India*(Pinnacle Learning)
5. Kumar, Bijendra, *Social Movement in Modern India*(DPS Publishing House)
6. Joshi, Sarat. C., *Contemporary Social Mobility and Social Movements: Views and Reviews* (Akansha
Publication)

7. Banerjee, Parthasarathi, "Land Acquisition and Peasant Resistance at Singur", *Economic and Political Weekly*
November 18, 2006. Available at: http://sanhati.com/wp-content/uploads/2007/03/acquisitionsingur.pdf

1. **Sushila Ramasawamy-Political Theory-Ideas And Institutions, PHI**

2. **SP Verma, Modern Political Theory, Vikas Publishing House**

3. **Terrence Ball, Reappraising Political Theory**

4. **David Marsh and Gerry Stoker-Theory And Methods in Politics.**

DSE - 2 :Democracy and Decentralized Governance 6 Credits Total Classes 60

1 Evolution of the state system and the concept of sovereignty.
2 Global Economy: Bretton Woods institutions(WORLD BANK, IMF) and W.T.O.
3. Transnational economic actors-Role of MNC s.

4. Global Poverty: Sustainable Development Goal.
5. Dynamics of Civil Society: New Social Movements and Various interests, Role of NGOs.

Suggested Readings:

1. Chakrabarty, Bidyut and Bhattacharya, Mohit (eds.), *The Governance Discourse* (New Delhi: Oxford)
2. Smith, B.C., *Good Governance and Development* (Palgrave)
3. Evans, J. P., *Environmental Governance* (Routledge)
4. Rosenau, J. and Czempiel, E., (eds.) *Governance without Government: Order and Change in World Politics* (Cambridge: CambridgeUniversity Press)
5. Mander, H. and Asif, M., *Good Governance* (Bangalore: Books for Chance)

OR

DSE-2 :UNDERSTANDING GOOD GOVERNANCE 6 Credits Total Classes 60

1. Meaning and evolution of the concept.

2 .Good governance – Basic components

3. Forms of governance:Concept and Basic Features

SEMESTER-VI

CC-13 : Indian Foreign Policy

6 Credits Total Classes 60

1. Key Determinants Of India's Foreign Policy-Geography, Parliament, Cabinet, PMO.

2. India's Foreign Policy towards her neighbours; Recent engagement with Pakistan, Bangladesh and Nepal, Bhutan

3. India and the major powers-USA, China, Russia

4. Recent trends in India's Foreign Policy.

Suggested Readings:

1. Dubey, M, *India's Foreign Policy* (New Delhi: Orient Black Swan)

2. Dutt, Sagarika, *India in a Globalized World*, (Manchester: ManchesterUniversity Press)

3. Malone, David M. and others, *Oxford Handbook of India's Foreign Policy*, (Oxford University Press)

4. C Raja Mohan, Modi's World-Expanding India's Sphere Of Influence,(Harper Collins)

CC-14 : Contemporary Issues in India

6 Credits Total Classes 60

1. **Caste System in India – Its changing nature and dynamics.**
2. **Women – Discrimination and violence against women..**
3. **Secularism and Communalism**
4. **Political Economy of Poverty and Inequality**
5. **Rights of Persons With Disabilities (PWDs) inIndia.**
6. **Social Backwardness and Protective Discrimination**
7. **Disaster Risk Reduction and Development Planning**

Suggested Readings

Guha, Ramachandra.India after Gandhi.London: Picador, 2007.

Chakrabarty, D., RochonaMajumdar, Andrew Sartori.From the Colonial to the Post-Colonial: India and Pakistan in Transition. New Delhi:OUP, 2007.

Chaterjee, Parthaed.State and Politics in India. New Delhi: OUP, 1994.

Balakrishnan, P. Economic Growth and its Distribution in India. Hyderabad: Orient Black Swan, 2005.

Vinaik, Achin and Rajeev Bhargava.Understanding Contemporary India, Hyderabad: Orient Black Swan, 2010.

Bilgrami, A.Democratic Culture, New Delhi: Routledge, 2011.
Kothari, Rajni. Caste in Indian Politics. New Delhi: Orient Longman, 1970.

Beteille, A. Democracy and Its Institutions. New Delhi: OUP, 2012.

Frankel, Francine R. India's Political Economy. New Delhi: OUP, 2005.

Frankel, Francine R., ed. Transforming India: Social and Political Dynamics of Democracy. Oxford: OUP, 2000.
King, Robert D. Nehru and the Language Politics of India. New Delhi: OUP, 1997.

Hasan, Zoya. Parties and Party Politics in India. New Delhi: OUP, 2004. Dhawan, Rajeev, ed. Law and Society in Modern India. New Delhi: OUP, 1997.

Dreze, Jean and Amartya K. Sen. Indian Development: Selected Regional Perspectives. New Delhi: OUP, 1997.

Kochanek, Stanley.The Congress Party of India: the Dynamics of One Party Democracy. Princeton: PUP, 1968.

Austin, Granville.Working a Democratic Constitution: the Indian Experience. New Delhi: OUP, 1999.

Kohli, Atul.TheState and Poverty in India: the Politics of Reform. Cambridge: CUP, 1987.

Jaffrelot, Christophe. The Hindu Nationalist Movement and Indian Politics 1925 to 1990s. New Delhi: Penguin, 1999.

THE UNIVERSITY OF BURDWAN

Burdwan-713104, West Bengal

SYLLABUS FOR B.A. GENERAL

IN

HISTORY

UNDER SEMESTER WITH CBCS

(Effective from 2017- 18)

UG Syllabus BA General CBCS Pattern – 2017

Semester	Courses Offered	Name of the Course/Paper	Credit	Full Marks
	Core Courses (CC)			
Semester - I	Discipline - I History CC Paper – I A	History of India From Earliest Times to 300 AD)	6	75
	Discipline - 2 Other subject CC Paper – 2 A	To be taken from other discipline	6	75
	Eng. Language (Core Course)	English - I	6	75
	Ability Enhancement Courses (AECC)			
	AECC Paper - I	Environmental Studies	4	100
Total	4		22	325

Semester	Courses Offered	Name of the Course/Paper	Credit	Full Marks
	Core Courses (CC)			
Semester - II	Discipline - I History CC Paper – I B	History of India From 300 to 1206 AD)	6	75
	Discipline - 2 Other subject CC Paper – 2 B	To be taken from other discipline	6	75
	Hindi/MIL (Core Course)	Language - 2	6	75
	Ability Enhancement Core Courses (AECC)			
	AECC Paper - II	Communicative English/ MIL	2	50
Total	4		20	275
Semester	Courses Offered	Name of the Course/Paper	Credit	Full Marks
	Core Courses (CC)			
Semester - III	Discipline - I History CC Paper – I (C)	History of India From 1206-1707 AD)	6	75
	Discipline - 2 Other	To be taken from	6	75

	subject CC Paper – 2 (C)	other discipline		
	English Language	English - 2	6	75
	Skill Enhancement Courses (AEC)			
	SEC Paper - I	Museums & Archives in India **OR** Indian History & Culture	2	50
Total	4		20	275

Semester	Courses Offered	Name of the Course/Paper	Credit	Full Marks
	Core Courses (CC)			
Semester - IV	Discipline - I History CC Paper – I D	History of India From 1707 - 1950 AD)	6	75
	Discipline - 2 Other subject CC Paper – 2 D	Social Formations & the Cultural Pattern of the Ancient World	6	75
	Hindi/MIL (Core Course)	Language - 2	6	75
	Skill Enhancement Courses (SEC)			
	SEC Paper - II	Understanding Heritage **OR** Ethnographic Practices in India: Tradition of Embroidery, Textile making, Knitting, Handicrafts	2	50
Total	4		20	275

Semester	Courses Offered	Name of the Course/Paper	Credit	Full Marks
	Discipline Specific Eledtive (DSE)			
Semester - V	DSE Paper – I A History	Some Aspects of Society & Economy	6	75

		of Modern Europe: (15^{th} to 18^{th} Century) **OR** Political History of Modern Europe: (15^{th} to 18^{th} Century)		
	DSE Paper – 2 A Other Subject	To be taken from other discipline	6	75
	Generic Elective (GE) For Other Disciplines			
	GE Paper - I	Women's Studies in India **OR** Some Perspectives on Women's Rights in India	6	75
	Skill Enhancement Courses (SEC)			
	SEC - III	Understanding Popular Culture **OR** An Introduction to Archaeology	2	50
Total	4		20	275

Semester	Courses Offered	Name of the Course/Paper	Credit	Full Marks
	Discipline Specific Eledtive (DSE)			
Semester - VI	DSE Paper – I B History	Some Aspects of European History (1789 - 1945)	6	75
	DSE Paper – 2 B Other Subject	To be taken from other discipline	6	75
	Generic Elective (GE) For Other Disciplines			
	GE Paper - II	Gender & Education in India OR History of Indian Journalism	6	75
	Skill Enhancement Courses (SEC)			
	SEC - IV	Art Appreciation : An Understanding to Indian Art **Or**	2	50

		Orality & Oral Culture in India		
Total	4		20	275

Semester V BA

General

(Generic Elective Paper)

Paper –I

Women's Studies in India

6 Credits, Total 75 marks (60 + 15)

Total Lectures - 60

I. Basic Concepts & Theories

a. Defining Gender
b. Patriarchy: Ideology and Practice
c. Relationship between Gender, Caste, Class Religion & Politics

II. Emergence of Women Studies in India

a. A Survey from the 1980s
b. Women Studies: Regional Centres; the Core-Periphery discourse
c. Academic connect with Activism

III. Gender & Social History

a. Family & Marriage
b. Women's question in the 19th century
c. Women's movement in Colonial & Post-Colonial India

IV. Gender, Law & Politics

a. Political Participation
b. Violence against Women – Preventive laws

V. Gender & Development

a. Issues of Labour& Health
b. Access to resources

c. Gender Audit

VI. Gender & Culture

a. Cultural Practices and Gender
b. Interrogating Gender through the lens of culture
c. Regional Cultures and Gender in India

References

1. KamlaBhasin, Understanding Gender
2. KamlaBhasin, What is Patriarchy
3. MadhuVij, et al, Women Studies in India, A Journey of 25 Years, Rawat 2014
4. KumkumSanghari&SudeshVaid, Recasting Women, Essay in Colonial History, Kali For Women, Reprint 2006
5. SushilaKaushik, Panchayati Raj in Action: Challenges to Women's Role, Delhi 1996
6. NiveditaMenon, Gender & Politics in India, New Delhi OUP, 1999
7. Women in Print – the Change over the last half century in reporting on women & Gender Issues in Indian newspapers A Study by UNIFEM, by ShriVenkatram, 2013

(OR)

Semester V BA

General

(Generic Elective Paper)

Paper –I

Some Perspectives on Women's Rights in India

6 Credits, Total 75 marks (60 + 15)

Total Lectures - 60

I. Definition of Human Rights

Human Rights and Women, a survey of the Charter
Interrogating Human Rights vis-à-vis personal laws in India
UN Convention and indian Context

II. Indian Constitution and Women's Rights

Fundamental Rights and Women
Directive Principles and Women

Major legal cases defending women's rights vis-à-vis the Constitution

III. **Preventive Acts**
Minimum Wage Act 1948, Family Courts Act 1986, PNDT Act 1994,
Latest measures

IV. **Issues of Violence against Women and Remedial Measures**
Domestic Violence Act, Prevention of Sexual Harassment at Workplace
Practical application and Problems, Remedial Measures

V. **Role of Non-Government Institutions**
Non-Government Organizations and Human Rights
Women and Non-Gorvernment Organizations – Participations

VI. **Present Status**
Issues of enabling and empowering modalities – Debate on uniform civil code

References

1. UrvashiButalia&TanikaSarkar, (ed.), Women & Hindu Rights, New Delhi, Kali for Women, 1996
2. ZoyaHasan (ed.), Forging Identities, Communities & Patriarchies, EPW, December 1995
3. BinaAgarwal, Field of Her Own, New Delhi, Kali for Women,

Semester VI BA

General

(Generic Elective Paper)

Paper –II

Gender & Education in India

6 Credits, Total 75 marks (60 + 15)

Total Lectures - 60

I. **Historiographical Trends**
   a. Pre-colonial historiographical trends in women's education
   b. colonial historiographical trends in women's education
   c. Post-colonial historiographical trends in women's education

II. **Education in Early and Medieval Times**
   a. Women's Education in Medieval times
   b. Regional trends of Women's education in pre-colonial India
   c. Instances of women's education, obstacles

III. **Colonial Period**
   a. Socio-religious reforms
   b. Role of Christian missionaries in spreading female education, recent debates
   c. Indigenous initiatives at women's education

IV. **Role of Schools and Colleges in colonial and post-colonial period**
   a. Girls School and Colleges, development towards co-education
   b. Expansion of infrastructural facilities in education
   c. Technical and vocational education for women

V. **Contours of female literacy since 1950**
   a. Interrogating literacy for women
   b. Government policies and Schemes
   c. Disparities in Literacy: Region, Community, Social and Eco-factors

VI. **Present Scenario**
   a. Education as a tool of Empowerment

References

1. AparnaBasu, Growth of Education and Political Development in India, 1898 – 1920
2. Usha Sharma, Women Education in Modern India
3. Ramnath Sharma &Rajender Sharma, History of Education in India, Atlantic Publishers, 1996
4. AparnaBasu&Bharati Ray (ed.), Women's Struggle. A History of the All India Women's Conference 2002

The University of Burdwan

Syllabus for B.A. / B.Sc. (Hons.)

in

Geography

under Semester with

Choice Based Credit System

w.e.f. 2017- 2018

COURSE STRUCTURE UNDER CHOICE BASED CREDIT SYSTEM FOR BA/B.Sc. HONOURS IN GEOGRAPHY

Semester-wise course structure

YEAR	SEMESTER	CORE COURSE (CC) (14)	ABILITY ENHANCEMENT COURSE (AECC) (2)	SKILL ENHANCEMENT COURSE (SEC) (2)	DISCIPLINE SPECIFIC ELECTIVE (DSE) (4)	GENERIC ELECTIVE (GE) (4)
FIRST YEAR	I	CC-1. GEOTECTONICS AND GEOMORPHOLOGY CC-2. Catrographic Techniques and Geological Map study	ENVIRONMENTAL STUDIES			GE-1 (Any discipline other than Geography)
	II	CC-3. HUMAN GEOGRAPHY CC-4. CARTOGRAMS AND THEMATIC MAPPING	COMMUNICATIVE ENGLISH/MIL			GE-2 (Any discipline other than Geography)
SECOND YEAR	III	CC-5. CLIMATOLOGY CC-6. STATISTICAL METHODS IN GEOGRAPHY CC-7. GEOGRAPHY OF INDIA		SEC-1. COMPUTER BASICS AND COMPUTER APPLICATIONS OR REMOTE SENSING		GE-3 (Any discipline other than Geography)
	IV	CC-8. REGIONAL PLANNING AND DEVELOPMENT CC-9. ECONOMIC GEOGRAPHY CC-10. ENVIRONMENTAL GEOGRAPHY		SEC-II ADVANCED SPATIAL STATISTICAL TECHNIQUES OR FIELD WORK		GE-4 (Any discipline other than Geography)
THIRD YEAR	V	CC-11. RESEARCH METHODOLOGY AND FIELD WORK CC-12. REMOTE SENSING AND GIS			DSE – 1 URBAN GEOGRAPHY OR CULTURAL AND SETTLEMEMT GEOGRAPHY DSE – 2 POPULATION GEOGRAPHY OR SOCIAL GEOGRAPHY	
	VI	CC-13. EVOLUTION OF GEOGRAPHICAL THOUGHTS CC-14. DISASTER MANAGEMENT			DSE – 3 FLUVIAL GEOMORPHO - LOGY OR RESOURCE GEOGRAPHY DSE – 4 SOIL AND BIO GEOGRAPHY OR AGRICULTURAL GEOGRAPHY	

COURSE STRUCTURE UNDER CHOICE BASED CREDIT SYSTEM FOR B.A/B.Sc. HONOURS IN GEOGRAPHY

Semester-wise distribution of Credits and marks

SEMESTER	COURSE OPTED	COURSE NAME	CREDIT	MARKS			NO. OF HOURS L-T-P (PER WEEK)
				IA	ESE	TOTAL	
I	ABILITY ENHANCEMENT: COMPULSORY COURSE - I	ENVIRONMENTAL STUDIES	4		100	100	
	CORE COURSE (CC 1)	GEOTECTONICS AND GEOMORPHOLOGY	6	15	60	75	5-1-0
	CORE COURSE (CC2)	CARTOGRAPHIC TECHNIQUES AND	4	15	40	75	4-0-0
		GEOLOGICAL MAP STUDY	2		20		0-0-4
	GENERIC ELECTIVE (GE1)	ANY DISCIPLINE OTHER THAN GEOGRAPHY	6	15	60	75	5-1-0
	TOTAL		**22**			**325**	
II	ABILITY ENHANCEMENT: COMPULSORY COURSE - II	COMMUNICATIVE ENGLISH/ MIL	2		50	50	
	CORE COURSE (CC3)	HUMAN GEOGRAPHY	6	15	60	75	5-1-0
	CORE COURSE (CC4)	CARTOGRAMS, SURVEY AND	4	15	40	75	4-0-0
		THEMATIC MAPPING	2		20		0-0-4
	GENERIC ELECTIVE (GE2)	ANY DISCIPLINE OTHER THAN GEOGRAPHY	6	15	60	75	5-1-0
	TOTAL		**20**			**275**	
III	CORE COURSE (CC5)	CLIMATOLOGY	6	15	60	75	5-1-0
	CORE COURSE (CC6)	STATISTICAL METHODS IN	4	15	40	75	4-0-0
		GEOGRAPHY	2		20		0-0-4
	CORE COURSE (CC7)	GEOGRAPHY OF INDIA	6	15	60	75	5-1-0
	SKILL ENHANCEMENT COURSE (SEC1)	SEC- 1 (COMPUTER BASICS AND COMPUTER APPLICATIONS OR REMOTE SENSING)	2	10	40	50	0-0-4
	GENERIC ELECTIVE (GE3)	ANY DISCIPLINE OTHER THAN GEOGRAPHY	6	15	60	75	5-1-0
	TOTAL		**26**			**350**	
IV	CORE COURSE (CC8)	REGIONAL PLANNING AND DEVELOPMENT	6	15	60	75	5-1-0
	CORE COURSE (CC9)	ECONOMIC GEOGRAPHY	6	15	60	75	5-1-0
	CORE COURSE (CC10)	ENVIRONMENTAL GEOGRAPHY	4	15	40	75	4-0-0
			2		20		0-0-4
	SKILL ENHANCEMENT COURSE (SEC2)	SEC- 2 ADVANCED SPATIAL STATISTICAL TECHNIQUES OR FIELD WORK	2	10	40	50	0-0-4
	GENERIC ELECTIVE (GE4)	ANY DISCIPLINE OTHER THAN GEOGRAPHY	6	15	60	75	5-1-0
	TOTAL		**26**			**350**	

SEMESTER	COURSE OPTED	COURSE NAME	CREDIT	MARKS			NO. OF HOURS L-T-P (PER WEEK)
				IA	ESE	TOTAL	
V	CORE COURSE (CC11)	RESEARCH METHODOLOGY AND FIELD WORK	4	15	40	75	4-0-0
			2		20		0-0-4
	CORE COURSE (CC12)	REMOTE SENSING AND GIS	4	15	40	75	4-0-0
			2		20		0-0-4
	DISCIPLINE SPECIFIC ELECTIVE (DSE)	DSE – 1 URBAN GEOGRAPHY OR CULTURAL AND SETTLEMENT GEOGRAPHY	6	15	60	75	5-1-0
	DISCIPLINE SPECIFIC ELECTIVE (DSE)	DSE 2 POPULATION GEOGRAPHY OR SOCIAL GEOGRAPHY	6	15	60	75	5-1-0
	TOTAL		**24**			**300**	
VI	CORE COURSE (CC13)	EVOLUTION OF GEOGRAPHICAL THOUGHTS	6	15	60	75	5-1-0
	CORE COURSE (CC14)	DISASTER MANAGEMENT	4	15	40	75	4-0-0
			2		20		0-0-4
	DISCIPLINE SPECIFIC ELECTIVE(DSE3)	DSE – 3 FLUVIAL GEOMORPHOLOGY OR RESOURCE GEOGRAPHY	6	15	60	75	5-1-0
	DISCIPLINE SPECIFIC ELECTIVE(DSE4)	DSE – 4 SOIL AND BIO GEOGRAPHY OR AGRICULTURAL GEOGRAPHY	6	15	60	75	5-1-0
	TOTAL		**24**			**300**	
	TOTAL OF ALL SEMESTERS		**142**			**1900**	

*L-T-P = LECTURE-TUTORIAL-PRACTICAL

GE 3 – Human Geography and Map Study

Unit I: Human Geography (Theory) **Credit4**

1. Definition, Nature, Major Subfields, Contemporary Relevance
2. Space and Society: Cultural Regions; Race; Religion and Language
3. Eskimos: Adjustment to the environment and recent development
4. Population: Population Growth and Demographic Transition Theory
5. Types of population migration with reference to India
6. *World Population Distribution and Composition (Age, Gender and Literacy)*
7. Settlements: Types and Patterns of Rural Settlements;
8. Classification of Urban Settlements; Functional classification of towns

Reading List

1. Chandna, R.C. (2010) Population Geography, Kalyani Publisher.
2. Daniel, P.A. and Hopkinson, M.F. (1989) The Geography of Settlement, Oliver & Boyd, London.
3. Johnston R; Gregory D, Pratt G. et al. (2008) The Dictionary of Human Geography, Blackwell Publication.
4. Jordan-Bychkov et al. (2006) The Human Mosaic: A Thematic Introduction to Cultural Geography. W. H. Freeman and Company, New York.
5. Kaushik, S.D. (2010) ManavBhugol, Rastogi Publication, Meerut.
6. Maurya, S.D. (2012) ManavBhugol, ShardaPustakBhawan. Allahabad.
7. Ghosh, S. (2015) Introduction to settlement geography. Orient Black Swan Private Ltd.,Kolkata
8. Hussain, Majid (2012) ManavBhugol. Rawat Publications, Jaipur

Semester - IV

CC8 (Theoretical) : REGIONAL PLANNING AND DEVELOPMENT Credit: 6

Unit 2: Regional Development

1. Development: Meaning, Growth versus Development
2. Models for Regional Development: Growth Pole (Perroux) and Core Periphery (Hirschman)
3. Model for Regional Development in India: Growth Foci (R.P.Misra)
4. Concept of Regional Inequality and Disparity
5. Human Development: Significance, Indicators and Measurement
6. Status of Regional Imbalances in India
7. Strategies for Regional Development in India
8. NITI Aayog and its Functions

References:

- Berry, BJ.L. and Horton, F.F. (1970): Geographic Perspectives on Urban Systems.Prentice Hall, New Jersey
- Bhat L.S. (1972): Regional Planning In India, Statistical Publishing Society
- Blij H. (1971): Geography: Regions and Concepts, John Wiley and Sons

- Chand,M and Puri, V.K. (1983): Regional planning In India, Allied publishers, New Delhi
- Claval P.L (1998): An Introduction to Regional Geography, Blackwell Publishers, Oxford and Massachusetts

- Dickinson, R.E. (1964): City and Region, Rutledge, London
- Friedmann J. and Alonso W. (1975): Regional Policy - Readings in Theory and Applications, MIT Press, Massachusetts
- Glasson John: An Introduction to regional planning,concepts, Theory and Practise
- Gore C. G.(1984): Regions in Question: Space, Development Theory and Regional Policy, Methuen, London
- Gore C. G., Köhler G., Reich U-P. and Ziesemer T., 1996: Questioning Development; Essays on the Theory, Policies and Practice of Development Intervention, Metropolis-Verlag, Marburg
- Hall, P. (1992): Urban and Regional Planning, Routledge, London
- Haynes J. (2008): Development Studies, Polity Short Introduction Series
- Johnson E. A. J.(1970): The Organization of Space in Developing Countries, MIT Press, Massachusett
- Kapila U, Indian Economy since Independence, 17th edition,2016-2017
- Kulshetra, S.K (2012): Urban and Regional Planning in India: A hand book for ProfessionalPractioners , Sage Publication, New Delhi
- Kundu, A. (1992): Urban Development Urban Research in India, Khanna Publ. New Delhi
- Misra , R.P, Sundaram K.V, PrakashRao , VLS (1974): Regional Development Planning in India , Vikas Publication , New Delhi
- Misra, R.P (1992): Regional Planning: Concepts, techniques, Policies and Case Studies, Concept, New Delhi
- Peet, R.(1999): Theories of Development, The Guilford Press, New York
- William Thomas, Christopher A.J.(2013): Rural development:concept and recent approaches,2013(for growth versus development, pp:1-4

DSE-2 (Theoretical) : SOCIAL GEOGRAPHY Credit: 6

Total Marks: 60+15 End Term Examination Time: 3 hours

Pattern of Setting Questions:

- 10 questions to be answered out of 15, each question carries 02 Marks, Total 20 Marks;
- 4 questions to be answered out of 6, each question carries 05 Marks,Each question shall have at least two parts. Total 20 Marks;
- 2 questions to be answered out of 4, each question carries 10 Marks, Totalling 20 Marks;
- Internal Assessment: 15 (Assessment 10 and Attendance 05 Marks) Marks

Unit: 1

1. Social Geography: Nature, Scope and Content
2. Social Groups and Social Behaviour
3. Concept of Social Structure and Process
4. Elements of Social Structure: Caste, Class, Religion, Race
5. Social Stratification in India
6. Contemporary Social Issues in India: Gender and Old-age

The University of Burdwan

B.A./B.Sc. (Honours)
In
Economics
w.e.f. 2017-18
under Semester with CBCS

Structure of Syllabus for BA/B.Sc.Honours in Economics under Semester with CBCS

Students must have to pass in Mathematics/ Business Mathematics or equivalentat +2 Level

SEM	*Paper Code*	*Paper Description*	*Course Type*	*L-T-P*	*Credit*	*Marks*
I		Introductory Microeconomics	**CC-1**	5-1-0	6	75
		Statistics-I	**CC-2**	5-1-0	6	75
		AECC-I ENVS	AECC-1	4-0-0	4	100
		Generic Elec(GE)-I – any discipline other than Economics	GE-1	5-1-0	6	75
II		IntroductoryMacroeconomics	**CC-3**	5-1-0	6	75
		Mathematical Economics –I	**CC-4**	5-1-0	6	75
		AECC-II Communicative English / MIL	AECC-2	2-0-0	2	50
		Generic Elec(GE)-II – any discipline other than Economics	GE-2	5-1-0	6	75
III		IntermediateMicroeconomics	**CC-5**	5-1-0	6	75
		IntermediateMacroeconomics	**CC-6**	5-1-0	6	75
		MathematicalEconomics –II	**CC-7**	5-1-0	6	75
		SkillEnhCourse (SEC)-I	SEC-1	2-0-0	2	50
		Generic Elec(GE)-III – any discipline other than economics	GE-3	5-1-0	6	75
IV		Selected Features of Indian Economy	**CC-8**	5-1-0	6	75
		Statistics-II	**CC-9**	5-1-0	6	75
		Development Economics	**CC-10**	5-1-0	6	75
		SkillEnhCourse(SEC)-II	SEC-2	2-0-0 0-0-2	2	50
		Generic Elec(GE)–IV – any discipline other than economics	GE-4	5-1-0	6	75

V		International Economics	**CC-11**	5-1-0	6	75
		Money and Banking	**CC-12**	5-1-0	6	75
	*	DiscSpElective(DSE)-I	**DSE-1**	5-1-0	6	75
	*	DSE-II	**DSE-2**	5-1-0	6	75
VI		Basic Econometrics	**CC-13**	5-1-0	6	75
		Field Survey& Project Report	**CC-14**	0-0-6	6	75
	*	DSE-III	**DSE-3**	5-1-0	6	75
	*	DSE-IV	**DSE-4**	5-1-0	6	75

*** Discipline Specific Electives**

DSE 1 (Semester V)	**DSE 3 (Semester VI)**
Rural Development Or Selected Features of West Bengal Economy	Social Economics Or Political Economy
DSE 2 (Semester V)	**DSE 4 (Semester VI)**
Environmental Economics Or Public Economics	Entrepreneurship Development Or Financial Economics

*** Skill Enhancement Courses**

SEC 1 (Semester-III)	**SEC 2 (Semester-IV)**
Indian Official Statistics Or Insurance Market & Products Or Managerial Economics	Basic Computer Applications Or Indian Stock Market Trading Or Business Project Formulation & Appraisal

Generic Electives (for other disciplines

GE 1 : Microeconomics
GE 2 : Macroeconomics
GE 3: Development Economics
GE 4: Features of Indian Economics

Honours Course Structure

Semester	*Core Course*	*Subject Elective (DSE)*	*Generic Elective (other dept)*	*AECC*	*AECC*	*SEC*	*Total Courses*	*Total Credits*
	6 credits	*6 credits*	*6 credits*	*2 credits*	*4 credits*	*2 credits*		
I	2		1		1		*4*	*22*
II	2		1	1			*4*	*20*
III	3		1			1	*5*	*26*
IV	3		1			1	*5*	*26*
V	2	2					*4*	*24*
VI	2	2					*4*	*24*
Total Courses	*14*	*4*	*4*	*2*	*4*	*2*	*26*	
Total Credits	*84*	*24*	*24*	*2*	*4*	*4*		*142*

Discipline Specific Elective Papers in Semester -VI

OR

DSE 3

Political Economy

Full Marks: 75 **Credit: 6** **Lectures: 70**

1. **Classical Economic Thoughts:** **L30**

a) Economic thoughts of Adam Smith, Ricardo, and Marx; b) Concept of labour theory of value: Classical political approach of Smith, Ricardo and Marx; criticism; c) Land (Theory of Rent): Classical political approach of Smith, Ricardo and Marx; criticism; Economic thoughts of Gandhi, Nehru, Gokhle, Netaji, and Rabindranath; criticism.

2. **Political System:** **L15**

a) Basic features and functioning of the Physiocracy, Mercantilism, Feudalism, Capitalism and Socialism. b) *Social Transition***:** Feudalism to Capitalism; Capitalism to Socialism; b) Stages of Growth: Marx & Rostow

3. **Analysing the social changes:** **L20**

The method of historical materialism; a) Marxian theory of value, Quantitative and qualitative aspect of value; Components of value, Value of Constant and variable capital; Surplus value, Circuit of capital, surplus value and organic composition of capital Commodity fetishism; the reserve army of labour b) Simple reproduction.

The law of falling rate of profit, Theories of crises: The under consumption crises, realization crises and disproportionality crises. c) Emergence of socialism; social mode of extraction of surplus value; socialist pricing.

4. **The state and the economy** – contestation and mutual interdependence, the state as an arena of conflict; imperialism - the basic foundations. **L5**

References:

1. J.Gurley. The materialist conception of history
2. O. lange Political Economy, 2nd edition
3. E.K. Hunt History of Economic Thought, M.E. Sharp Indian Edition
4. Irfan Habib 1995 "Capitalism in history" Social Scientist vol 23:15-23
5. P. Sweezi The theory of capitalist development
6. Vamsi Vakulavaranam 2009 – The recent crises in global capitalism. Towards a Marxian Understanding,EPW, march28,vol 44, 144-150
7. Anwar Shaikh Entries on "Economic crises" and "falling rate of profit" in T. Bottoore et al {eds), The dictionary of Marxian Thought,OUP, Indian edition, Maya blackwe,2000.
8. J. Shumpiter Capitalism, Socialism and democracy, George Allen and Unwin,1976, Ch 6,7 and 8

SURI VIDYASAGAR COLLEGE

(Govt. Sponsored & Constituent college of the University of Burdwan)
SURI, BIRBHUM, PIN – 731101, Ph. No. – 03462-255504
Website : surividyasagarcollege.org.in, e-mail: : surividyasagarcollege1942@gmail.com
This Institution is Ragging Free

University prescribed curriculum which includes in its different segments and components cross-cutting issue of

Environment and Sustainability

2017

THE UNIVERSITY OF BURDWAN

SYLLABUS FOR THREE-YEAR DEGREE COURSE IN ZOOLOGY (HONS) UNDER CHOICE BASED CREDIT SYSTEM (CBCS)

(With effect from the session 2017-2018)

Contents

1. Introduction

The syllabus for Zoology at undergraduate level using the Choice Based Credit system has been framed incompliance with model syllabus given by UGC.

The main objective of framing this new syllabus is to give the students a holistic understanding of the subject giving substantial weightage to both the core content and techniques used in Zoology.

Keeping in mind and in tune with the changing nature of the subject, adequate emphasis has been given on new techniques and understanding of the subject.

The syllabus has also been framed in such a way that the basic skills of subject are taught to the students, and everyone might not need to go for higher studies and the scope of securing a job after graduation will increase.

There is wide deviation in the infrastructure, be it physical or in human resource, in the form of teachers' expertise and ability and aspiration of the students. Hence, University is free to choose the Electives as per their infrastructural strengths and offeratleast6 to7 electives. While the syllabus is in compliance with UGC model curriculum, it is necessary that Zoology students should learn "Immunology" as one of the core courses rather than as elective. Also, an important discipline specific elective on "Microbiology" has been added.

Project Work may be introduced instead of the 4th Elective with a credit of 6 split into 2+4, where 2credits will be for continuous evaluation and 4 credits reserved for the merit of the dissertation.

2. Scheme for CBCS Curriculum

2.1. Credit Distribution across Courses

Course Type	Number of Courses	Credits		
		Theory + Practical	Theory+ Practical	Total
Core Courses	14	14×4=56	14×2=28	84
Discipline Specific	04	4×4=16	4×2=8	24
Generic Elective	04	4×4=16	4×2=8	24
Language Courses & ENVS	02	4×1=4 2×1=2		6
Skill Enhancement Course	02	2×2=4		4
Total	26	98	44	142

2.2. Scheme for CBCS Curriculum

Semester	Course Name	Course Detail	Credits
I	Ability Enhancement Compulsory Course–I	Environmental Studies	4
	Core course–I	Non-chordates I	4
	Core course–I Practical	Non-chordates I Lab	2
	Core course–II	Ecology	4
	Core course–II Practical	Ecology Lab	2
	Generic Elective–1*	Animal Diversity	4
	Generic Elective–1 Practical*	Animal Diversity Lab	2
II	Ability Enhancement Compulsory Course–II	Communicative English/MIL	2
	Core course–III	Non- chordates II	4
	Core course–III Practical	Non- chordates II Lab	2
	Core course–IV	Cell Biology	4
	Core course–IV Practical	Cell Biology Lab	2
	Generic Elective–2*	Comparative Anatomy & Developmental Biology of Vertebrates	4
	Generic Elective–2 Practical*	Comparative Anatomy & Developmental Biology of Vertebrates Lab	2
III	Core course–V	Chordates	4
	Core course–V Practical	Chordates Lab	2
	Core course–VI	Animal Physiology: Controlling and Coordinating Systems	4
	Core course–VI Practical	Animal Physiology: Controlling and Coordinating Systems Lab	2
	Core course–VII	Fundamentals of Biochemistry	4
	Core course – VII Practical	Fundamentals of Biochemistry Lab	2
	Skill Enhancement Course–1	Apiculture or Sericulture	2
	Generic Elective–3*	Physiology and Biochemistry	4
	Generic Elective–3 Practical*	Physiology and Biochemistry Lab	2

IV	Core course–VIII	Comparative Anatomy of Vertebrates	4
	Core course–VIII Practical	Comparative Anatomy of Vertebrates Lab	2
	Core course–IX	Animal Physiology: Life Sustaining Systems	4
	Core course–IX Practical	Animal Physiology: Life Sustaining Systems Lab	2
	Core course–X	Immunology	4
	Core course–X Practical	Immunology Lab	2
	Skill Enhancement Course-2	Medical Diagnostics or Aquarium Fish Keeping	2
	Generic Elective–4*	Genetics and Evolutionary Biology	4
	Generic Elective–4 Practical*	Genetics and Evolutionary Biology Lab	2
V	Core course–XI	Molecular Biology	4
	Core course–XI Practical	Molecular Biology Lab	2
	Core course–XII	Genetics	4
	Core course–XII Practical	Genetics Lab	2
	Discipline Specific Elective–1	Animal Biotechnology or Microbiology	4
	Discipline Specific Elective–1 Practical	Animal Biotechnology or Microbiology	2
	Discipline Specific Elective–2	Parasitology or Biology of Insects	4
	Discipline Specific Elective–2 Practical	Parasitology or Biology of Insects	2
VI	Core course–XIII	Developmental Biology	4
	Core course–XIII Practical	Developmental Biology Lab	2
	Core course–XIV	Evolutionary Biology	4
	Core course–XIV Practical	Evolutionary Biology Lab	2
	Discipline Specific Elective–3	Animal Behaviour or Wild life Conservation	4
	Discipline Specific Elective–3 Practical	Animal Behaviour or Wild life Conservation	2
	Discipline Specific Elective–4	Endocrinology or Reproductive Biology	4
	Discipline Specific Elective–4 Practical	Endocrinology or Reproductive Biology	2
			142

*For other subjects. For Zoology Hons. students, Generic Electives will be any subject(s) other than Zoology.

2.3. Compulsory Core Courses

Core Courses			
Non-chordates I	Ecology	Non-chordates II	Cell Biology
Chordates	Physiology: Controlling and Coordinating Systems	Fundamentals of Biochemistry	Comparative Anatomy of Vertebrates
Physiology: Life Sustaining Systems	Immunology	Molecular Biology	Genetics
Developmental Biology	Evolutionary Biology		

2.4. Choices for Discipline Specific Electives

Discipline Specific Elective–1 to 4			
Animal Behaviour	Animal Biotechnology	Biology of Insects	Endocrinology
Microbiology	Parasitology	Wildlife Conservation & Management	Reproductive Biology

2.5. Choices for Skill Enhancement Courses

Skill Enhancement Course-1 & Skill Enhancement Course-2			
Apiculture	Aquarium Fish Keeping	Medical Diagnostic Techniques	Sericulture

2.6. Generic Elective Courses

Generic Elective Courses-1 to 4	
Animal Diversity	Comparative Anatomy & Developmental Biology of Vertebrates
Physiology and Biochemistry	Genetics and Evolutionary Biology

2.7. Scheme of CBCS distribution

SEMESTER	CORE COURSE (With Practical)	GENERIC ELECTIVE	DISCIPLINE SPECIFIC ELECTIVE	SKILL ENHANCE-MENT COURSE	ABILITY ENHANCE MENT COMPULSORY COURSE
I	i. Non-chordates ii. Ecology	Animal Diversity	_____	_____	ENVS
II	iii. Non-chordates iv. Cell Biology	Comparative Anatomy & Developmental Biology of Vertebrates	_____	_____	Communicative Eng./ MIL
III	v. Chordate vi. Animal Physiology vii. Biochemistry	Physiology and Biochemistry	_____	Apiculture or Sericulture	
IV	viii. Comparative Anatomy ix. Animal Physiology x. Immunology	Genetics and Evolutionary Biology	_____	Medical Diagnostics OR Aquarium Fish Keeping	
V	xi. Molecular Biology xii. Genetics	_____	Animal Biotechnology OR Microbiology Parasitology OR Biology of Insects	_____	
VI	xiii. Developmental Biology xiv. Evolution		Animal Behaviour OR Wild Life Endocrinology OR Reproductive Biology		

2.8. Core T2–Ecology

Credits : 6

Lectures: 50

Ecology	**4 Credits**	**Class**
Unit 1:Introductionto Ecology		**4**
History of ecology, Autecology and synecology, Levels of organization, Laws of limiting factors, Study of Physical factors, The Biosphere.		
Unit 2: Population		**20**
Unitary and Modular populations Unique and group attributes of population: Demographic factors, life tables, fecundity tables, survivorship curves, dispersal and dispersion. Geometric, exponential and logistic growth, equation and patterns, and K strategies. Population regulation, density dependent and independent factors Population Interactions, Gause's Principle with laboratory and field examples, Lotka-Volterra equation for competition.		
Unit 3: Community		**11**
Community characteristics: species diversity, abundance, , dominance, richness, Vertical stratification, Ecotone and edge effect. succession with one example		
Unit 4: Ecosystem		**10**
Types of ecosystem with an example in detail, Food chain: Detritus and grazing food chains, Linear and Y-shaped food chains, Food web, Energy flow through the ecosystem, Ecological pyramids and Ecological efficiencies Nutrient and biogeochemical cycle with an example of Nitrogen cycle Human modified ecosystem		
Unit 5: Applied Ecology		**5**
Wildlife Conservation (in-situ and ex-situ conservation). Management strategies for tiger conservation; Wild life protection act (1972)		

Suggested readings:

1. Basu, R.N. (2004). A Compendium of Terms in Ecology and Environment. Naya Udyog.
2. Begon, M., Harper, J. L. & Townsend, C. R. (2006). Ecology: Individuals, Populations & communities. 4th Ed. Blackwell science.
3. Cain, Bowman &Hacker. Ecology. 3rdedition.Sinauerassociates
4. Chapman, R. L. and Reiss, M. J. (2000). Ecology - Principles & Application. Cambridge University Press.
5. Colinvaux, P. (1993). Ecology 2. John Wiley & Sons, Inc. New York.
6. Dash, M. C., (2001). Fundamental of Ecology. 2nd Ed. Tata McGraw-Hill Company.
7. Faurie, C., Ferra, C., Medori, P. & Devaux, J. (2001). Ecology-Science and Practice. Oxford & IBH Pub. Company.
8. Freedman, B. (1989). Environmental Ecology. Academic press, Inc.
9. Joshi, P.C. & Joshi, N. (2009). A Text Book of Ecology and Environment. Himalaya Publishing House.
10. Kormondy, E. J. (2002). Concepts of Ecology. 4th Indian Reprint, Pearson Education.
11. Krebs, C. J. (2001). Ecology. Benjamin Cummings.
12. Krebs, C.J. (2016).Ecology: The Experimental Analysis of Distribution and Abundance. Pearson Education Limited, Noida, India.
13. Molles, Jr. M.C. (2005). Ecology: Concepts and Applications. 3rd Ed. McGraw- Hill.
14. Odum, E. P. & Barret, G. W. (2005). Fundamentals of Ecology. 5th Ed. Thompson Brooks/Cole.
15. Ricklefs, R. E. & Miller, G. L. (2000). Ecology. 4th Ed. W. H. Freeman & Company.
16. Russel, P.J., Wolfe, L. S., Hertz, P.E. Starr, C. & McMillan, B. (2008). Ecology.
17. Brooks/Cole. Saharia, V. B. (1998). Wildlife in India. Natraj Publishers.
18. Smith, R. L. & Smith, T. M. (2001). Ecology and Field Biology. Benjamin Cummings Pearson Education.
19. Smith, T. M & Smith, R. L. (2006). Elements of Ecology. 6th Ed. Pearson Education.
20. Stiling, P. (2009). Ecology- Theories and Applications. 4th Ed. Prentice Hall of India.

21. Van Dyke, F. (2008). Conservation Biology: Foundations, Concepts, Application. 2nd Ed. Springer Science and Business Media.

2.9. Core P2– Ecology Lab

Ecology **Credits 2**

List of Practical

1. Study of life tables and plotting of survivorship curves of different types from the hypothetical/real data provided
2. Determination of population density in a natural/hypothetical community by quadrate method and calculation of Shannon-Weiner diversity index for the same community
3. Study of an aquatic ecosystem: Phytoplankton and zooplankton, Measurement of area, temperature, determination of pH and free CO_2
4. Report on a visit to National Park/Biodiversity Park/Wild life sanctuary/ Biodiversity Centre/ Any Museum/Sea shore

Full Marks: 20

Examination Pattern:

1 question (pH, free CO_2 estimation)	(8 X 1) =	08
1 question From Item 1 and 2,	(8 X 1) =	08
Excursion Report	=	02
Laboratory Note Book	=	02

Suggested Readings:

1. Robert Desharnais, Jeffrey Bell, 'Ecology Student Lab Manual, Biology Labs'
2. Darrell S Vodopich, 'Ecology Lab Manual'

2.10. DSE T6–Wild Life Conservation

Credits : 6

Lectures: 50

Wild Life Conservation and Management	**4 Credits**	**Class**
Unit1:Introduction to Wild Life		6
Values of wildlife-positive and negative; Conservation ethics; Importance of conservation; Causes of depletion; World conservation strategies.		
Unit2:Evaluation and management of wildlife		8
Habitat analysis, Physical parameters: Topography, Geology, Soil and water Biological Parameters: food, cover, forage, browse and cover estimation Standard evaluation procedures: remote sensing and GIS.		
Unit3: Management of habitats		6
1. Setting back succession; Grazing logging; 2. Mechanical treatment; Advancing the successional process; Cover construction; Preservation of general genetic diversity 3. Restoration of degraded habitats		
Unit4: Population estimation		12
1. Population density, Natality, Birth-rate, Mortality, fertility schedules and sex ratio computation; 2. Faecal analysis of ungulates and carnivores; 3. Pug marks and census method.		
Unit5:Aimsandobjectivesofwildlifeconservation		6
1. Wild life conservation in India–through ages; different approaches of wildlife conservation; 2. Modes of conservation ;in- situ conservation and ex-situ conservation 3. Necessity for wildlife conservation		
Unit6:Managementplanningof wildlife in protected areas		5
5. Estimation of carrying capacity; 6. Eco tourism/ wild life tourism in forests; 7. Concept of climax persistence; 8. Ecology of perturbence.		
Unit7:Manand Wildlife		3
Causes and consequences of human-wildlife conflicts; mitigation of conflict – an overview; Management of excess population		
Unit8:Protected areas		4
1. National parks &sanctuaries, Community reserve; Important features of protected areas in India; 2. Tiger conservation- Tiger reserves in India; Management challenges in Tiger reserve.		

Suggested Readings:

1. Caughley, G., and Sinclair, A.R.E. (1994).Wildlife Ecology and Management. Blackwell Science.
2. Woodroffe R, Thirgood, S. and Rabinowitz, A. (2005). People and Wildlife, Conflictor Co-existence Cambridge University.
3. Bookhout, T. A. (1996).Research and Management Techniques for Wild life and Habitats, 5 th edition. The Wildlife Society, Allen Press.
4. Sutherland, W.J. (2000).The Conservation Handbook: Research, Management and Policy. Blackwell Sciences
5. Sodhi, N.S. and Ehlich, P.R. (2010). Conservation Biology for All. Oxford university Press

2.11. DSE P6–Wild Life Conservation Lab

Wild Life Conservation and Management2 Credits

List of Practical

1. Identification of flora, mammalian fauna, avian fauna, herpeto-fauna
2. Demonstration of basic equipment needed in wild life studies use, care and maintenance(Compass, Binoculars, Spotting scope, Range Finders, Global Positioning System, Various types of Cameras and lenses)
3. Familiarization and study of animal evidences in the field; Identification of animals through pug marks, hoofmarks, scats, pellet groups, nest, antlers, etc.
4. Demonstration of different field techniques for flora and fauna
5. Ten tree method, Circular, Square & rectangular plots, methods for ground cover assessment, Tree canopy cover assessment, Shrub cover assessment.
6. Trail/transect monitoring for abundance and diversity estimation of mammals and bird(direct and indirect evidences)

Full Marks: 20

Examination Pattern:

One question from Item No. 5 ---------- (7 X 1) = 07
One question from Item No. 6 ---------- (7X 1) = 07
Identification of two specimens from item no. 3 -------- (2 X 2) = 04
Laboratory Note Book ---------- = 02

THE UNIVERSITY OF BURDWAN

Curriculum and Syllabus For 3-Year B. Sc. (Honours)
in
Botany

Under Choice Based Credit System (CBCS)
(w.e.f. Academic Year 2017-2018)

Structure of B.Sc. Honours Botany under CBCS

Core Courses

1. Microbiology and Phycology
2. Archegoniatae
3. Mycology and Phytopathology
4. Morphology & Anatomy of Angiosperms
5. Plant Ecology & Phytogeography
6. Plant Systematics
7. Economic Botany
8. Palaeobotany & Palynology
9. Biomolecules and Cell Biology
10. Molecular Biology
11. Plant Physiology
12. Plant Metabolism
13. Genetics & Plant Breeding
14 Plant Biotechnology

ISkill Enhancement Courses: Elective (Two)

Semester -III SEC-I	**SEC-1 (Any one)** 1. Ethnobotany 2. Intellectual Property Rights 3. Medicinal Botany 4. Mushroom Culture Technology 5. Agricultural Botany

Semester IV SEC- 2	**SEC - 2 (Any One)** 1. Biofertilizers 2. Herbal Technology 3. Nursery & Gardening 4. Floriculture 5. Plant Diversity & Human Welfare

Generic Electives (Four) Offered to the students of other Departments	
Semester-I GE-1	**[GE-1** *(Same as core course-I of B.Sc. Botany general)* I Biodiversity (Microbes, Algae, Fungi and Archegoniatae)
Semester-II GE-2	**GE-2**(*Same as core course-I of B.Sc. Botany general)* Plant Ecology and Taxonomy
Semester -III GE-3	GE- 3 Plant Anatomy and Embryology *(Same as core course-I of B.Sc. Botany general)*
Semester -IV GE-4	IGE-4 Plant Physiology & Plant Metabolism *(Same as core course-I of B.Sc. Botany general)*

Discipline Specific Electives (Four)

SEMISTER-V	**DSE-1.** (Any One) I.Techniques in Plant Sciences 2.Reproductive Biology of Angiosperms (Rep. Biol. of Angio.) 3. Sylviculture & Forest Management (Sylvi. Cult. & Forest Mangt.) **DSE-2.** (Any One) I.Biostatistics; 2.Bioinformatics; 3. Natural Resource Management (Nat. Res. Mgmt)
SEMISTER- VI	**DSE-3(Any** One) 1.Phytoremediation & Immunology (Phyt. Rem & Immn) 2.Plant Evolution & Biodiversity (Pint. Ev!. & BioDv) 3.Marine Biology & Phycotechnology (Mar. Biol. & PyTec) **DSE-4** (Any One) I.Horticulture Practices & Post-Harvest Technology(. Hort. Prct. & PHT) 2.Industrial and Environmental Microbiology (Ind & Env. Microb.)

Ability Enhancement Compulsory Course

AECC-1. Environmental Studies (ENVS)
AECC-2. English Communication / MIL

OUTLINE OF DISTRIBUTION

Semester	Core Course(l4)	Ability Enhancement Compulsory Course (AEC) (2)	Skill Enhancement Course (SEC) (2)	Discipline Specific Elective: (DSE) (4)	Generic Elective: GE) (4)
I	Microbiology and Phycology Archegoniatae	ENVS			GE-1
II	Mycology and Phytopathology Morphology & Anatomy	Communicative English /MIL			GE-2
III	Plant Ecology & Phytogeography Plant Systematics Economic Botany		**SEC-I (Any one)** 1. Ethnobotany . Intellectual Property ights . Medicinal Botany . Mushroom Culture echnology 5. Agricultural Botany		GE-3
IV	Palaeobotany & Palynology Biomolecules & Cell Biology Molecular Biology		**SEC-2 (Any one)** 1.Biofertilizers 2.Herbal Technology 3.Nursery & Gardening 4.Floriculture 5. Plant Diversity & Human Welfare		GE-4
V	Plant Physiology Plant Metabolism			**DSE-1 (Any One)** 1.Techniques in Plant ciences 2. Rep. Biol. of Angio. 3. Sylvi. Cult. & Forest Mangt. **DSE-2 (Any One)** 1.Biostatistics . Bioinfonnatics . Nat. Res. Mgmt	
VI	Genetics & Plant Breeding Plant Biotechnology			**DSE-3 (Any One)** 1.Phyt. Rem & Immn 2. Pint. Evl. & BioDv 3. Mar. Biol. & PyTec **SE-4 (Any One)** 1. Hort. Prct.& PHT . Ind & Env. Microb.	

CREDIT DISTRIBUTION

SEMESTER	COURSE OPTED	COURSE: NAME	Credits
	Ability Enhancement Compulsory Course- I	ENVS	4
	Core Course- I	Microbiology and Phycology	4
	Core Course- I **Practical**	Microbiology and Phycology- Practical	2
	Core Course- 2	Archegoniate	4
	Core Course- 2 **Practical**	Archegoniate - Practical	2
	Generic Elective-I	GE-1	4
	Generic Elective- I **Practical/Tutorial**	GE-I Practical	2
SEM-11 Total Credit **20**	Ability Enhancement Compulsory Course-2	English Communication/MIL	2
	Core Course- 3	Mycology and Phytopathology	4
	Core Course- 3 **Practical**	Mycology and Phytopathology- Practical	2
	Core Course-IV	Morphology & Anatomy	4
	Core Course-IV **Practical**	Morphology & Anatomy - Practical	2
	Generic Elective-2	GE-2	4
	Generic Elective-2 **Practical**	GE-2 Practical	2
SEM-111 Total Credit **26**	Core Course-5	Plant Ecology & Phytogeography	4
	Core Course-5 **Practical**	Plant Ecology & Phytogeography - Practical	2
	Core Course-6	Plant Systematics	4
	Core Course-6 **Practical**	Plant Systematics -Practical	2
	Core Course-7	Economic Botany	4
	Core Course-7 **Practical**	Economic Botany - Practical	2
	Skill Enhancement Course	SEC-1 (Any one)	2
	Generic Elective- 3	GE- 3 (Any one)	4
	Generic Elective- 3 **Practical**	GE-3 Practical	2

SEM-IV Total Credit **26**	Core Course- 8	Palaeobotany& Palynology	4
	Core Course- 8 **Practical**	Palaeobotany& Palynology - Practical	2
	Core Course- 9	Biomolecule & Cell Biology	4
	Core Course- 9 **Practical**	Biomolecule & Cell Biology- Practical	2
	Core Course- 10	Molecular Biology	4
	Core Course- 10 **Practical**	Molecular Biology - Practical	2
	SkillEnhancement Course-2	SEC-2 (Any one)	2
	Generic Elective- 4	GE-4	4
	Generic Elective- 4 **Practical**	GE-4 Practical	2
SEM-V Total Credit **24**	Core Course- 11	Plant Physiology	4
	Core Course- 11 **Practical**	Plant Physiology - Practical	2
	Core Course- 12	Plant Metabolism	4
	Core Course- 12 **Practical**	Plant Metabolism - Practical	2
	Discipline Specific Elective	DSE-1	4
	iscipline Specific Elective **Practical**	DSE-1 Practical	2
	Discipline Specific Elective	DSE- 2	4
	iscipline Specific Elective **Practical**	DSE-2 Practical	2
SEM-VI Total Credit **24**	Core Course- 13	Genetics	4
	Core Course - 13 **Practical**	Genetics - Practical	2
	Core Course- 14	Plant Biotechnology	4
	Core Course- 14 **Practical**	Plant Biotechnology- Practical	2
	Discipline SpecificElective	DSE- 3	4
	Discipline SpecificElective- **Practical**	DSE-3 Practical	2
	Discipline SpecificElective	DSE- 4	4
	iscipline SpecificElective- **Practical**	DSE- 4 Practical	2
			142

Semester III

Core Course 5 : Plant Ecology and Phytogeography Credits: 6

(Theory-4, Practical-2)

THEORY **Lectures: 60**

Unit 1: Introduction (**6 lectures)**

Basic concepts; Levels of organization. Inter-relationships between the living world and the environment, the components and dynamism, homeostasis.

Unit 2: Soil (**6 lectures)**

Importance; Origin; Formation; Composition; Physical; Chemical and Biological components.

Unit 3: Water **(4 lectures)**

Importance: States of water in the environment; Atmospheric moisture; Precipitation types (rain, fog, snow, hail, dew); Hydrological Cycle; Water in soil.

Unit 4: Light, temperature, wind and fire **(4 lectures)**

Climatic variables; adaptations of plants to their variation.

Unit 5: Ecosystem **(8 lectures)**

Structure; Process; Trophic organization, basic source of energy, autotrophy, heterotrophy; symbiosis, commensalism, parasitism; food chains and webs; ecological pyramids; biomass, standing crop.

Unit 6: Population ecology

Characteristics and Dynamics .Ecological Speciation (**4 lectures)**

Unit 7: Plant communities **(8 lectures)**

Concept of ecological amplitude; Habitat and niche; Characters: analytical and synthetic; Ecotone and edge effect; Dynamics: succession - processes, types; climax concepts.

Unit 8: Functional aspects of ecosystem **(8 lectures)**

Principles and models of energy flow; Production and productivity; EcologicalBiogeochemical cycles; Cycling of Carbon, Nitrogen and Phosphorus.

Unit 9: Phytogeography

Principles; Continental drift; Theory of tolerance; Endemism; Characteristicfeatures of major terrestrial biomes (one each from tropical, temperate & tundra); Phytogeographical division oflndia [Phytogeographical classification of India (D. Chatterjee- 1962)]; Vegetation Characteristics of Eastern Himalaya and Sunderbans. **(12 lectures)**

Practical

1. Study of instruments used to measure microclimatic variables: Soil thermometer, maximum and minimum thermometer, anemometer, psychrometer/hygrometer, rain gauge and lux meter.

2. Determination of pH of various soil and water samples (pH meter, universal indicator and pH paper)

3. Analysis for carbonates, chlorides, nitrates, sulphates, organic matter and base deficiency from two soil samples by rapid field tests.

4. Determination of organic matter of different soil samples by Walkley & Black rapid titration method.

5. Determination of dissolved oxygen of water samples from polluted and unpolluted sources.

6. Ecological adaptations of some species: *Ipomoea aquatica* stem, Phyllode of *Acaccia auriculiformis, Nerium* leaf and *Vanda* root

7. Determination of minimal quadrat size for the study of herbaceous vegetation in the college campus, by species area curve method (species to be listed).

8. Field visit to familiarize students with ecology of different sites.

Suggested Readings

1. Odum, E.P. (2005). Fundamentals of ecology. Cengage Leaming India Pvt. Ltd., New Delhi. 5th edition.
2. Singh, J.S., Singh, S.P., Gupta, S. (2006). Ecology Environment and Resource Conservation. Anamaya Publications, New Delhi, India.
3. Sharma, P.D. (2010). Ecology and Environment. Rastogi Publications, Meerut, India. 8th edition.
4. Wilkinson, D.M. (2007). Fundamental Processes in Ecology: An Earth Systems Approach. Oxford University Press. U.S.A.
5. Kormondy, E.J. (1996). Concepts of ecology. PHI Leaming Pvt. Ltd., Delhi, India. 4th edition.

Objectives, Rights, Assignments, Infringements, Defences of Design Infringement **4 Lectures)**

Unit 8: Protection of Plant Varieties

(

2 Lectures)

Plant Varieties Protection-Objectives, Justification, International Position, Plantvarieties protection in India. Rights of farmers, Breeders and Researchers.National gene bank, Benefit sharing.Protection of Plant Varieties and Farmers' Rights Act, 2001.

Unit 9:Information Technology Related Intellectual Property Rights

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Computer Software and Intellectual Property, Database and Data Protection, Protection of Semi-conductor

chips, Domain Name ProtectionComputer Software and Intellectual Property, Database and Data Protection, Protection of Semi-conductor chips, Domain Name Protection

(2 lectures)

(1) Plant Diversity and Human Welfare Credits 2 **Lectures: 30**

Unit 1: Plant diversity and its scope- Genetic diversity, Species diversity, Plant diversity attheecosystem level, Agrobiodiversity and cultivated plant taxa, wild taxa. Values and uses of Biodiversity:Ethical and aesthetic values, Precautionary principle, Methodologies forvaluation, Uses of plants, Uses of microbes.

Unit 2:Loss of Biodiversity: Loss of genetic diversity, Loss of species diversity, Loss ofecosystem diversity, Loss of agrobiodiversity, Projected scenario for biodiversity loss, **Management of Plant Biodiversity:** Organizations associated with biodiversitymanagement-Methodology for execution-IUCN, UNEP, UNESCO, WWF, NBPGR; Biodiversity legislation and conservations, Biodiversity information management andcommunication. **(8 lectures)**

Unit 3:Conservation of Biodiversity: Conservation of genetic diversity, speciesdiversity andecosystem diversity, *In situ* and *ex situ* conservation, Socialapproaches to conservation,Biodiversity awareness programmes, Sustainable development. **(8 lectures)**

Unit 4: Role of plants in relation to Human Welfare; a) Importance of forestry theirutilization and commercial aspects b) Avenue trees, c) Ornamental plants of India. d) Alcoholic beverages through ages. Fruits and nuts: Important fruit crops their commercial importance. Wood and its uses.

(6 lectures)

Suggested Readings

I.Krishnamurthy, K.V. (2004). An Advanced Text Book of Biodiversity - Principles and Practices. Oxford and IBH Publications Co. Pvt. Ltd. New Delhi

(8 lectures)

Syllabus Chemistry (Hons.) for SEM-I to SEM-VI under CBCS

(to be effective from Academic Year: 2017-18)

The University of Burdwan
Burdwan, West Bengal

Type of Courses

Course type	Description	Number of Courses		Credit
		B. Sc. (Honours)	B.Sc. (Regular)	
CC	Core Course	14	12 (4 papers each from 3 disciplines of choice)	6
DSE	Discipline Specific Elective	4	6 (2 papers each from 3 discipline of choice including interdisciplinary papers)	6
GE	Generic Elective	4	-	6
AECC (ENVS & ENGLISH/MIL)	Ability Enhancement Compulsory Course	(1+1)	(1+1)	(4+2)
SEC	Skill Enhancement Course	2	4	2
TOTAL CREDIT		**142**	**122**	

Structure at a glance for Chemistry (H) at UG level, B.U.:

1st Semester

Course Code	Course Title	Course Type	Credit per course	Marks
CC-1	Organic Chemistry-I (Theo) Organic Chemistry-I (Prac)	Core Course – I	4+2	75
CC-2	Physical Chemistry-I (Theo) Physical Chemistry-I (Prac)	Core Course – II	4+2	75
GE-1	Any discipline other than chemistry	Generic Elective – 1	6	75
AECC-1	ENVS	Ability Enhancement Compulsory Course – I	4	100
TOTAL			22	325

2nd Semester

Course Code	Course Title	Course Type	Credit per course	Marks
CC-3	Inorganic Chemistry-I (Theo) Inorganic Chemistry-I (Prac)	Core Course – III	4+2	75
CC-4	Organic Chemistry-II (Theo) Organic Chemistry-II (Prac)	Core Course – IV	4+2	75
GE-2	Any discipline other than chemistry	Generic Elective – 2	6	75
AECC-2	Communicative Eng./MIL	Ability Enhancement Compulsory Course – II	2	50
TOTAL			20	275

3rd Semester

Course Code	Course Title	Course Type	Credit per course	Marks
CC-5	Physical Chemistry-II (Theo) Physical Chemistry-II (Prac)	Core Course – V	4+2	75
CC-6	Inorganic Chemistry-II (Theo) Inorganic Chemistry-II (Prac)	Core Course – VI	4+2	75
CC-7	Organic Chemistry-III (Theo) Organic Chemistry-III (Prac)	Core Course – VII	4+2	75
SEC-1	IT skill in Chemistry or Basic analytical chemistry	Skill Enhancement Course – 1	2	50
GE-3	Any discipline other than chemistry	Generic Elective – 3	6	75
TOTAL			26	350

4th Semester

Course Code	Course Title	Course Type	Credit per course	Marks
CC-8	Physical Chemistry-III (Theo) Physical Chemistry-III (Prac)	Core Course – VIII	4+2	75
CC-9	Inorganic Chemistry-III (Theo) Inorganic Chemistry-III (Prac)	Core Course – IX	4+2	75
CC-10	Organic Chemistry – IV (Theo) Organic Chemistry – IV (Prac)	Core Course - X	4+2	75
SEC-2	Pharmaceutical chemistry or Analytical clinical biochemistry	Skill Enhancement Course – II	2	50
GE-4	Any discipline other than chemistry	GE – 4	6	75
TOTAL			26	350

5th Semester

Course Code	Course Title	Course Type	Credit per course	Marks
CC-11	Inorganic Chemistry-IV (Theo) Inorganic Chemistry-IV (Prac)	Core Course – XI	4+2	75
CC-12	Organic Chemistry-V (Theo) Organic Chemistry-V (Prac)	Core Course – XII	4+2	75
DSE-1	Compulsory Course (Advanced Physical Chemistry) (Theo + Prac)	Discipline Specific Elective	4+2	75
DSE-2	Analytical methods in chemistry or Instrumental methods of chemical analysis (Theo + Prac)	Discipline Specific Elective	4+2	75
TOTAL			24	300

6th Semester

Course Code	Course Title	Course Type	Credit per course	Marks
CC-13	Inorganic Chemistry-V (Theo) Inorganic Chemistry-V (Prac)	Core Course – XIII	4+2	75
CC-14	Physical Chemistry-IV (Theo) Physical Chemistry-IV (Prac)	Core Course – XIV	4+2	75
DSE-3	Green chemistry or polymer chemistry (Theo + Prac)	Discipline Specific Elective	4+2	75
DSE-4	Inorganic materials of industrial importance (Theo + Prac) or Dissertation followed by power point presentation	Discipline Specific Elective	4+2 or 6	75
TOTAL			24	300

Analysis of food products

Nutritional value of foods, idea about food processing and food preservations and adulteration.

Chromatography

Definition, general introduction on principles of chromatography, paper chromatography, TLC etc.

Ion-exchange

Column, ion-exchange chromatography etc., determination of ion exchange capacity of anion / cation exchange resin.

Analysis of cosmetics

Major and minor constituents and their function: Analysis of deodorants and antiperspirants, Al, Zn, boric acid, chloride, sulphate.

Reference Books:

1. Willard, H.H., Merritt, L.L., Dean, J. & Settoe, F.A. Instrumental Methods of Analysis, 7th Ed. Wadsworth Publishing Company Ltd., Belmont, California, USA, 1988.
2. Skoog, D.A., Holler, F.J. & Crouch, S. Principles of Instrumental Analysis, Cengage Learning India Edition, 2007.
3. Skoog, D.A.; West, D.M. & Holler, F.J. Analytical Chemistry: An Introduction sixth Ed., Saunders College Publishing, Fort Worth, Philadelphia (1994).
4. Harris, D. C. Quantitative Chemical Analysis, 9th ed. Macmillan Education, 2016.
5. Dean, J. A. Analytical Chemistry Handbook, McGraw Hill, 2004.
6. Day, R. A. & Underwood, A. L. Quantitative Analysis, Prentice Hall of India, 1992.
7. Freifelder, D.M. Physical Biochemistry 2nd Ed., W.H. Freeman & Co., N.Y. USA (1982).
8. Cooper, T.G. The Tools of Biochemistry, John Wiley & Sons, N.Y. USA. 16 (1977).
9. Vogel, A. I. Vogel's Qualitative Inorganic Analysis 7th Ed., Prentice Hall, 1996.
10. Mendham, J., A. I. Vogel's Quantitative Chemical Analysis 6th Ed., Pearson, 2009.
11. Robinson, J.W. Undergraduate Instrumental Analysis 5th Ed., Marcel Dekker, Inc., New York (1995).
12. Christian, G.D. Analytical Chemistry, 6th Ed. John Wiley & Sons, New York, 2004.

Course Code: Generic Elective-4 (Theo) 4 Credits

(For the students of discipline other than chemistry)

Title: **Solutions, Phase Equilibria, Conductance, Electrochemistry & Analytical and Environmental Chemistry**

Physical Chemistry

1. Solutions

a. Ideal solutions and Raoult's law, deviations from Raoult's law – non-ideal solutions; Vapour pressure-composition and temperature-composition curves of ideal and non-ideal solutions; Distillation of solutions; Lever rule; Azeotropes.

b. Critical solution temperature; effect of impurity on partial miscibility of liquids; Immiscibility of liquids- Principle of steam distillation; Nernst distribution law and its applications, solvent extraction.

2. Phase Equilibria

a. Phases, components and degrees of freedom of a system, criteria of phase equilibrium; Gibbs Phase Rule and its thermodynamic derivation; Derivation of Clausius – Clapeyron equation and its importance in phase equilibria; Phase diagrams of one-component system (water).

3. Conductance

a. Conductance, cell constant, specific conductance and molar conductance; Variation of specific and equivalent conductance with dilution for strong and weak electrolytes; Kohlrausch's law of independent migration of ions; Equivalent and molar conductance at infinite dilution and their determination for strong and weak electrolytes; Ostwald's dilution law; Application of conductance measurement (determination of solubility product and ionic product of water); Conductometric titrations (acid-base).

b. Transport Number and principle of Moving-boundary method.

4. Electromotive force

a. Faraday's laws of electrolysis, rules of oxidation/reduction of ions based on half-cell potentials, applications of electrolysis in metallurgy and industry; Chemical cells, reversible and irreversible cells with examples; Electromotive force of a cell and its measurement, Nernst equation; Standard electrode (reduction) potential; Electrochemical series; Thermodynamics of a reversible cell, calculation of thermodynamic properties: G, H and S from EMF data.

b. Concentration cells with and without transference, liquid junction potential; pH determination using hydrogen electrode and quinhydrone; Qualitative discussion of potentiometric titrations (acid-base, redox, precipitation).

Analytical and Environmental Chemistry

1. Chemical Analysis

a. Gravimetric analysis: solubility product and common ion effect; requirements of gravimetry; gravimetric estimation of chloride, sulphate, lead, barium, nickel, copper and zinc.

b. Volumetric analysis: primary and secondary standard substances; principles of acid-base, oxidation –reduction and complexometric titrations; indicators: acid-base, redox and metal ion; principles of estimation of mixtures: $NaHCO_3$ and Na_2CO_3 (by acidimetry); iron, copper, manganese and chromium (by redox titration); zinc, aluminum, calcium and magnesium (by complexometric EDTA titration).

c. Chromatography: Chromatographic methods of analysis: column chromatography and thin layer chromatography.

2. Environmental Chemistry

a. The Atmosphere: composition and structure of the atmosphere; troposphere, stratosphere, mesosphere and thermosphere; ozone layer and its role; major air pollutants: CO, SO2, NOx and particulate matters – their origin and harmful effects; problem of ozone layer depletion; green house effect; acid rain and photochemical smog; air pollution episodes: air quality standard; air pollution control measures: cyclone collector, electrostatic precipitator, catalytic converter.

b. The Hydrosphere: environmental role of water, natural water sources, water treatment for industrial, domestic and laboratory uses; water pollutants; action of soaps and detergents, phosphates, industrial effluents, agricultural runoff, domestic wastes; thermal pollution, radioactive pollution and their effects on animal and plant life; water pollution episodes: water pollution control measures : waste water treatment; chemical treatment and microbial treatment; water quality standards: DO, BOD, COD, TDS and hardness parameters; desalination of sea water : reverse osmosis, electrodialysis.

c. The Lithosphere: water and air in soil, waste matters and pollutants in soil, waste classification, treatment and disposal; soil pollution and control measures.

Reference Books:

1. Barrow, G.M. Physical Chemistry Tata McGraw-Hill (2007).

2. Castellan, G.W. Physical Chemistry 4th Ed. Narosa (2004).

3. Kotz, J.C., Treichel, P.M. & Townsend, J.R. General Chemistry Cengage Learning India Pvt. Ltd., New Delhi (2009).

4. Mahan, B.H. University Chemistry 3rd Ed. Narosa (1998).

5. Petrucci, R.H. General Chemistry 5th Ed. Macmillan Publishing Co.: New York (1985).

6. Chugh, K.L., Agnish, S.L. A Text Book of Physical Chemistry Kalyani Publishers.

7. Bahl, B.S., Bahl, A., Tuli, G.D., Essentials of Physical Chemistry S. Chand & Co. ltd.

8. Palit, S. R., Elementary Physical Chemistry Book Syndicate Pvt. Ltd.

9. Pahari, S., Physical Chemistry New Central Book Agency.

10. Pahari, S., Pahari, D., Problems in Physical Chemistry New Central Book Agency.

11. Banerjee, S. P. A Text Book of Analytical Chemistry, The New Book Stall.

12. Gangopadhyay, P. K. Application Oriented Chemistry, Book Syndicate.

13. Mondal, A. K & Mondal, S. Degree Applied Chemistry, Sreedhar Publications.

14. Banerjee, S. P. A Text Book of Analytical Chemistry, The New Book Stall.

15. Manahan, S. Environmental Chemistry, CRC Press, 9th Ed.

Course Code: Generic Elective-4 (Prac) 2 Credits

(For the students of discipline other than chemistry)

Title: **Solutions, Phase Equilibria, Conductance, Electrochemistry & Analytical and Environmental Chemistry**

Physical Chemistry

1. Distribution Law (Any one)

Study of the equilibrium of one of the following reactions by the distribution method:

a. I_2 (aq) + I^- (aq) = I^{3-} (aq)

b. Cu^{2+} (aq) + xNH^2 (aq) = $[Cu(NH_3)x]^{2+}$

2. Conductance

a. Determination of dissociation constant of a weak acid (cell constant, equivalent conductance are also determined)

b. Perform the following conductometric titrations: (Any one)

i. Strong acid vs. strong base.

ii. Weak acid vs. strong base.

3. Potentiometry

Perform the following potentiometric titrations:

a. Weak acid vs. strong base.

b. Potassium dichromate vs. Mohr's salt.

Analytic and Environmental Chemistry

1. To find the total hardness of water by EDTA titration.

2. To find the PH of an unknown solution by comparing color of a series of HCl solutions + 1 drop of methyl orange, and a similar series of NaOH solutions + 1 drop of phenolphthalein.

3. To determine the rate constant for the acid catalysed hydrolysis of an ester.

4. Determination of the strength of the H_2O_2 sample.

5. To determine the solubility of a sparingly soluble salt, e.g. KHTa (one bottle).

References Books:

1. University Hand Book of Undergraduate Chemistry Experiments, edited by Mukherjee, G. N., University of Calcutta, 2003.

2. Palit, S.R., Practical Physical Chemistry Science Book Agency.

3. Mukherjee, N.G., Selected Experiments in Physical Chemistry J. N. Ghose & Sons.

4. Dutta, S.K., Physical Chemistry Experiments Bharati Book Stall.

5. Khosla, B. D.; Garg, V. C. & Gulati, A. Senior Practical Physical Chemistry, R. Chand & Co.: New Delhi (2011).

6. Ghosal, Mahapatra & Nad, An Advanced Course in Practical Chemistry, New Central Book Agency.

7. University Hand Book of Undergraduate Chemistry Experiments, edited by Mukherjee, G. N. University of Calcutta, 2003.

8. Das, S. C., Chakraborty, S. B., Practical Chemistry.

Course Code: DSE-3

Course Title: Green Chemistry (Theo) 4 Credits

DSE-T4 Green Chemistry: Principles and applications

Twelve principles and goals of green Chemistry:

* Designing greener processes: Prevention of waste/ by-products; maximum incorporation of the materials used in the process into the final products, Atom Economy, calculation of atom

economy of the rearrangement, addition, substitution and elimination reactions.

* Green solvents– supercritical carbon dioxide, water as green solvent, ionic liquids, fluorous biphasic solvent, PEG, solventless processes, immobilized solvents.

* Use of microwaves and ultrasonic energy in green processes.

* Selection of starting materials; avoidance of unnecessary derivatization – careful use of blocking/ protecting groups.

* Preferential use of catalytic reagents over stoichiometric reagents; comparison of heterogeneous and homogeneous catalysis, bio-catalysis, photo-catalysis.

* Development of green analytical techniques to prevent and minimize the generation of hazardous substances in chemical processes.

Examples of Green Synthesis/ Reactions and some real world cases

* Green synthesis of adipic acid: Starting from cyclohexanol/cyclohexanone/cyclohexene

* Microwave assisted reactions in water: Hofmann Elimination, oxidation of toluene and alcohols; Diels-Alder reaction and Decarboxylation reaction

* Ultrasound assisted reactions: Simmons-Smith reaction.

* Application of surfactant absorbed carbon dioxide for dry cleaning and precision cleaning of garments.

* Rightfit pigment: synthetic azopigments to replace toxic organic and inorganic pigments.

* An efficient, green synthesis of a compostable and widely applicable plastic (poly lactic acid) made from corn.

* Healthier Fats and oil by Green Chemistry: Enzymatic Inter esterification for production of no Trans-Fats and Oils

Future scope:

Oxidising and reducing reagents and catalysts; multifunctional reagents; combinatorial green chemistry;

Green chemistry in sustainable development: Bio-diesel, bio-ethanol and biogas.

Reference Book

1. Anastas, P.T. & Warner, J.K.: Green Chemistry - Theory and Practical, Oxford University Press (1998).

2. Matlack, A.S. Introduction to Green Chemistry, Marcel Dekker (2001).
3. Cann, M.C. & Connely, M.E. Real-World cases in Green Chemistry, American Chemical Society, Washington (2000).
4. Ryan, M.A. & Tinnesand, M. Introduction to Green Chemistry, American Chemical Society, Washington (2002).
5. Lancaster, M. Green Chemistry: An Introductory Text RSC Publishing, 2nd Edition, 2010.
6. Gurtu, J. N., Gurtu, A. Introductory Green Chemistry, Pragati Prakashan (2014).

Course Code: DSE-3 2 Credits

Course Title: Green Chemistry (Prac)

1. Preparation of propene by two methods can be studied

a. Triethylamine ion + OH^- → propene + trimethylpropene + water

b. 1-propanol $\xrightarrow{H_2SO_4/\Delta}$ propene + water

2. Other types of reactions, like addition, elimination, substitution and rearrangement should also be studied for the calculation of atom economy.
3. Benzoin condensation using Thiamine Hydrochloride as a catalyst instead of cyanide.
4. Photoreduction of benzophenone to benzopinacol in the presence of sunlight.

Reference Books

1. Anastas, P.T & Warner, J.C. Green Chemistry: Theory and Practice, Oxford University Press (1998).
2. Kirchoff, M. & Ryan, M.A. Greener approaches to undergraduate chemistry experiment. American Chemical Society, Washington DC (2002).
3. Ryan, M.A. Introduction to Green Chemistry, Tinnesand; (Ed), American Chemical Society, Washington DC (2002).
4. Sharma, R.K.; Sidhwani, I.T. & Chaudhari, M.K. I.K. Green Chemistry Experiment: A monograph International Publishing House Pvt Ltd. New Delhi. Bangalore CISBN 978-93-81141-55-7 (2013).
5. Cann, M.C. & Connelly, M. E. Real world cases in Green Chemistry, American Chemical Society (2008).
6.

The University of Burdwan

B.A./B.Sc. (Honours)
In
Economics
w.e.f. 2017-18
under Semester with CBCS

Structure of Syllabus for BA/B.Sc.Honours in Economics under Semester with CBCS

Students must have to pass in Mathematics/ Business Mathematics or equivalentat +2 Level

SEM	*Paper Code*	*Paper Description*	*Course Type*	*L-T-P*	*Credit*	*Marks*
I		Introductory Microeconomics	**CC-1**	5-1-0	6	75
		Statistics-I	**CC-2**	5-1-0	6	75
		AECC-I ENVS	AECC-1	4-0-0	4	100
		Generic Elec(GE)-I – any discipline other than Economics	GE-1	5-1-0	6	75
II		IntroductoryMacroeconomics	**CC-3**	5-1-0	6	75
		Mathematical Economics –I	**CC-4**	5-1-0	6	75
		AECC-II Communicative English / MIL	AECC-2	2-0-0	2	50
		Generic Elec(GE)-II – any discipline other than Economics	GE-2	5-1-0	6	75
III		IntermediateMicroeconomics	**CC-5**	5-1-0	6	75
		IntermediateMacroeconomics	**CC-6**	5-1-0	6	75
		MathematicalEconomics –II	**CC-7**	5-1-0	6	75
		SkillEnhCourse (SEC)-I	SEC-1	2-0-0	2	50
		Generic Elec(GE)-III – any discipline other than economics	GE-3	5-1-0	6	75
IV		Selected Features of Indian Economy	**CC-8**	5-1-0	6	75
		Statistics-II	**CC-9**	5-1-0	6	75
		Development Economics	**CC-10**	5-1-0	6	75
		SkillEnhCourse(SEC)-II	SEC-2	2-0-0 0-0-2	2	50
		Generic Elec(GE)–IV – any discipline other than economics	GE-4	5-1-0	6	75

V		International Economics	**CC-11**	5-1-0	6	75
		Money and Banking	**CC-12**	5-1-0	6	75
	*	DiscSpElective(DSE)-I	**DSE-1**	5-1-0	6	75
	*	DSE-II	**DSE-2**	5-1-0	6	75
VI		Basic Econometrics	**CC-13**	5-1-0	6	75
		Field Survey& Project Report	**CC-14**	0-0-6	6	75
	*	DSE-III	**DSE-3**	5-1-0	6	75
	*	DSE-IV	**DSE-4**	5-1-0	6	75

*** Discipline Specific Electives**

DSE 1 (Semester V)	**DSE 3 (Semester VI)**
Rural Development Or Selected Features of West Bengal Economy	Social Economics Or Political Economy
DSE 2 (Semester V)	**DSE 4 (Semester VI)**
Environmental Economics Or Public Economics	Entrepreneurship Development Or Financial Economics

*** Skill Enhancement Courses**

SEC 1 (Semester-III)	**SEC 2 (Semester-IV)**
Indian Official Statistics Or Insurance Market & Products Or Managerial Economics	Basic Computer Applications Or Indian Stock Market Trading Or Business Project Formulation & Appraisal

Generic Electives (for other disciplines

GE 1 : Microeconomics
GE 2 : Macroeconomics
GE 3: Development Economics
GE 4: Features of Indian Economics

Honours Course Structure

Semester	*Core Course*	*Subject Elective (DSE)*	*Generic Elective (other dept)*	*AECC*	*AECC*	*SEC*	*Total Courses*	*Total Credits*
	6 credits	*6 credits*	*6 credits*	*2 credits*	*4 credits*	*2 credits*		
I	2		1		1		*4*	*22*
II	2		1	1			*4*	*20*
III	3		1			1	*5*	*26*
IV	3		1			1	*5*	*26*
V	2	2					*4*	*24*
VI	2	2					*4*	*24*
Total Courses	*14*	*4*	*4*	*2*	*4*	*2*	*26*	
Total Credits	*84*	*24*	*24*	*2*	*4*	*4*		*142*

DSE 1

Selected Features of West Bengal Economy

Full Marks: 75 **Credit: 6** **Lectures: 70**

1. **Early Economic History of Bengal:** **L-8**
   Economic history of the colonial period- -Entrepreneurship in Bengal in the 19th century- Deindustrialization and Drain of Resources- Economic consequences of partition- the case of Jute and Textile industry.
2. **Growth and Structural Transformation-** **L-10**
   Trends in the growth of State Domestic Product (SDP) - Trends in Sectoral contribution in SDP- Trends in per capita SDP- A comparison between Indian and West Bengal (All trends are from 1980's and mainly decadal trends using NSSO, SDP and Census Data).
3. **Employment Structure-** **L-10**
   Occupational Structure – trends in sectoral distribution of workforce- gender segregation of employment- A comparison with Indian and West Bengal- farm and non-farm employment- nature, extent and pattern of Rural Non-farm employment in West Bengal- marginalization and informalization of employment - Service sector expansion-causes and consequences(All trends are from 1980's and mainly decadal trends using Census and NSSO Data).
4. **Rural Livelihood-** **L-10**
   Agricultural Growth and trends in decadal growth rates since 1980's –cropping pattern-crop diversification-agricultural- mechanization-problems- Problems and prospects of small-scale and cottage industries- fishery and diary development- - Micro-credit and Self-Help Group- Performance of MGNREGS in West Bengal.
5. **Social Sector and Human Development-** **L-12**
   Education-Elementary education in West Bengal-Enrollment and Drop-out-Infrastructure of primary education- Health- Health Status in West Bengal- child

mortality and maternal mortality-A comparison with India, Kerala and Tamil Nadu-Human Development- concept, measurement and inter-district variation.

6. **Infrastructure**: **L-12**

Power generation and Rural Electrification-Growth of Banks in West Bengal- Bank Account and the extent of financial inclusion in West Bengal -Growth of Deposit, Credit-deposit ratio of commercial banks - Regional rural banks- Irrigation, Agro-marketing and Storage.

7. **Environment and Climate Change**: **L-8**

Land Use Pattern- Forest and common property Resources -Joint Forest Management in West Bengal- Pollution and health risks- Climate Change- Environmental Education.

References:

State Development Report, 2010, West Bengal, Planning Commission, Government of India

West Bengal Human Development Report, 2004, Oxford University Press

Sumit Sarkar(1973): The Swedeshi Movement in Bengal, People's Publishing House, New Delhi

N.K. Sinha(1962): Economic History of Bengal from Plassey to the Permanent Settlement.

Ratan Khasnabis, 2008,"The Economy of West Bengal", Economic and Political Weekly (December 27)

A. Raychaudhuri & Tuhin Das (ed.).2005. West Bengal Economy: Some Contemporary issues, Allied Publishers

B Rogaly, B Barbara Hariss-White and S Bose(1999): Sonar Bangla? Agricultural Growth and Agrarian Change in West Bengal and Bangladesh. Sage Publications.

Suvobrata Sarkar(2013):, Bengali Entrepreneurs and Western Technology in the Nineteenth Century: A Social Perspectives', Indian Journal of History of Science, Vol. 48, No. 3, September , pp. 447-75.

DES 2

Environmental Economics

Full Marks: 75 **Credit: 6** **Lectures: 70**

1. Introduction **(L- 10)**

- Interaction between man and nature, Key environmental issues and problems, Link between economy and environment: basic ideas,

2. Externalities **(L- 18)**

- Pareto optimality and market failure in the presence of externalities; types of externalities – effects - local, national and global, Environmental Assessment -Measurement issues of externalities, Cost-Benefit analysis (Concept), internalization of externalities

3. Property Right **(L- 10)**

Concept of property rights, the Coase theorem. Distinction among public, private, open access and common property resources

4. Environmental Policy **(L- 12)**

- Overview, Pigouvian taxes and effluent fees, tradable permits, choice between taxes and quotas, optimum pollution control model

5. International Environmental Problems (L- 10)

- Trans-boundary environmental problems; economics of climate change; trade and environment.

6. Institutions (L-5)

- Pollution Control Institutions/Organizations, - local-national-International level, UNEP, IPCC, CPCB, Green Bench,

7. Sustainable Development (L- 5)

- Concepts, rules and measurement.

References:

1. Charles Kolstad, Intermediate Environmental Economics, Oxford University Press, 2nd edition, 2010

2. Robert N. Stavins (ed.), Economics of the Environment: Selected Readings, W. W. Norton, 5th edition, 2005.

3. Roger Perman, Yue Ma, James McGilvray and Michael Common, Natural Resource and Environmental Economics, Pearson Education/Addison Wesley, 3rd edition, 2003

4. Pearce and Turner: Economics of natural resource and environment, Prentice Hall

5. Rabindranath Bhattacharyya: Environmental Economics, Oxford.

THE UNIVERSITY OF BURDWAN

Burdwan-713104, West Bengal

SYLLABUS FOR B.A. HONOURS

PROGRAMME

IN

ENGL

ISH

UNDER SEMESTER WITH CBCS

(Effective from 2017- 18)

Only ticked courses are chosen for reading and evaluation

ND stands for non-detailed study

Type	Credits	Number of Courses	Total credits
CC	6 credits per Course (5 theory, 1 tutorial)	14	84
DSE	6 credits per Course (5 theory, 1 tutorial)	4	24
GE [any discipline other than English]	6 credits per Course (5 theory, 1 tutorial)	4	24
AEC	AECC 1 – 4 credits, AECC 2 – 2 Credits	2	6
SEC	2 credits per paper	2	4
Total			**142**

CORE COURSE (CC)

- ✓ CC1: Indian Classical Literature
- ✓ CC2: European Classical Literature
- ✓ CC3: Indian Writing in English
- ✓ CC4: British Poetry, Drama (16^{th} – 17^{th} Centuries), and Rhetoric &Prosody
- ✓ CC5: American Literature
- ✓ CC6: Popular Literature
- ✓ CC7: British Poetry and Drama (17^{th} – 18^{th} Centuries)
- ✓ CC8: British Literature (18^{th} Century)
- ✓ CC9: British Romantic Literature
- ✓ CC10: British Literature (19^{th} Century)
- ✓ CC11: Women's Writing
- ✓ CC12: British Literature (Early 20^{th} Century)
- ✓ CC13: Modern European Drama
- ✓ CC14: Postcolonial Literatures

DISCIPLINE SPECIFIC ELECTIVE (DSE)

- ✓ DSE1: Modern Indian Writing in English Translation OR Travel Writing
- ✓ DSE2: Partition Literature OR British Literature: Post-WWII
- ✓ DSE3: Literary Theory OR Research Methodology
- ✓ DSE4: Literary Criticism and History of the English Language OR Literature of the Indian Diaspora

GENERIC ELECTIVE (GE) [For learners from other discipline(s)]

- ✓ GE1 : Poetry & Short Story
- ✓ GE2 : Essay,Drama and Novel
- ✓ GE3 : Contemporary India: Women and Empowerment
- ✓ GE4 : Academic Writing and Composition

ABILITY ENHANANCEMENT COMPULSORY COURSE (AECC)

- ✓ AECC - 1: Environmental Studies(to follow ENVS syllabus)
- ✓ AECC - 2: Communicative English / MIL

SKILL **ENHANANCEMENTCOURSE (SEC)**

- ✓ SEC1: Translation OR Creative Writing
- ✓ SEC2: ELT OR Film Studies

B.A. Honours Programme in English under CBCS

Structure at a Glance

Semester	Courses	Course type	Credit	Full Marks
Sem.- I	CC-I	Core Course	6	75
	CC-II	Core Course	6	75
	GE- 1	Interdisciplinary(other than English)	6	75
	ENVS	AECC 1	4	100
Sem.- II	CC-III	Core Course	6	75
	CC-IV	Core Course	6	75
	GE-2	Interdisciplinary(other than English)	6	75
	Communicative English/ MIL	AECC	2	50
Sem.-III	CC-V	Core Course	6	75
	CC-VI	Core Course	6	75
	CC-VII	Core Course	6	75
	GE-3	Interdisciplinary(other than English)	6	75
	SEC- 1	Skill based	2	50
Sem.-IV	CC-VIII	Core Course	6	75
	CC-IX	Core Course	6	75
	CC-X	Core Course	6	75
	GE-4	Interdisciplinary(other than English)	6	75
	SEC- 2	Skill based	2	50
Sem.-V	CC-XI	Core Course	6	75
	CC-XII	Core Course	6	75
	DSE- 1	Discipline Specific Elective	6	75
	DSE- 2	Discipline Specific Elective	6	75

Sem.-VI	CC-XIII	Core Course	6	75
	CC-XIV	Core Course	6	75
	DSE- 3	Discipline Specific Elective	6	75
	DSE- 4	Discipline Specific Elective	6	75

SEMESTERIV

✓ **CC - IX: British Romantic Literature**	
Section A	
1. a) William Wordsworth: 'Tintern Abbey'	10 (L) + 2 (T)
b) Samuel Taylor Coleridge: 'Kubla Khan'	5 (L) + 1 (T)
2. William Blake: 'Lamb', 'Chimney Sweeper' (***Songs of Innocence***) 'Chimney Sweeper' (***Songs of Experience***), 'The Tyger'	9 (L) + 2 (T)
Section B	
3. Jane Austen: ***Pride and Prejudice*****(ND)**	18 (L) + 3 (T)
4. a) George Gordon Byron: *Childe* ***Harolde*****'s Pilgrimage**(Canto III, verses 36-45)	15 (L) + 3 (T)
b) P.B. Shelley: 'Ode to the West Wind', 'Ozymandias'	8 (L) + 2 (T)
c) John Keats: 'Ode to a Nightingale', 'To Autumn'	10 (L) + 2 (T)
Topics	
Reason and Imagination, Conceptions of Nature, Literature and Revolution, The Gothic, The Romantic Lyric	**75 Lectures + 15 Tutorials = 90**
Recommended Readings	
1. William Wordsworth. 'Preface to Lyrical Ballads', in *Romantic Prose and Poetry*, ed. Harold Bloom and Lionel Trilling (New York: OUP, 1973) pp. 594–611.	
2. John Keats. 'Letter to George and Thomas Keats, 21 December 1817', 'Letter to Richard Woodhouse, 27 October, 1818', in *Romantic Prose and Poetry*, ed. HaroldBloom and Lionel Trilling (New York: OUP, 1973) pp. 766–68, 777–8.	
3. Jean-Jacques Rousseau. 'Preface' to *Emile or On Education*, tr. Allan Bloom (Harmondsworth: Penguin, 1991).	
4. Samuel Taylor Coleridge.*BiographiaLiteraria*, ed. George Watson (London:Everyman, 1993) chap. XIII, pp. 161–66.	
5. *From Blake to Byron* by Boris Ford	

ENVIRONMENTAL STUDIES

Credits: 4

Course Code: AEECC1

COURSE TITLE: FUNDAMENTALS OF ENVIRONMENTAL STUDIES

Lectures – 80

Unit 1: Basic of Environmental Studies **(06)**

Definition, Nature, Scope and Importance; Components of environment: Environmental education

Unit 2: Natural Resources: Renewable & Non-renewable Resources **(15)**

Nature and natural resources their conservation and associated problems:

- Forest resources: Uses, types and importance, Joint Forest Management & Tribal population, Deforestation and its effects
- Water resources: Distribution of water on Earth; Use, over exploitation of surface and ground water; Dams: Benefits and problems; Flood and Drought
- Mineral resources: Mineral resources in India; Use and exploitation, Social impacts of mining
- Food resources: World food problems and food insecurities.
- Energy resources: Renewable and Non-renewable energy sources; Use of alternate energy sources - Case studies
- Land resources: Land as a resource; Land degradation, landslides, soil erosion, desertification
- Use of resources for sustainable development

Unit 3: Ecology & Ecosystems **(12)**

Concept of ecology, Population ecology, Community ecology

- Concept of an ecosystem, different types of ecosystem
- Food chains, food weds and ecological succession
- Energy flow in the ecosystem and energy flow models

Unit 4: Biodiversity & Conservation **(12)**

- Biodiversity: Levels of biological diversity
- Values of biodiversity
- Hot-Spots of biodiversity, Mega-biodiversity countries
- Threat to biodiversity
- Threatened and endemic species of India
- Conservation of biodiversity (*In- situ* and *Ex-situ)*
- Ecosystem services: Ecological, Economical, Social, Ethical, Aesthetical and Informational values

Unit 5: Environmental Pollution & Management **(12)**

(a) Nature, Causes, Effects and Control measures of –

(i) Air pollution

(ii) Water pollution

(iii) Soil pollution

(iv) Noise pollution

v) Nuclear hazards

(b) Fireworks Pollution: Definition, Composition/Ingredients, effects, monitoring strategies

- Solid waste management: Causes, effects and disposal methods; Management of biomedical and municipal solid wastes
- Disaster management: Floods, Earthquake, Cyclone and Landslides

Unit 6: Environmental Policies & Practices **(15)**

- Constitutional Provisions for protecting environment- Articles 48(A), 51 A (g)
- Environmental Laws: The Environment (Protection) Act, 1986; The Air (Prevention and Control of Pollution) Act, 1981; The Water (Prevention and Control of Pollution) Act 1974; Forest (Conservation) Act, 1980
- The wildlife Protection Act, 1972
- Climate change, Global warming, ENSO, Acid rain, Ozone layer depletion; Montreal and Kyoto Protocols

Unit 7: Human Communities & Environment **(08)**

- Human population growth; Impacts on environment
- Population explosion – Family Welfare Programme
- Environment and human health: Concept of health and disease; Common communicable and Non- communicable diseases; Public awareness
- Environment movements in India: Chipko Movements, Silent Valley Movement, Movements in Karnataka

Unit 8: Field Work Report/Project Report/Term paper (based on any one of the following topics and to be evaluated by internal teachers only)

- Environmental assets - River/Forest/Grassland/Hill/Mountain *etc.*
- Environmental pollution - Urban/Rural/Industrial/Agricultural
- Study of common Plants/Insect /Birds/Wild life *etc*.
- Study of simple ecosystems: Pond/River/Hill slope *etc*.
- Municipal solid waste management and handling.

The University of Burdwan

Syllabus for B.A. / B.Sc. (Hons.)

in

Geography

under Semester with

Choice Based Credit System

w.e.f. 2017- 2018

COURSE STRUCTURE UNDER CHOICE BASED CREDIT SYSTEM FOR BA/B.Sc. HONOURS IN GEOGRAPHY

Semester-wise course structure

YEAR	SEMESTER	CORE COURSE (CC) (14)	ABILITY ENHANCEMENT COURSE (AECC) (2)	SKILL ENHANCEMENT COURSE (SEC) (2)	DISCIPLINE SPECIFIC ELECTIVE (DSE) (4)	GENERIC ELECTIVE (GE) (4)
FIRST YEAR	I	**CC-1. GEOTECTONICS AND GEOMORPHOLOGY** **CC-2.** Catrographic Techniques and Geological Map study	**ENVIRONMENTAL STUDIES**			**GE-1 (Any discipline other than Geography)**
	II	**CC-3. HUMAN GEOGRAPHY** **CC-4. CARTOGRAMS AND THEMATIC MAPPING**	**COMMUNICATIVE ENGLISH/MIL**			**GE-2 (Any discipline other than Geography)**
		CC-5. CLIMATOLOGY **CC-6. STATISTICAL METHODS IN**		**SEC-1. COMPUTER BASICS AND COMPUTER**		**GE-3 (Any discipline**

SECOND YEAR	III	GEOGRAPHY CC-7. GEOGRAPHY OF INDIA		APPLICATIONS OR REMOTE SENSING		other than Geography)
	IV	CC-8. REGIONAL PLANNING AND DEVELOPMENT CC-9. ECONOMIC GEOGRAPHY CC-10. ENVIRONMENTAL GEOGRAPHY		SEC-II ADVANCED SPATIAL STATISTICAL TECHNIQUES OR FIELD WORK		GE-4 (Any discipline other than Geography)
THIRD YEAR	V	CC-11. RESEARCH METHODOLOGY AND FIELD WORK CC-12. REMOTE SENSING AND GIS			DSE – 1 URBAN GEOGRAPHY OR CULTURAL AND SETTLEMEMT GEOGRAPHY DSE – 2 POPULATION GEOGRAPHY OR SOCIAL GEOGRAPHY	
	VI	CC-13. EVOLUTION OF GEOGRAPHICAL THOUGHTS CC-14. DISASTER MANAGEMENT			DSE – 3 FLUVIAL GEOMORPHO - LOGY OR RESOURCE GEOGRAPHY DSE – 4 SOIL AND BIO GEOGRAPHY OR AGRICULTURAL GEOGRAPHY	

COURSE STRUCTURE UNDER CHOICE BASED CREDIT SYSTEM FOR B.A/B.Sc. HONOURS IN GEOGRAPHY

Semester-wise distribution of Credits and marks

SEMESTER	COURSE OPTED	COURSE NAME	CREDIT	MARKS			NO. OF HOURS L-T-P (PER WEEK)
				IA	ESE	TOTAL	
I	ABILITY ENHANCEMENT: COMPULSORY COURSE - I	ENVIRONMENTAL STUDIES	4		100	100	
	CORE COURSE (CC 1)	GEOTECTONICS AND GEOMORPHOLOGY	6	15	60	75	5-1-0
	CORE COURSE (CC2)	CARTOGRAPHIC TECHNIQUES AND	4	15	40	75	4-0-0
		GEOLOGICAL MAP STUDY	2		20		0-0-4
	GENERIC ELECTIVE (GE1)	ANY DISCIPLINE OTHER THAN GEOGRAPHY	6	15	60	75	5-1-0
	TOTAL		**22**			**325**	
	ABILITY ENHANCEMENT: COMPULSORY COURSE -	COMMUNICATIVE ENGLISH/ MIL	2		50	50	

	II						
	CORE COURSE (CC3)	HUMAN GEOGRAPHY	6	15	60	75	5-1-0
II	CORE COURSE (CC4)	CARTOGRAMS, SURVEY AND THEMATIC MAPPING	4	15	40	75	4-0-0
			2		20		0-0-4
	GENERIC ELECTIVE (GE2)	ANY DISCIPLINE OTHER THAN GEOGRAPHY	6	15	60	75	5-1-0
	TOTAL		**20**			**275**	
III	CORE COURSE (CC5)	CLIMATOLOGY	6	15	60	75	5-1-0
	CORE COURSE (CC6)	STATISTICAL METHODS IN GEOGRAPHY	4	15	40	75	4-0-0
			2		20		0-0-4
	CORE COURSE (CC7)	GEOGRAPHY OF INDIA	6	15	60	75	5-1-0
	SKILL ENHANCEMENT COURSE (SEC1)	SEC- 1 (COMPUTER BASICS AND COMPUTER APPLICATIONS OR REMOTE SENSING)	2	10	40	50	0-0-4
	GENERIC ELECTIVE (GE3)	ANY DISCIPLINE OTHER THAN GEOGRAPHY	6	15	60	75	5-1-0
	TOTAL		**26**			**350**	
IV	CORE COURSE (CC8)	REGIONAL PLANNING AND DEVELOPMENT	6	15	60	75	5-1-0
	CORE COURSE (CC9)	ECONOMIC GEOGRAPHY	6	15	60	75	5-1-0
	CORE COURSE (CC10)	ENVIRONMENTAL GEOGRAPHY	4	15	40	75	4-0-0
			2		20		0-0-4
	SKILL ENHANCEMENT COURSE (SEC2)	SEC- 2 ADVANCED SPATIAL STATISTICAL TECHNIQUES OR FIELD WORK	2	10	40	50	0-0-4
	GENERIC ELECTIVE (GE4)	ANY DISCIPLINE OTHER THAN GEOGRAPHY	6	15	60	75	5-1-0
	TOTAL		**26**			**350**	

SEMESTER	**COURSE OPTED**	**COURSE NAME**	**CREDIT**	**MARKS**			**NO. OF HOURS L-T-P (PER WEEK)**
				IA	**ESE**	**TOTAL**	
V	CORE COURSE (CC11)	RESEARCH METHODOLOGY AND FIELD WORK	4	15	40	75	4-0-0
			2		20		0-0-4
	CORE COURSE (CC12)	REMOTE SENSING AND GIS	4	15	40	75	4-0-0
			2		20		0-0-4
	DISCIPLINE SPECIFIC ELECTIVE (DSE)	DSE – 1 URBAN GEOGRAPHY OR CULTURAL AND SETTLEMENT GEOGRAPHY	6	15	60	75	5-1-0
	DISCIPLINE SPECIFIC ELECTIVE (DSE)	DSE 2 POPULATION GEOGRAPHY OR SOCIAL GEOGRAPHY	6	15	60	75	5-1-0

	TOTAL		**24**			**300**	
VI	CORE COURSE (CC13)	EVOLUTION OF GEOGRAPHICAL THOUGHTS	6	15	60	75	5-1-0
	CORE COURSE (CC14)	DISASTER MANAGEMENT	4	15	40	75	4-0-0
			2		20		0-0-4
	DISCIPLINE SPECIFIC ELECTIVE(DSE3)	DSE – 3 FLUVIAL GEOMORPHOLOGY OR RESOURCE GEOGRAPHY	6	15	60	75	5-1-0
	DISCIPLINE SPECIFIC ELECTIVE(DSE4)	DSE – 4 SOIL AND BIO GEOGRAPHY OR AGRICULTURAL GEOGRAPHY	6	15	60	75	5-1-0
	TOTAL		**24**			**300**	
	TOTAL OF ALL SEMESTERS		**142**			**1900**	

*L-T-P = LECTURE-TUTORIAL-PRACTICAL

B.A./B.Sc. (Honours) in Geography

CC1 - Geotectonics and Geomorphology — 6 Credits

Unit 1: Geotectonics

1. Earth's tectonic and structural evolution with reference to geological time scale
2. Earth's interior with special reference to seismology.
3. Concept of Isostasy:Theories of Airy and Pratt
4. Plate Tectonics: Processes at constructive, conservative, destructive boundaries and hotspots: resulting landforms

Unit 2: Geomorphology

1. Degradational processes: Weathering, mass wasting and resultant landforms
2. Models of landscape evolution: Views of Davis, Penck, and Hack
3. Slope Development: Concept of Wood
4. Development of river network and landforms on uniclinal and folded structures
5. Types of rocks, mineralogical composition of igneous rocks; Landforms on igneous rocks with special reference to Granite and Basalt
6. Karst landforms: Surface and sub-surface
7. Glacial and fluvio-glacial processes and landforms
8. Aeolian and fluvio-aeolian processes and landforms.

Reference Books

- Bloom A. L., 2001: Geomorphology: A Systematic Analysis of Late Cenozoic Landforms,Prentice-Hall of India, New Delhi
- Bridges E. M., 1990: World Geomorphology, Cambridge University Press, Cambridge.

- Christopherson, Robert W., (2011), Geosystems: An Introduction to Physical Geography, 8 Ed., Macmillan Publishing Company
- Kale V. S. and Gupta A., 2001: Introduction to Geomorphology, Orient Longman, Hyderabad.
- Knighton A. D., 1984: Fluvial Forms and Processes, Edward Arnold Publishers, London.
- Selby, M.J., (2005), Earth's Changing Surface, Indian Edition, OUP
- Skinner, Brian J. and Stephen C. Porter (2000), The Dynamic Earth: An Introduction to physical Geology, 4th Edition, John Wiley and Sons
- Thornbury W. D., 1969: Principles of Geomorphology, Wiley.

CC2 (Theory) – CartographicTechniques and Geological map study 4 Credits

1. Maps: Classification and Types. Components of a Map
2. Concept of Scales: Plain, Comparative, Diagonal and Vernier
3. Coordinate Systems: Polar and Rectangular. Concept of Geoid and Spheroid. Map Projections: Classification, Properties and Uses. Concept and Significance of UTM Projection
4. Concept of Generating Globe, Grids: Angular and Linear Systems of Measurement

5. Survey of India Topographical Maps: Reference scheme of Old and Open series
6. Delineation of Drainage Basin from Survey of India Topographical Map. Concept of Relief, Slope and Stream Order.
7. Types of rocks and minerals. Characteristics of Granite, Basalt, Dolerite, Pegmatite, Gneiss, Shale, Sandstone, Slate, Marble, Quartzite, Quartz, Feldspar, Mica, Limestone, Calcite, Bauxite, Magnetite, Hematite, Galena
8. Concept of Bedding Plane, Unconformity and Non-conformity, thickness of Bed, Dip, Throw, Hade, heave

CC2 (Practical) – Cartographic Techniques and Geological map study2 Credits

1. Construction of Scales: Plain, Comparative, Diagonal and Vernier

2. Construction of Projections: Polar Zenithal Stereographic, Simple Conic with two Standard Parallels, Bonne's and Mercator's
3. Construction and Interpretation of Relief Profiles (Superimposed, Projected and Composite),Preparation of Relative Relief Map, Slope map (Wentworth), and Stream Ordering(Strahler) on a Drainage Basin.
4. Geological Map (Problems related to Horizontal, Uniclinal, Folded and Faulted structure); Drawing ofGeological section and Interpretation of the Map.

*A Project File, comprising one exercise each is to be submitted.

Reference Books

Anson R. and Ormelling F. J., 1994: International Cartographic Association: Basic Cartographic Vol. Pregmen Press. Gupta K.K. and Tyagi, V. C., 1992: Working with Map, Survey of India, DST, New Delhi.
Mishra R.P. and Ramesh, A., 1989: Fundamentals of Cartography, Concept, New Delhi
Monkhouse F. J. and Wilkinson H. R., 1973: Maps and Diagrams, Methuen, London.
Robinson A. H., 2009: Elements of Cartography, John Wiley and Sons, New York
Singh R. L. and Singh R. P. B., 1999: Elements of Practical Geography, Kalyani Publishers.
Sarkar, A. 2015: Practical geography: A systematic approach. Orient Black Swan Private Ltd., New Delhi

CC3 (Theory) – Human Geography 6

Credits Unit 1: Nature and Principles

1. Nature, scope and recent trends of Human Geography
2. Evolution of humans, concept of race and ethnicity; Major Racial Groups of the world
3. Space, society and cultural regions (language and religion)
4. Concept of Culture, Cultural Diffusion, Convergence, Cultural Realms of the world

Unit 2: Society, Demography and Ekistics

1. Evolution of human societies: Hunting and gathering, Pastoral nomadism, Subsistence farming, Industrial and urban societies
2. Human - environment relations with special reference to Arctic and hot desert regions

3. Population growth and distribution, population composition; demographic transition model

4. Population–Resource regions
5. Human, population and environment relations with special reference to development– environmentconflict
6. Social morphology and rural house types in India
7. Types and patterns of rural settlements
8. Functional Classification of urban settlements

Reference Books

Bergman, E.F (1995): Human Geography-Culture, Connections and Landscape, Prentice Hall, New Jersey Chisholm. (1975): Human Geography, Penguin Books, Hermondsworth.

Daniel, P.A. and Hopkinson, M.F. (1989) The Geography of Settlement, Oliver & Boyd, London. Johnston R; Gregory D, Pratt G. et al. (2008) The Dictionary of Human Geography, Blackwell Publication. Jordan-Bychkov et al. (2006) The Human Mosaic: A Thematic Introduction to Cultural Geography. W. H. Freeman and Company, New York.
Pearce D. (1995): Tourism Today: A Geographical Analysis, 2nd edition, Longman Scientific & Technical, London
Pickering K. and Owen A. A. (1997): An Introduction to Global Environmental Issues, 2nd edition Rutledge, London. Raw, M. (1986): Understanding Human Geography: A Practical Approach, Bell and Hyman. London Rubenstein, J.M. (2002), The Cultural Landscape, 7th edition, Prentice Hall, Englewood Cliffs Smith
D M (1982): Human Geography: A Welfare Approach, Edward Arnold, London

Syllabus for B.A./B.Sc. (Honours) in Geography Semester IV

Core Course (CC)	Skill Enhancement Course (SEC)	Generic Elective (GE)
CC-8 (Theory) **REGIONAL PLANNING AND DEVELOPMENT**	**SEC –2 (Practical)** **ADVANCED SPATIAL STATISTICAL TECHNIQUES**	**GE4 (Any Discipline other than Geography**
CC-9 (Theory) **ECONOMIC GEOGRAPHY**	**OR**	
CC-10 (Theory) **ENVIRONMENTAL GEOGRAPHY**	**SEC –2 (Practical)**	
CC-10 (Practical) **ENVIRONMENTAL**	**FIELD WORK**	

GEOGRAPHY		

CC 10 : ENVIRONMENTAL GEOGRAPHY Credit: 6 (4+2)

Environmental Issues

1. Geographers' Approach to Environmental Studies
2. Changes in Perception of Environment in different stages of Human Civilization
3. Ecosystem: Concept, Structure and Functions
4. Environmental Degradation and Pollution: Water and Air
5. Environmental Issues related to Agriculture
6. Urban Environmental issues related to Waste Management
7. Concept and Issues related to Bio-diversity
8. Environmental Programs and Policies on Forest and Wetland: National and Global

CC 10 (Practical) : ENVIRONMENTAL GEOGRAPHY Credit: 2

Total Marks: 20 {10+ 10(5+5)} End Term Examination Time: 2 hours

Pattern of Setting Questions:

- 2 questions to be answered, each question carries 5 Marks, Total 10 Marks;
- Evaluation of Laboratory Note Book 5 Marks
- Viva-Voce 5 Marks

Environmental Geography (Practical)

1. Preparation of questionnaire for perception survey on environmental problems
2. Environmental Impact Assessment: Leopold Matrix
3. Quality assessment of soil using field kit: pH and NPK
4. Interpretation of air quality using CPCB / WBPCB data

- **Internal Assessment: 15 (Assessment 10 and Attendance 05) Marks**

Reference Books

1. Chandna R. C., 2002. Environmental Geography. Kalyani, Ludhiana.
2. Cunninghum W. P. and Cunninghum M. A., 2004. Principals of environmentalcience: Inquiry and Applications. Tata Macgraw Hill, New Delhi.
3. Goudie A. 2001. The Nature of the Environment. Blackwell, Oxford.
4. Kormondy, Edward J.2012.Concepts of Ecology.PHI Learning Pvt. Ltd., New Delhi.
5. Miller G. T. 2004. Environmental Science: Working with the Earth, Thomson, Brooks Cole, Singapore.
6. MoEF, 2006. National Environmental Policy-2006. Ministry of Environment and Forests, Government of India.
7. Odum, E. P. et al.2005.Fundamentals of Ecology. Ceneage Learning, India.
8. Sharma, P.D.2015. Ecology and Environment. Rastogi Publications, Meerut.
9. Singh, R.B. (Eds.) (2009) Biogeography and Biodiversity. Rawat Publication, Jaipur.
10. Singh, R.B. and Hietala, R. (Eds.) (2014) Livelihood security in Northwestern Himalaya: Case studies from changing socio-economic environments in Himachal Pradesh, India. Advances in Geographical and Environmental Studies. Springer.
11. Singh, S. 1997. Environmental Geography. PrayagPustakBhawan. Allahabad.
12. Singh, R.B. 1998. Ecological Techniques and Approaches to Vulnerable Environment. Oxford & IBH Pub, New Delhi.
13. UNEP, 2007. Global Environment Outlook: GEO4: Environment For Development. United Nations Environment Programme.
14. Basu, R.andBhaduri, S.(Eds.).2007.Contemporary Issues and Techniques in Geography. Progressive Publishers, Kolkata.
15. Gilpin, A. 1994. Environmental Impact Assessment: Cutting Edge for the 21st Century (EIA: Cutting Edge for the Twenty-First Century. Cambridge University Press)

GENERIC ELECTIVE [For other discipline(s)]

GE- 4 : ENVIRONMENTAL GEOGRAPHY Credit: 4

Theoretical : Credit: 4 Total Marks: 40 End Term Examination Time: 2 hours

Pattern of Setting Questions:

- 5 questions to be answered out of 8, each question carries 02 Marks, Total 10 Marks;
- 2 questions to be answered out of 4, each question carries 05 Marks, Total 10 Marks;
- 2 questions to be answered out of 4, each question carries 10 Marks, Total 20 Marks

1. Concepts and Approaches of Environmental Geography:
2. Concept, Structure and Functions of Ecosystem
3. Human-Environment Relationship in Mountain and Coastal Regions
4. Environmental Problems and Management: Air and Water Pollution
5. Environmental Programmes and Policies: MAB
6. Forest and Wild Life Policy of India
7. Environmental Movements in India: Chipko
8. Wetlands: Ramsar Sites in India

Reference

1. Casper J.K. (2010) Changing Ecosystems: Effects of Global Warming. Infobase Pub. New York.
2. Hudson, T. (2011) Living with Earth: An Introduction to Environmental Geology, PHI
3. Learning Private Limited, New Delhi.
4. Miller, G.T. (2007) Living in the Environment: Principles, Connections, and Solutions,
5. Brooks/ Cole Cengage Learning, Belmont.
6. Singh, R.B. (1993) Environmental Geography, Heritage Publishers, New Delhi.
7. UNEP (2007) Global Environment Outlook: GEO4: Environment For Development, United
8. Nations Environment Programme. University Press, Cambridge.
9. Wright R. T. and Boorse, D. F. (2010) Toward a Sustainable Future, PHI Learning Pvt Ltd,
10. New Delhi.
11. Singh, R.B. and Hietala, R. (Eds.) (2014) Livelihood security in Northwestern Himalaya:
12. Case studies from changing socio-economic environments in Himachal Pradesh,

13. India. Advances in Geographical and Environmental Studies, Springer

Syllabus for B.A./B.Sc. (Honours) in Geography Semester V

Core Course (CC)	Discipline Specific Elective (DSE)
CC-11 (Theory) RESEARCH METHODOLOGY AND FIELD WORK	DSE – 1 URBAN GEOGRAPHY OR CULTURAL AND SETTLEMENT GEOGRAPHY
CC-11 (Practical) RESEARCH METHODOLOGY AND FIELD WORK	
CC-12 (Theory) REMOTE SENSING AND GIS	DSE – 2 POPULATION GEOGRAPHY OR SOCIAL GEOGRAPHY
CC-12 (Practical) REMOTE SENSING AND GIS	

Semester - V

CC 12 : REMOTE SENSING AND GIS

Credit: 6(4+2)

Theoretical : Credit 4 Total Marks: 40 End Term Examination Time: 2 hours

Unit 1: Remote Sensing

1. Definition, Concepts and Principles of Remote Sensing (RS): Types of Air Photo, RS satellites, sensors and platforms.
2. EMR Interaction with Atmosphere and Earth Surface, Sensor resolutions and their applications with reference to IRS.
3. Principles of False Colour Composites (FCC) from IRS LISS-III and Landsat Images (ETM+) data: Image Processing, Pre-processing; Enhancement; Classification.
4. Principles of image interpretation for Forest, Water and Soil

Unit 2: GIS and GNSS

1. Definition and Components of Geographical Information System (GIS) and raster and

vector data structures

2. Principles of preparing attribute tables and overlay analysis

3. Principles of GNSS positioning - Uses and Waypoint Collection Methods

4. Applications of Geographical Information System in Flood Management and Urban Sprawl

CC 12 **(Practical)** : **REMOTE SENSING AND GIS**

Credit: 2 Total Marks: 20 {10+ 10(5+5)} End Term Examination Time: 2 hours

Reference Books

1. Campbell J. B., 2007: Introduction to Remote Sensing, Guildford Press.
2. Jensen J. R., 2004: Introductory Digital Image Processing: A Remote Sensing Perspective, Prentice Hall.
3. Joseph, G. 2005: Fundamentals of Remote Sensing, United Press India.
4. Lillesand T. M., Kiefer R. W. and Chipman J. W., 2004: Remote Sensing and Image Interpretation, Wiley. (Wiley Student Edition).
5. Nag P. and Kudra, M., 1998: Digital Remote Sensing, Concept, New Delhi.
6. Rees W. G., 2001: Physical Principles of Remote Sensing, Cambridge University Press.
7. Singh R. B. and Murai S., 1998: Space-informatics for Sustainable Development, Oxford and IBH Pub.
8. Wolf P. R. and Dewitt B. A., 2000: Elements of Photogrammetry: With Applications in GIS, McGraw- Hill.
9. Sarkar, A. (2015) Practical geography: A systematic approach. Orient Black Swan Private Ltd., New Delhi

The University of Burdwan

Syllabus for

B.Sc.(Hons.) in

Microbiology

Under Choice Based Credit System

w.e.f. 2017-2018 onward

UG Course in Microbiology under CBCS Pattern, The University of Burdwan

Course Code	Course Title	Credit		Marks			No. of Hours	
			I.A. (Th +Prc)	ESE		Total	Lec/ week	Prc/ week
				Th	Prc			
CC-1	Introduction to Microbiology and Microbial Diversity (Theory & Practical)	6	10+5=15	40	20	75	4	4
CC-2	Bacteriology (Theory & Practical)	6	10+5=15	40	20	75	4	4
GE-1	Introduction and Scope of Microbiology OR Bacteriology&Virology (Theory &Practical)	6	10+5=15	40	20	75	4	4
AECC-1	ENVS	4				100	4	
Total in Semester I		22	45	120	60	325		
CC-3	Biochemistry (Theory & Practical)	6	10+5=15	40	20	75	4	4
CC-4	Virology (Theory & Practical)	6	10+5=15	40	20	75	4	4
GE-2	MicrobialMetabolism OR MicrobesinEnvironment (Theory &Practical)	6	10+5=15	40	20	75	4	4
AECC-2	English Communication/MIL	2				50	2	4
Total in Semester II		20	45	120	60	275		
CC-5	Microbial Physiology & Metabolism (Theory & Practical)	6	10+5=15	40	20	75	4	4
CC-6	Cell Biology (Theory & Practical)	6	10+5=15	40	20	75	4	4
CC-7	Molecular Biology (Theory & Practical)	6	10+5=15	40	20	75	4	4
GE-3	Medical Microbiology&Immunology OR Industrial & FoodMicrobiology (Theory & Practical)	6	10+5=15	40	20	75	4	4
SEC-1	Microbiological Analysis of Air and Water OR Microbial Diagnosis in Health Clinics	2	10	40		50	2	

Total in Semester III		26	70	280		350		
CC-8	Microbial Genetics (Theory & Practical)	6	10+5=15	40	20	75	4	4
CC-9	EnvironmentalMicrobiology (Theory &Practical)	6	10+5=15	40	20	75	4	4
CC-10	Food andDairyMicrobiology (Theory &Practical)	6	10+5=15	40	20	75	4	4
GE-4	Genetic Engineering&Biotechnology O RMicrobial Genetics & Molecular Biology (Theory &Practical)	6	10+5=15	40	20	75	4	4
SEC-2	Bio- fertilizersandBio-pesticides OR Food Fermentation Techniques	2	10	40		50	2	
Total in Semester IV		26	70	280		350		
CC-11	IndustrialMicrobiology (Theory &Practical)	6	10+5=15	40	20	75	4	4
CC-12	Immunology (Theory & Practical)	6	10+5=15	40	20	75	4	4
DSE-1	Microbes in Sustainable Agriculture and Development OR Bioinformatics (Theory &Practical)	6	10+5=15	40	20	75	4	4
DSE-2	InstrumentationandBiotechniques OR MicrobialBiotechnology (Theory &Practical)	6	10+5=15	40	20	75	4	4
Total in Semester V		24	60	160	80	300		
CC-13	MedicalMicrobiology (Theory &Practical)	6	10+5=15	40	20	75	4	4
CC-14	Recombinant DNA Technology (Theory & Practical)	6	10+5=15	40	20	75	4	4
DSE-3	AdvancesinMicrobiology OR Term Paper & Its Power PointPresentation (Theory & Practical)	6	10+5=15	40	20	75	4	4
DSE-4	Bio-safety and Intellectual Property Rights OR Plant Pathology (Theory & Practical)	6	10+5=15	40	20	75	4	4
Total in Semester VI		24	60	160	80	300		

MCBH = Subject Code, CC= Core Course, AECC= Ability Enhancement Compulsory Course, SEC= Skill Enhancement Course, GE= Generic Elective, DSE= Discipline Specific Elective IA= Internal Assessment, ESE= End-Semester Examination, Lec.=Lecture, Tu.= Tutorial, Th= Theory and Prc.=Practical

Option each from GE, DSE and SEC may be selected only once by a candidate.

Core Course (CC) 5 : MIROBIAL PHYSIOLOGY&METABOLISM Credit :6
Theory Credit:4 Total no. of classes: 60

Unit 1: Microbial Growth and Effect of Environment on Microbial Growth

Definitions of growth, measurement of microbial growth, Batch culture, Continuous culture, generation time and specific growth rate, synchronous growth, diauxic growth curve. Microbial growth inresponse toenvironment -Temperature (psychrophiles, mesophiles, thermophiles, thermodurics, psychrotrophs), pH (acidophiles, alkaliphiles, neutrophiles), solute and water activity (halophiles, xerophiles, osmophiles), Oxygen (aerobic, anaerobic, microaerophilic, facultative aerobic, facultative anaerobic), barophilic. Microbial growth inresponse tonutrition and energy – Autotroph, Phototroph, Heterotroph (eg. Chemolithoautotroph, Chemolithoheterotroph, Chemoheterotroph, Chemolithotroph, photolithoautotroph,Photoorganoheterotroph).

Unit 2: Nutrient uptake and Transport

Passive and facilitated diffusion, Primary and secondary active transport, concept of uniport, symport and a ntiport, Group translocation, Iron uptake

Unit 3: Chemoheterotrophic Metabolism - Aerobic Respiration

Concept of aerobic respiration, Sugar degradation pathways i.e. EMP, ED, Pentose phosphate pathway, TCA cycle. Electron transport chain: components of respiratory chain, comparison ofmitochondrial and bacterial ETC, different types of phosphorylation, uncouplers and inhibitors

Unit 4:Che moheterotrophic Metabolism- Anae robic respiration and fermentation

Anaerobic respiration with special reference todissimilatory nitrate reduction (Denitrification; nitrate /nitrite and nitrate/ammonia respiration)

Fermentation - Alcohol fermentation andPasteur effect, Lactate fermentation (homofermentative and heterofermentativepathways).

Unit 5: Chemolithotrophic and Phototrophic Metabolis m

Introduction to aerobic and anaerobic chemolithotrophy with an example of each, Hydrogen oxidation (definition and reaction) and methanogenesis (definition and reaction)

Introduction to phototrophic metabolism - groups of phototrophic microorganisms, photosynthetic pigment apparatus, Photosynthesis in green bacteria, purple bacteria and

cyanobacteria

Unit 6 Nitrogen Metabolism - an overview

Introduction to biological nitrogen fixation, Ammonia assimilation, Assimilatory nitrate reduction, Dissimilatory nitrate reduction, Denitrification

REFERENCE BOOKS:

1. Madigan MT and Martinko JM (2014). Brock Biology of Microorganisms. 14th edition. Prentice Hall InternationalInc.
2. Moat AG and Foster JW. (2002). Microbial Physiology. 4th edition. John Wiley &Sons
3. Reddy SR and Reddy SM. (2005). Microbial Physiology. Scientific PublishersIndia
4. Gottschalk G. (1986). Bacterial Metabolism. 2nd edition. SpringerVerlag
6. Stanier RY, Ingrahm JI, Wheelis ML and Painter PR. (1987). General Microbiology. 5th edition, McMillanPress.
7. Willey JM, Sherwood LM, and Woolverton CJ. (2013). Prescott's Microbiology. 9th edition. McGraw Hill HigherEducation.

Practical:MOLECULARBIOLOGY Credit :2

1. StudyofdifferenttypesofDNAandRN Ausingmicrographsandmodel
2. Studyofsemi-conservativereplicationofDNAthroughmicrographs
3. Isolation of genomic DNA from *E.coli*.
4. Estimation of DNA and its purity check using UV spectrophotometer (A_{260} measurement).
5. Estimation of RNA using UV spectrophotometer (A_{260}measurement).
6. Resolution and visualization of DNA by AgaroseGel Electrophoresis.
7. EstimationofProteinsbyusingUVspectrophotometer(A_{280}measurement)

Core Course (CC 9) : ENVIRONMENTAL MICROBIOLOGY Credit :6
Theory: Credit:4 Total no. of classes:60

Unit 1: Microorganisms and their Habitats

Structure and function of ecosystems, Terrestrial Environment: Soil profile and soil microflora, Aquatic Environment: Micro- flora of fresh water and marine habitats. Atmosphere: Aero- micro- flora: basic idea. Extreme Habitats: Microbes thriving at high & low temperatures, pH, high hydrostatic & osmotic pressures, salinity & low nutrient levels

Unit 2: Microbial Interactions

Microbe-Microbe interactions: Mutualism, synergism, commensalism, competition, amensalism, parasitism, predation. Microbe-Plant interaction: Symbiotic and non symbiotic interactions. Microbe-Animal interaction: Microbes in ruminants, nematophagus fungi and symbiotic luminescent bacteria

Unit 3: Biogeochemical Cycling

Role of microbes in Carbon cycle, N itrogen cycle, Sulphur cycle, Phosphorus cycle.

Unit 4: Waste Management

Solid Waste management: Sources and types of solid waste, Methods of solid waste disposal (composting and sanitary landfill). Liquid waste management: Composition and strength of sewage (BOD and COD), Primary, secondary (oxidation ponds, trickling filter, activated sludge process and septic tank) and tertiary sewage treatment

Unit5:MicrobialBiore mediation

Principles and degradation of common organic (hydrocarbons, oil spills)

Unit 6: Water Potability

Treatment and safety of drinking water, methods to detect potability of water samples: (a) standard qualitative procedure: MPN test(presumptive test,confirmatory and completed test) for fecal coliforms (b) Membrane filter technique.

REFERENCE BOOKS:

1. Atlas RM and Bartha R. (2000). Microbial Ecology: Fundamentals & Applications. 4th edition. Benjamin/Cummings Science Publishing,USA

2. Madigan MT, Martinko JM and Parker J. (2014). Brock Biology of Microorganisms. 14th edition. Pearson/ BenjaminCummings

3. Maier RM, Pepper IL and Gerba CP. (2009). Environmental Microbiology. 2nd edition, AcademicPress

4. Okafor, N (2011). Environmental Microbiology of Aquatic & Waste systems. 1st edition, Springer, NewYork

5. Singh A, Kuhad, RC &Ward OP (2009). Advances in Applied Bioremediation. Volume 17, Springer-Verlag, BerlinHedeilberg

6. Barton LL & Northup DE (2011). Microbial Ecology. 1st edition,Wiley

Blackwell, USA Campbell RE. (1983). Microbial Ecology. Blackwell Scientific Publication, Oxford, England.

7. Coyne MS. (2001). Soil Microbiology: An Exploratory Approach. Delmar Thomson Learning.
8. Lynch JM & Hobbie JE. (1988). Microorganisms in Action: Concepts & Application in Microbial Ecology. Blackwell Scientific Publication,U.K.
9. Martin A. (1977). An Introduction to Soil Microbiology. 2nd edition. John Wiley &Sons Inc. New York &London.
10. Stolp H. (1988). Microbial Ecology: Organisms Habitats Activities. Cambridge University Press, Cambridge,England.
11. Subba Rao NS. (1999). Soil Microbiology. 4th edition. Oxford & IBH Publishing Co. NewDelhi.
12. Willey JM, Sherwood LM, and Woolverton CJ. (2013). Prescott's Microbiology. 9th edition. McGraw Hill HigherEducation.

Practical :ENVIRONMENTALMICROBIOLOGY **Credit :2**

1. Analysis of soil - pH, moisture content, water holdingcapacity
2. Isolationofcellulosedegradingmicrobesbyenrichmentculturetechnique
3. Isolation of microbes (bacteria &fungi) from rhizosphere andrhizoplane
4. Assessmentofmicrobiologicalquality ofwaterbyusingbacterialfilterdiscmethod
5. AssessmentofmicrobiologicalqualityofwaterbyMPNtest
6. Study the presence of microbial activity by detecting enzymes (amylase)in soil
7. Isolation of *Rhizobium* from rootnodules

B.A./B.Sc. (General)Program in Physical Education w.e.f. 2017-18

1st Semester

Course Code	Course Title	Course Type	LTP	Credit	Marks
CC1A	Foundation and History of Physical Education	Core course	4-0-2	6	75
CC2A	Discipline-2 (Core-1) other than Physical Education	Core course		6	75
CC (Language)	Language 1A	Core course Language	5-1-0	6	75
AECC 1	Environmental Studies	AECC-1 compulsory	4-0-0	4	100
		SEMESTER TOTAL		**22**	**325**

B.A./B.Sc. Program in Physical Education

2nd Semester

Course Code	Course Title	Course Type	LTP	Credit	Marks
CC1B	Management of Physical Education and Sports	Core course	4-0-2	6	75
CC2B	Discipline-2(Core-2) other than Physical Education	Core course		6	75
CC(Language)	Language 2A	Core course Language	5-1-0	6	75
AECC-2	communicative ENG or MIL	AECC-2 Compulsory	2-0-0	2	50
		SEMESTER TOTAL		**20**	**275**

B.A./B.Sc. Program in Physical Education

3rd Semester

Course Code	Course Title	Course Type	LTP	Credit	Marks
CC1C	Anatomy, Physiology and Exercise Physiology	Core course	4-0-2	6	75
CC2C	Discipline-2 (Core-3) other than Physical Education	Core course		6	75
CC (Language)	Language 1B	Core course Language	5-1-0	6	75
SEC (1)	Track and Field	SEC	0-0-2	2	50
		SEMESTER TOTAL		**20**	**275**

B.A./B.Sc. Program in Physical Education

4th Semester

Course Code	Course Title	Course Type	LTP	Credit	Marks
CC1D	Health Education, Physical Fitness and Wellness	Core course	4-0-2	6	75
CC2D	Discipline-2 (Core-4) other than Physical education	Core course		6	75
CC (Language)	Language 2B	Core course Language	5-1-0	6	75
SEC (2)	Gymnastics and Yoga	SEC	0-0-2	2	50
		SEMESTER TOTAL		**20**	**275**

B.A./B.Sc. Program in Physical Education
5th Semester

Course Code	Course Title	Course Type	LTP	Credit	Marks
DSE 1	DSE (Any one from Discipline-1 and any one from Discipline-2)				
	Discipline-1 (any one)	**DSE**		**6**	75
	Tests, Measurements and Evaluation in Physical Education		4-0-2		
	Sports Training		4-0-2		
	Discipline-2(Other than physical Education)			**6**	75
	1		5-0-1		
	2		5-0-1		
GE 1	GE -1 (for the students other than Phy. Edn.)	GE		6	75
	Modern trends in Physical Education and Sports Sciences		6-0-0		
SEC 3	SEC 3	SEC		2	50
	Indian Games (any one)- Kabaddi / Kho-Kho **And** **Racket Sports (Any one)-** Badminton/ Table Tennis		0-0-2		
		SEMESTER TOTAL		**20**	**275**

B.A./B.Sc. Program in Physical Education
6th Semester

Course Code	Course Title	Course Type	LTP	Credit	Marks
DSE 2	DSE (Any one from Discipline-1 and any one from Discipline-2)				
	Discipline-1(Any one)	**DSE**		**6**	**75**
	Psychology in Physical Education and Sports		4-0-2		
	Project work		2-0-4		
	Discipline-2(Other than physical Education)			**6**	**75**
	1		**5-0-1**		
	2		**5-0-1**		
GE 2	GE 2 (for the students other than Phy. Edn.)	GE		6	**75**
	Health Education and Tests & Measurements in Physical Education		6-0-0		
			4-0-2		
SEC 4	SEC4	**SEC**		2	**50**
	Ball Games (any two) Football/Handball/Basketball/ Volleyball/ Netball/ Throwball		0-0-2		
		SEMESTERTOTAL		**20**	**275**

SEMESTER- 1

CORE PAPER-1: Foundation and History of Physical Education

Corse Code- CC1A

Total number of classes - 60

Unit- I: Introduction **LH - 12**

Meaning and definition of Physical Education.
Aim and objectives of Physical Education.
Modern concept of Physical Education.
Importance of Physical Education.

Unit- II: Biological and Sociological Foundations of Physical Education LH - 18

Biological Foundation- Meaning and definition of growth and development. Factors affecting growth and development. Differences of growth and development. Principles of growth and development.
Age- Chronological age, anatomical age, physiological age and mental age.
Sociological Foundation- Meaning and definition of Sociology, Society and Socialization.
Role of games and sports in National and International integration.

FIELD PRACTICAL

1. Learn and demonstrate the technique of Suryanamaskar.
2. Development of physical fitness through Callisthenics and Aerobic activities.

REFERENCES

1. Graham, G. (2001) Teaching Children Physical Education: Becoming a Master Teacher. Human Kinetics, Champaign, Illinois, USA.
2. Kamlesh, M.L. & Singh, M.K. (2006) Physical Education (Naveen Publication).
3. Lau, S.K. (1999) Great Indian Players, New Delhi, Sports.
4. Lumpkin, A. (2007) Introduction to Physical Education, Exercise Science and Sports Studies, McGraw Hill, New York, USA.
5. Siedentop, D. (2004) Introduction to Physical Education, Fitness and Sport, McGraw Hill Companies Inc., New York, USA.
6. Shaffer, D.R. (2002) Development Psychology: Childhood and Adolescence. Thomson, Sydney, Australia.
7. Shukla, (2000) Mother on Education, National Council of Teacher Education, New Delhi.
8. Singh, A. et al. (2000) Essential of Physical Education, Kalyani Publishers, Ludhiana, Punjab.
9. Wuest, D.A. & C.A. Bucher (2006) Foundation of Physical Education, Exercise Science, and Sports. McGraw Hill Companies Inc.; New York, USA.
10. Fahey, T.D., M.P. Insel and W.T. Rath (2006) Fit & Well: Core Concepts and Labs in Physical Fitness, McGraw Hill, New York.
11. Kansal, D.K. (2012) A Practical Approach to Test Measurement and Evaluation Sports and Spiritual Science Publication, New Delhi.

SEMESTER- 4

CORE PAPER- 4: Health Education, Physical Fitness and Wellness

Corse Code- CC1D

Total number of classes - 60

Unit- I: Introduction **LH - 18**

Concept, definition and dimension of Health.
Definition, aim, objectives and principles of Health Education.
Health Agencies- World Health Organization (WHO), United Nations Educational Scientific and Cultural Organization (UNESCO).
School Health Program- Health Service, Health Instruction, Health Supervision, Health appraisal and Health Record.

Unit- II: Health Problems in India- Prevention and Control **LH - 18**

Communicable Diseases- Malaria, Dengue and Chicken Pox.
Non-communicable Diseases- Obesity, Diabetes and AIDS.
Nutrition- Nutritional requirements for daily living. Balance Diet. Health disorders due to deficiencies of Vitamins and Minerals.
Postural deformities- Causes and corrective exercise of Kyphosis, Lordosis, Scoliosis, Knock Knees and Flat Foot.

Unit- III: Physical Fitness and Wellness **LH - 12**

Physical Fitness- Meaning, definition and Importance of Physical Fitness.
Components of Physical Fitness- Health and Performance related Physical Fitness.
Concept of Wellness. Relationship between Physical activities and Wellness.
Ageing- Physical activities and its importance.

Unit- IV: Health and First-aid Management **LH - 12**

First aid- Meaning, definition, importance and golden rules of First-aid.
Concept of sports injuries- Sprain, Strain, Facture and Dislocation.
Management of sports injuries through the application of Hydro-therapy and Thermo-therapy.
Management of sports injuries through the application of Exercise and Massage therapy.

LAB PRACTICAL

1. First-aid Practical- Triangular Bandage: Slings (Arm Sling, Collar & Cuff Sling), Roller Bandages: Simple Spiral, Reverse Spiral, Figure of Eight, Spica.
2. Practical knowledge on Hydro-therapy and Thermo-therapy.

REFERENCES

1. Bucher, Charles A. "Administration of Health and Physical Education Programme".
2. Delbert, Oberteuffer, et. al." The School Health Education".
3. Ghosh, B.N. "Treaties of Hygiene and Public Health".
4. Hanlon, John J. "Principles of Public Health Administration" 2003.
5. Turner, C.E. "The School Health and Health Education".
6. Moss et. al. "Health Education" (National Education Association of U.T.A.).
7. Nemir A. 'The School Health Education" (Harber and Brothers, New York).
8. Nutrition Encyclopedia, edited by Delores C.S. James, The Gale Group, Inc.
9. Boyd-Eaton S. et al (1989) The Stone Age Health Programme: Diet and Exercise as Nature Intended. Angus and Robertson.
10. Terras S. (1994) Stress, How Your Diet can Help: The Practical Guide to Positive Health Using Diet, Vitamins, Minerals, Herbs and Amino Acids, Thorons.

SEMESTER- 5

Modern Trends and Practices in Physical Education Exercise Sciences

(For the students other than Physical Education)

Course code: GE1

Total number of classes - 60

Unit- I: Introduction **LH - 12**

Meaning, definition and importance of physical Education and Sports.
Aims, objectives and scope of Physical Education.
Types of sports and their utility in physical education.
Meaning, definition and importance of Physical fitness and Motor fitness. Difference

between physical fitness and motor fitness. Components of Physical fitness.

Unit- II: Biological, Psychological and Sociological Foundations of Physical Education **LH - 18**

Biological Foundation- Meaning and definition of growth and development. Factors affecting growth and development. Differences of growth and development. Principles of growth and development.

Meaning and definition of Psychology. Importance of Psychology in Physical Education. Qualities of good leader in Physical Education. Principles of leadership activities.

Sociological Foundation- Meaning and definition of Sociology. Social values and their Importance. Socialization Through Sports

Role of games and sports in National and International integration.

Unit- III: History of Physical Education **LH - 12**

Historical development of Physical Education and Sports in India- Pre-Independence period and Post-Independence period.

Ancient Olympic Games

Modern Olympic Games.

Asian Games

Unit- IV: Exercise Sciences **LH - 18**

Meaning, definition and importance Exercise and Exercise Physiology.

Effects of short and long term exercise on Muscular systems.

Effects of short and long term exercise on Circulatory System.

Effects of short and long term exercise on Respiratory System.

REFERENCES

1. Kamlesh, M.L. & Singh, M.K. (2006) Physical Education (Naveen Publication).
2. Lumpkin, A. (2007) Introduction to Physical Education, Exercise Science and Sports Studies, McGraw Hill, New York, USA.
3. Siedentop, D. (2004) Introduction to Physical Education, Fitness and Sport, McGraw Hill Companies Inc., New York, USA.
4. Shaffer, D.R. (2002) Development Psychology: Childhood and Adolescence. Thomson, Sydney, Australia.
5. Shukla, (2000) Mother on Education, National Council of Teacher Education, New Delhi.
6. Singh, A. et al. (2000) Essential of Physical Education, Kalyani Publishers, Ludhiana, Punjab.
7. Wuest, D.A. & C.A. Bucher (2006) Foundation of Physical Education, Exercise Science, and Sports. McGraw Hill Companies Inc.; New York, USA.
8. Fahey, T.D., M.P. Insel and W.T. Rath (2006) Fit & Well: Core Concepts and Labs in Physical Fitness, McGraw Hill, New York.
9. Kansal, D.K. (2012) A Practical Approach to Test Measurement and Evaluation Sports and Spiritual Science Publication, New Delhi.
10. Clarke, D.H. (1975). Exercise Physiology. New Jersey: Prentice Hall Inc., Englewood Cliffs.
11. David, L Costill. (2004). Physiology of Sports and Exercise. Human Kinetics..

THE UNIVERSITY OF BURDWAN

SYLLABUS FOR THREE-YEAR B.Sc. HONOURS PROGRAMME IN PHYSICS

UNDER CHOICE BASED CREDIT SYSTEM (CBCS)

(With effect from the session 2017-2018)

Course Structure (Physics-Major)

Details of courses under B.Sc. (Honors)

Course	*Credits	
	Theory+ Practical	Theory + Tutorial
I. Core Course		
(14 Papers)	14X4= 56	14X5=70
Core Course Practical / Tutorial*		
(14 Papers)	14X2=28	14X1=14
II. Elective Course		
(8 Papers)		
A.1. Discipline Specific Elective	4X4=16	4X5=20
(4 Papers)		
A.2. Discipline Specific Elective		
Practical/Tutorial*	4 X 2=8	4X1=4
(4 Papers)		
B.1. Generic Elective/ Interdisciplinary	4X4=16	4X5=20
(4 Papers)		
B.2. Generic Elective		
Practical/ Tutorial*	4 X 2=8	4X1=4
(4 Papers)		
III. Ability Enhancement Courses		
1. **Ability Enhancement Compulsory Course (2 Papers)**		
AECC- 1 : Environmental Studies	4 X 1=4	4 X 1=4
AECC- 2 : Communicative English/MIL	2 X 1=2	2 X 1=2
2. **Skill Enhancement Course** (Skill Based) **(2 Papers of 2 credit each)**	2 X 2=4	2 X 2=4
Total Credit	**142**	**142**

PROPOSED SCHEME FOR CHOICE BASED CREDIT SYSTEM IN

B. Sc. Honours (Physics)

Semester	Core Course	Ability Enhanancement Compulsory Course (AECC)	Skill Enhancement Course (SEC)	Discipline Specific Elective (DSE)	Generic Elective (GE)
I	CC-I : Mathematical Physics-I	AECC- 1 : Environmental Studies			GE- 1
	CC-II : Mechanics				
II	CC-III : Electricity & Magnetism	AECC- 2 : Communicative English/ MIL			GE- 2
	CC-IV : Waves and Optics				
III	CC-V : Mathematical Physics–II		SEC-1		GE- 3
	CC-VI : Thermal Physics				
	CC-VII: Digital Systems and Applications				
IV	CC-VIII : Mathematical Physics–III		SEC-2		GE- 4
	CC-IX : Elements of Modern Physics				
	CC-X : Analog Systems & Applications				
V	CC-XI : Quantum Mechanics and Applications			DSE- 1	
	CC-XII : Solid State Physics			DSE- 2	
VI	CC-XIII :Electro-magnetic Theory			DSE- 3	
	CC-XIV : Statistical Mechanics			DSE- 4	

SEMESTER	COURSE OPTED	COURSE NAME	Credits
I	Ability Enhancement Compulsory Course-1	Environmental Studies	4
	Core course-I	Mathematical Physics-I	4
	Core Course-I Practical	Mathematical Physics-I Lab	2
	Core course-II	Mechanics	4
	Core Course-II Practical	Mechanics Lab	2
	Generic Elective -1	GE-1	4
	Generic Elective -1 Practical		2
II	Ability Enhancement Compulsory Course-2	Communicative English/MIL	2
	Core course-III	Electricity and Magnetism	4
	Core Course-III Practical	Electricity and Magnetism Lab	2
	Core course-IV	Waves and Optics	4
	Core Course-IV Practical	Waves and Optics Lab	2
	Generic Elective -2	GE-2	4
	Generic Elective -2 Practical		2
III	Core course-V	Mathematical Physics-II	4
	Core Course-V Practical	Mathematical Physics-II Lab	2
	Core course-VI	Thermal Physics	4
	Core Course-VI Practical	Thermal Physics Lab	2
	Core course-VII	Digital Systems and Applications	4
	Core Course-VII Practical	Digital Systems & Applications Lab	2
	Skill Enhancement Course -1	SEC-1	2
	Generic Elective -3	GE-3	4
	Generic Elective -3 Practical		2
IV	Core course-VIII	Mathematical Physics III	4
	Course-VIII Practical	Mathematical Physics-III Lab	2
	Core course-IX	Elements of Modern Physics	4
	Course-IX Practical	Elements of Modern Physics Lab	2
	Core course-X	Analog Systems and Applications	4
	Course- X Practical	Analog Systems & Applications Lab	2
	Skill Enhancement Course -2	SEC -2	2
	Generic Elective -4	GE-4	4
	Generic Elective -4 Practical		2
V	Core course-XI	Quantum Mechanics & Applications	4
	Core Course-XI Practical	Quantum Mechanics Lab	2
	Core course-XII	Solid State Physics	4
	Core Course-XII Practical	Solid State Physics Lab	2
	Discipline Specific Elective -1	DSE-1	4/5
	Discipline Specific Elective -1 Practical/Tutorial	DSE-1 Lab	2/1
	Discipline Specific Elective -2	DSE-2	4/5

	Discipline Specific Elective- 2 Practical/Tutorial	**DSE-2 Lab**	**2/1**
VI	**Core course-XIII**	**Electro-magnetic Theory**	**4**
	Core Course-XIII Practical	**Electro-magnetic Theory Lab**	**2**
	Core course-XIV	**Statistical Mechanics**	**4**
	Core Course-XIV Practical	**Statistical Mechanics Lab**	**2**
	Discipline Specific Elective -3	**DSE-3**	**4/5**
	Discipline Specific Elective -3 Practical/Tutorial	**DSE-3 Lab**	**2/1**
	Discipline Specific Elective-4	**DSE-4**	**4/5**
	Discipline Specific Elective -4 Practical/Tutorial	**DSE-4 Lab**	**2/1**
Total Credits			**142**

1 credit = 1 hour/week for theory; 2 hours/week for practical

Core Courses (PHYH) : CC- I to CC - XIV): (Credit: 06 each)

1. Mathematical Physics-I
2. Mechanics
3. Electricity and Magnetism
4. Waves and Optics
5. Mathematical Physics–II
6. Thermal Physics
7. Digital Systems and Applications
8. Mathematical Physics III
9. Elements of Modern Physics
10. Analog Systems and Applications
11. Quantum Mechanics and Applications
12. Solid State Physics
13. Electromagnetic Theory
14. Statistical Mechanics

Discipline Specific Elective Courses : (Credit: 06 each; 4 papers to be selected, 2 papers for Semester-V (PHYH) : (1 to 5) and 2 papers for Semester-VI (PHYH) : (6 to 10):

SEMESTER-V

DSE-1: One paper to be selected from the following	**DSE-2**: One paper to be selected from the following
1 – Advanced Mathematical Physics 2 – Medical Physics.	3 - Nano Materials and Applications. 4 – Communication Systems. 5 – Classical Dynamics.

SEMESTER-VI

DSE-3: One paper to be selected from the following	**DSE-4**: One paper to be selected from the following
6 – Nuclear and Particle Physics 7 – Biophysics .	8 - Astronomy and Astrophysics 9 – Applied Dynamics 10 – Dissertation

Generic Elective Courses : other Disciplines

(Exactly two papers from strictly two disciplines) – GE 1 to GE 4

1. Mathematics
2. Chemistry
3. Electronics
4. Computer Science

Skill Enhancement Courses (2 papers; Credit: 02 each)

Semester-III : SEC-1 : Renewable Energy and Energy harvesting

OR

Weather Forecasting

Semester-IV : SEC-2 : Computational Physics Skills

OR

Electrical circuits and Network Skills

Generic Elective Courses (PHY GE) : For honours candidates of other Departments/Disciplines :

(Credit: 06 each)

GE – 1 : Mechanics
GE – 2 : Electricity and Magnetism
GE – 3 : Thermal Physics and Statistical Mechanics
GE – 4 : Waves and Optics

SKILL ENHANCEMENT COURSES [any one of two papers] *(Credits: 02)*

SEC-1 : RENEWABLE ENERGY AND ENERGY HARVESTING (Credits: 02)

F.M. = 50 (Theory - 40, Internal Assessment – 10)

Internal Assessment [Class Attendance (Theory) – 05, Theory (Class Test/ Assignment/ Tutorial) – 05]

Theory: **30 Lectures**

The aim of this course is not just to impart theoretical knowledge to the students but to provide them with exposure and hands-on learning wherever possible

Fossil fuels and Alternate Sources of energy: Fossil fuels and nuclear energy, their limitation, need of renewable energy, non-conventional energy sources. An overview of developments in Offshore Wind Energy, Tidal Energy, Wave energy systems, Ocean Thermal Energy Conversion, solar energy, biomass, biochemical conversion, biogas generation, geothermal energy tidal energy, Hydroelectricity. (3 Lectures)

Solar energy: Solar energy, its importance, storage of solar energy, solar pond, non convective solar pond, applications of solar pond and solar energy, solar water heater, flat plate collector, solar distillation, solar cooker, solar green houses, solar cell, absorption air conditioning. Need and characteristics of photovoltaic (PV) systems, PV models and equivalent circuits, and sun tracking systems. (6 Lectures)

Wind Energy harvesting: Fundamentals of Wind energy, Wind Turbines and different electrical machines in wind turbines, Power electronic interfaces, and grid interconnection topologies. (3 Lectures)

Ocean Energy: Ocean Energy Potential against Wind and Solar, Wave Characteristics and Statistics,

Wave Energy Devices. (3 Lectures)

Tide characteristics and Statistics, Tide Energy Technologies, Ocean Thermal Energy, Osmotic Power, Ocean Bio-mass. (2 Lectures)

Geothermal Energy: Geothermal Resources, Geothermal Technologies. (2 Lectures)

Hydro Energy: Hydropower resources, hydropower technologies, environmental impact of hydro power sources. (2 Lectures)

Piezoelectric Energy harvesting: Introduction, Physics and characteristics of piezoelectric effect, materials and mathematical description of piezoelectricity, Piezoelectric parameters and modeling piezoelectric generators, Piezoelectric energy harvesting applications, Human power (4 Lectures)

Electromagnetic Energy Harvesting: Linear generators, physics mathematical models, recent applications (2 Lectures)

Carbon captured technologies, cell, batteries, power consumption (2 Lectures)

Environmental issues and Renewable sources of energy, sustainability. (1 Lecture)

Demonstrations and Experiments

1. Demonstration of Training modules on Solar energy, wind energy, etc.
2. Conversion of vibration to voltage using piezoelectric materials
3. Conversion of thermal energy into voltage using thermoelectric modules.

Reference Books:

1. Non-conventional energy sources - G.D Rai - Khanna Publishers, New Delhi
2. Solar energy - M P Agarwal - S Chand and Co. Ltd.
3. Solar energy - Suhas P Sukhative Tata McGraw - Hill Publishing Company Ltd.
4. Godfrey Boyle, “Renewable Energy, Power for a sustainable future”, 2004, Oxford University Press, in association with The Open University.
5. Dr. P Jayakumar, Solar Energy: Resource Assesment Handbook, 2009
6. J.Balfour, M.Shaw and S. Jarosek, Photovoltaics, Lawrence J Goodrich (USA).
7. http://en.wikipedia.org/wiki/Renewable_energy

THE UNIVERSITY OF BURDWAN

SYLLABUS FOR THREE-YEAR DEGREE COURSE

IN

PHYSIOLOGY HONOURS

UNDER

CHOICE BASED CREDIT SYSTEM (CBCS)

(With effect from 2017- 18)

Course components and allotment of credits

Semester	Name of the Course					Total Credits
	Core Course (CC)	Ability Enhancement Compulsory Course (AECC)	Skill Enhancement Course (SEC)	Discipline Specific Elective (DSE)	Generic Elective (GE)	
I	CC-1 CC-2	AECC-1	-	-	GE-1	22
II	CC-3 CC-4	AECC-2	-	-	GE-2	20
III	CC-5 CC-6 CC-7	-	SEC-1	-	GE-3	26
IV	CC-8 CC-9 CC-10	-	SEC-2	-	GE-4	26
V	CC-11 CC-12	-	-	DSE-1 DSE-2	-	24
VI	CC-13 CC-14	-	-	DSE-3 DSE-4	-	24
Total Course Number (Sem-I to Sem-VI)	Total Core Course-14 14×6=84 credits	Total Ability Enhancement Compulsory Course-2 4x1=4 credits 2×1=2 credits	Total Skill Enhancement Course-2 2×2=4 credits	Total Elective: Discipline Specific-4 4×6=24 credits	Total Elective: Generic-4 4×6=24 credits	142 (Total credits)

Note:

*** 14 Core Course (CC) are fixed for Physiology Honours. Students**

*** 4 DSE and 2 SEC to be picked up by the Physiology Honours. Students (choice based) 4 GE under Physiology Honours syllabus to be picked up (choice based) by the other discipline student (other than Physiology Honours. Students).**

Physiology Honours. Students to be picked up 4 GE course from other discipline syllabus

Semester wise Breakup (1st Year)

Semester	Course opted		Title of the course	Credits	Total Credits
I	AECC-I		ENVIRONMENTAL STUDIES	4	22
	CC-I	Theory	CELLULAR BASIS OF PHYSIOLOGY	4	
		Practical	CELLULAR BASIS OF PHYSIOLOGY	2	
	CC-2	Theory	BIOLOGICAL PHYSICS AND ENZYMES	4	
		Practical	BIOLOGICAL PHYSICS AND ENZYMES	2	
	GE-1	I	Any discipline/ subject other than Physiology	6	
II	AECC-II		ENGLISH COMMUNICATIONS / MIL	2	20
	CC-3	Theory	PHYSIOLOGY OF NERVE AND MUSCLE CELLS	4	
		Practical	PHYSIOLOGY OF NERVE AND MUSCLE CELLS	2	
	CC-4	Theory	CHEMISTRY OF BIOMOLECULES	4	
		Practical	CHEMISTRY OF BIOMOLECULES	2	
	GE-2	II	Any discipline/ subject other than Physiology	6	

Semester wise Breakup (2nd Year)

Semester	Course opted		Title of the course	Credits	Total Credits
	CC-5	Theory	CIRCULATING BODY FLUIDS	4	
		Practical	CIRCULATING BODY FLUIDS	2	
	CC-6	Theory	CIRCULATION	4	
		Practical	CIRCULATION	2	
	CC-7	Theory	FUNCTIONS OF THE NERVOUS SYSTEM	4	
		Practical	FUNCTIONS OF THE NERVOUS SYSTEM	2	

III	**SEC-I**	**Theory**	1A- **DETECTION OF FOOD ADDITIVES/ ADULTERANTS** 1B- **HISTOPATHOLOGICAL TECHNIQUES** **(EITHER 1A OR 1B)**	**2**	**26**
	GE-3	**-**	**Any discipline/ subject other than Physiology**	**6**	
IV	**CC-8**	**Theory**	**ENERGY BALANCE, METABOLISM, AND NUTRITION**	**4**	**26**
		Practical	**ENERGY BALANCE, METABOLISM, AND NUTRITION**	**2**	
	CC-9	**Theory**	**GASTROINTESTINAL FUNCTION**	**4**	
		Practical	**GASTROINTESTINAL FUNCTION**	**2**	
	CC-10	**Theory**	**RESPIRATION**	**4**	
		Practical	**RESPIRATION**	**2**	
	SEC-2	**Theory**	**2A- CLINICAL BIOCHEMISTRY** **2B- HEMATOLOGICAL TECHNIQUES** **(EITHER 2A OR 2B)**	**2**	
	GE-4	**-**	**Any discipline/ subject other than Physiology**	**6**	

Semester wise Breakup (3rd Year)

Semester	Course opted		Title of the course	Credits	Total Credits
V	**CC-11**	**Theory**	**SPECIAL SENSES**	**4**	**24**
		Practical	**SPECIAL SENSES**	**2**	
	CC-12	**Theory**	**ENDOCRINOLOGY**	**4**	
		Practical	**ENDOCRINOLOGY**	**2**	
	DSE-1	**Theory**	**1A- BIOLOGICAL STATISTICS** **1B- MICROBIOLOGY AND IMMUNOLOGY** **(EITHER 1A OR 1B)**	**4**	
		Practical	**THEORY CONCERN (EITHER 1A OR 1B)**	**2**	
	DSE-2	**Theory**	**2A- ERGONOMICS AND OCCUPATIONAL PHYSIOLOGY** **2B- SPORTS AND EXERCISE PHYSIOLOGY**	**4**	

			(EITHER 2A OR 2B)		
		Practical	THEORY CONCERN (EITHER 2A OR 2B)	2	
VI	CC-13	Theory	REPRODUCTION	4	24
		Practical	REPRODUCTION	2	
	CC-14	Theory	FORMATION AND EXCRETION OF URINE	4	
		Practical	FORMATION AND EXCRETION OF URINE	2	
	DSE-3	Theory	3A- HUMAN NUTRITION AND DIETETICS 3B- GENETICS AND MOLECULAR BIOLOGY (EITHER 3A OR 3B)	4	
		Practical	THEORY CONCERN (EITHER 3A OR 3B)	2	
	DSE-4	Theory	4A- TOXICOLOGY 4B- NANO-BIOTECHNOLOGY AND BIOINFORMATICS	4	
		Practical	THEORY CONCERN (EITHER 4A OR 4B)	2	

LIST OF CORE COURSES (CC)

CC 1 : CELLULAR BASIS OF PHYSIOLOGY
CC 2 : BIOLOGICAL PHYSICS AND ENZYMES
CC 3 : PHYSIOLOGY OF NERVE AND MUSCLE CELLS
CC 4 : CHEMISTRY OF BIOMOLECULES
CC 5 : CIRCULATING BODY FLUIDS
CC 6 : CIRCULATION
CC 7 : FUNCTIONS OF THE NERVOUS SYSTEM
CC 8 : ENERGY BALANCE, METABOLISM, AND NUTRITION
CC 9 : GASTROINTESTINAL FUNCTION
CC 10 : RESPIRATION
CC 11 : SPECIAL SENSES
CC 12 : ENDOCRINOLOGY
CC 13 : REPRODUCTION
CC-14 : FORMATION AND EXCRETION OF URINE

LIST OF DISCIPLINE SPECIFIC ELECTIVE (DSE) COURSES

DSE 1 : DSE 1A- BIOLOGICAL STATISTICS
DSE 1B- MICROBIOLOGY AND IMMUNOLOGY
DSE 2 : DSE 2A- ERGONOMICS AND OCCUPATIONAL PHYSIOLOGY
DSE 2B- SPORTS AND EXERCISE PHYSIOLOGY

DSE 3 : **DSE 3A- HUMAN NUTRITION AND DIETETICS**
DSE 3B- GENETICS AND MOLECULAR BIOLOGY
DSE 4 : **DSE 4A- TOXICOLOGY**
DSE 4B- NANO-BIOTECHNOLOGY AND BIOINFORMATICS

LIST OF SKILL ENHANCEMENT COURSES (SEC)

SEC 1 : **SEC 1A-DETECTION OF FOOD ADDITIVES/ ADULTERANTS**
SEC 1B- HISTOPATHOLOGICAL TECHNIQUES
SEC 2 : **SEC 2A- CLINICAL BIOCHEMISTRY**
SEC 2B- HEMATOLOGICAL TECHNIQUES

LIST OF GENERIC ELECTIVE (GE) COURSES

Semester	Theory (Credit 4)	Practical (Credit 2)
GE - 1: Cellular Physiology, Biophysics, Biochemistry of Biomolecules	**a) Units of Human System** **b) Biophysical and Biochemical Principles** **c) Biochemistry of Bio Molecules.**	**a) Identification of permanent slides** **b) Fresh tissue experiments**
GE – 2: Digestion and Metabolism	**a) Digestive System** **b) Nutrition** **c) Metabolism**	**Qualitative and Quantitative Biochemical Experiments**
GE – 3: Respiratory and Cardiovascular Physiology	**a) Respiratory Physiology** **b) Cardiovascular Physiology** **c) Blood and Body Fluids**	**a) Haematological experiments I** **b) Haematological experiments II**
GE – 4: Endocrinology, Renal Physiology, Skin and Body Temperature Regulation	**a) Endocrine System** **b) Renal Physiology** **c) Skin and Regulation of Body Temperature**	**Biochemistry**

DSE 2B: SPORTS AND EXERCISE PHYSIOLOGY

[TOTAL CREDITS: 6 (THEORY-4, PRACTICAL-2)]

Theory: **Total Lecture-60**

Concepts in theory

1. Importance of regular exercise in health and wellbeing.
2. Basic concept of Bioenergetics, Energy sources during exercise (Phosphagen, Anaerobic system and Aerobic system).

3. Cardio-respiratory responses during different grades of exercise.
4. Concept of excess post exercise oxygen consumption (EPOC), physiological fatigue and recovery.
5. Aerobic work Capacity: Measurement, physiological factors and applications

6. Training: Principles of physical training, Training to improve aerobic and anaerobic power. Effect of overtraining and detraining.
7. Nutritional supplements and ergogenic aids.
8. Sports injury and its' management.
9. Basic idea sports rehabilitation and sports medicine.

1. Measurement of blood pressure before and after different grades of exercise.

2. Recording of recovery heart-rate after standard exercise.

3. Determination of Physical Fitness Index by Harvard Step Test (Modified).

4. Determination of VO2max by Queen College step test.

5. Measurement of body fat percentage.

6. Six minute walk test.

7. Determination of endurance time by hand grip dynamometer.

8. Pneumographic recording of effect of talking, laughing, coughing, breath holding and hyperventilation

Suggested readings

1. ExercisePhysiology–Energy,NutritionandHumanPerformancebyW.D. McArdle,
2. F.KatchandV.L.Katch.Lippincott,WilliamsandWilkins.
3. EssentialsofExercisePhysiology byL.G.Shaver,SurjeetPublications.
4. TextbookofWorkPhysiologybyP.O.AstrandandK.Rodahl.McGraw- HillBookCo.
5. SportsPhysiologybyE.L.Fox, Saunders CollegePublishing.Holt-Saunders.

THE UNIVERSITY OF BURDWAN

Curriculum and syllabus for 3- yr. B.Sc. General

in

Plant Protection

Under Choice Based Credit System (CBCS)

(*w.e.f.* Academic Year 2017-2018)

DETAILS OF COURSES

Core Courses:- Plant Protection

1A. Pests and Vectors:

1B. Pest Management:

1C. Bionomics, plant diseases and their Management:

1D. Plant's Defence Mechanism:

Discipline specific Electives (Plant protection):

DSE-1A

1. Integrated Pest Management.

or

2. Seed Pathology and Seed treatment.

DSE-1B

1. Biotechnology in plant Protection.

or

2. Dissertation.

Ability Enhancement compulsory course:

1. Environmental studies.

2. communicative English/ MIL.

Skill Enhancement courses (Plant Protection):

SEC-1

1. Green Pesticides.

or

2. Vermiculture

SEC-2

1. Formulation and application of pesticides and their precautions

or

2. Pest survey and surveillance

SEC-3

1. Biolgical Control

or

2. Remote sensing techniques in plant protection

SEC-4

1. Pesticide applications equipments

or

2. Plant growth promoting microorganisms (PGPM)

Scheme for Choice Based Credit System in B.Sc. with Plant Protection:

Semester	Core Course (12)	Ability Enhancement compulsory course (AECC) (2)	Skill enhancement course (SEC) (2)	Discipline specific elective DSE (6)
SEM-I	Discipline 1 (Plant Protection) CC 1A: Pests and Vectors Discipline 2 (other) CC 2A: Discipline 3 (other) CC 3A:	Environmental Studies (ENVS)		
SEM-II	Discipline 1 (Plant Protection) CC 1B: Pests management Discipline 2 (other) CC 2B: Discipline 3 (other) CC 3B:	Communicative English /MIL		
SEM-III	Discipline 1 (Plant Protection) CC 1C: Bionomics, Plant Diseases and their Management Discipline 2 (other) CC 2C : Discipline 3 (other) CC 3C:		SEC-1	
SEM-IV	Discipline 1 (Plant Protection) CC 1D: Plant's defence Mechanism Discipline 2 (other) CC 2D: Discipline 3 (other) CC 3D:		SEC-2	
SEM-V			SEC-3	DSE- 1A: (Plant Protection) : Integrated Pest Management/ Seed Pathology and Seed Treatment DSE – 2A (other) DSE – 3A (other)
SEM-VI			SEC-4	DSE – 1B : (Plant Protection) : Biotechnology in Plant Protection/ Dissertation DSE - 2B (other) DSE- 3B (other)

CREDIT DISTRIBUTION:

SEMESTER	COURSE OPTED	COURSE NAME	CREDIT
SEM-I CREDIT 22	AECC-I	ENVS	4
	Discipline 1 : (Plant Protection) (CC-1A Th)	Pests and vectors-Theory	4
	Discipline 1 : (Plant Protection) CC-1A (PR)	Pests and vectors-Practical	2
	Discipline -2 (OTHER) CC-2A (TH)	TH	4
	Discipline 2 : (OTHER) CC-2A PR	PR	2
	Discipline -3 : (OTHER) CC-3A TH	TH	4
	Discipline -3 : (OTHER) CC-3A PR	PR	2
	AECC-II	Communicative English/MIL	2
SEM-II CREDIT 20	Discipline 1 : (Plant Protection) CC-1B (TH)	Pest management- Theory	4
	Discipline 1: (Plant Protection) CC-1B (PR)	Pest management – Practical	2
	Discipline -2 : (OTHER) CC-2B (TH)	TH	4
	Discipline 2 : (OTHER) CC-2B PR	PR	2
	Discipline -3 : (OTHER) CC-3B TH	TH	4
	Discipline -3 : (OTHER) CC-3B PR	PR	2
SEM-III CREDIT 20	Discipline 1 : (Plant Protection) CC-1C (TH)	Bionomics, Plant diseases and their Management -Theory	4
	Discipline 1: (Plant Protection) CC-1C (PR)	Bionomics, Plant diseases and their Management- Practical	2
	Discipline -2 : (OTHER) CC-2C (TH)	TH	4
	Discipline 2 : (OTHER) CC-2C PR	PR	2
	Discipline -3 : (OTHER) CC-3C TH	TH	4
	Discipline -3 : (OTHER) CC-3C PR	PR	2
	Skill Enhancement Course-I	SEC-1	2

SEM-IV CREDIT 20	Discipline 1 : (Plant Protection) CC-1D (TH) Discipline 1 : (Plant Protection) CC-1D (PR)	Plants' Defence Mechanisms-Theory Plants' Defence Mechanisms-PRACT	4 2
	Discipline -2 : (OTHER) CC-2D (TH) Discipline 2 : (OTHER) CC-2D PR	TH PR	4 2
	Discipline -3 : (OTHER) CC-3D TH Discipline -3 : (OTHER) CC-3D PR	TH PR	4 2
	Skill Enhancement Course-2	SEC-2	2
SEM-V	Skill Enhancement Course-3	SEC-3	2
CREDIT 20	Discipline specific Elective (DSE) PLANT PROTECTION THEORY Discipline specific Elective (DSE) PLANT PROTECTION PRACTICAL	DSE - 1A Plant Protection Theory DSE- 1A Plant Protection Practical	4 2
	Discipline specific Elective (DSE) OTHER Discipline specific Elective (DSE) OTHER	DSE (2A) OTHER Theory DSE (2A) OTHER Practical	4 2
	Discipline specific Elective (DSE) OTHER Discipline specific Elective (DSE) OTHER	DSE (3A) OTHER Theory DSE (3A) OTHER Practical	4 2
SEM-VI	Skill Enhancement Course-4	SEC-4	2
CREDIT 20	Discipline Specific Elective (DSE) PLANT PROTECTION THEORY Discipline specific Elective (DSE) PLANT PROTECTION PRACTICAL	DSE (1B) Plant Protection Theory DSE (1B) Plant Protection Practical	4 2
	Discipline specific Elective (DSE) OTHER Discipline specific Elective (DSE) OTHER	DSE (2B) OTHER Theory DSE (2B) OTHER Practical	4 2
	Discipline specific Elective (DSE) OTHER Discipline specific Elective DSE(3)-OTHER	DSE (3B) OTHER Theory DSE (3B) OTHER Practical	4 2
TOTAL			**122**

Semester II

Core course (CC- 1B) : Pest Management

Credits: 6 (Theory- 4 ,Practical -2) Lectures:60

THEORY

Unit 1. Forecasting : Definition and need. **(2 lectures)**

Unit 2. Forecasting and monitoring of some insects. **(5 lectures)**

Unit3. Major signs and damage due to animal pests. **(3 lectures)**

Unit4. Forecasting of plant disease **(2 lectures)**

Importance of disease Forecasting service. **(2 lectures)**

Methods of Forecasting. **(6 lectures)**

Unit5. Methods of Managements

Legislation **(3 lectures)**
Eradication **(2 lectures)**
Physical control **(2lectures)**
Cultural control **(3 lectures)**
Biological control **(5 lectures)**
Chemical control **(5 lectures)**
Genetic resistance **(5 lectures)**

Unit6. Integrated Pest Management (IPM)

Definition; genesis; phases **(5 lectures)**

Appropriate IPM, methods with examples from Rice and other field cropswith special reference rice, wheat, potato, mustard, sugarcane and pulse. **(10 lectures)**

PRACTICAL

1. Study of Symptoms of attack by type pests and disease of plants.
2. Identification of common Insects, fungi other pests and diseases of major crops.
3. Preservation, permanent slides preparation, labelled specimens and field records to be submitted during final examinations.
4. Study tour and field trips for collection of specimens and surveillance.

(1) Green Pesticides (Theory) Credits -2 Lectures : 30

Unit 1: Definitions of green pesticides/Botanical Pesticide **(6 Lectures)**

Unit 2: Preparation of pesticides from Neem, Chrysanthemum, Tobacco. Advantage of use of botanical pesticides or Green pesticides / Insecticide from plant origin. **(12 Lectures)**

Unit 3: Green Pesticide: Method of utilization, mode of action **(4 Lectures)**

Unit 4: Green pesticides *vis-à-vis* chemical pesticides **(8 Lectures)**

Suggested Reading:

1. Atwal, A.S. (1986) Agricultural Pests of India and South- East Asia. Kalyani Publishers, Ludhiana.
2. Chatterjee,P.B.(1997). Plant Protection Technique . Bharati Bhawan (Publishers &Distributors)
3. Anonymous (1967) Pesticides in Indian Agriculture. National Council ofapplied Economic Research New Delhi.
4. Huffakar, C.B (1980). New Technology Of Pest Control. John Wiley and Sons , Toronto.
5. Sill, W.H (Jr.) (1985). Plant Protection: An Integrated Indisciplinary Approach (Indian ed.) Kalyani Publishers, Ludhiana.

(1) Remote Sensing Technique in Plant Protection Credits -2 **Lectures : 30**

Unit 1: Basic Principle of Geographical Information Science (GIS) and Remote Sensing (RS) *vis a vis* Plant Protection. **(7 lectures)**

Unit 2: Application of GIS and RS in forestry and agriculture. **(7 lectures)**

Unit 3: Methods of collection data using mobile phones and GPS/GNSS in forestry context. **(8 lectures)**

Unit 4: Some case studies and Remote Sensing Institutes/Forest Research Institutes in India and their activities. **(8 lectures)**

Suggested Reading:

1. Prithvish Nag: Digital Remote Sensing
2. Prithvish Nag: Indias Geospatial Infrastructure
3. Thomas Lillesand: Remote Sensing and Image Interpretation
4. R H Robinson: Elements of Cartography

The University of Burdwan

Syllabus for B.A.(Hons.)

in

Political Science

Under Semester with

Choice Based Credit System

w.e.f. 2017-2018 onward

Structure of B.A. Honours in Political Science under Semester with CBCS

Semester	Course Title	Course Type	Credit	Full Marks
Sem-I	CC -1 : WESTERN POLITICAL THOUGHT	Core Course	6	75
	CC- 2 : POLITICAL THEORY	Core Course	6	75
	GE - 1 (Any discipline other than Pol. Sc.)	Generic Elective	6	75
	ENVS	AECC-1	4	100
Sem-II	CC - 3 : INDIAN POLITICAL THOUGHT	Core Course	6	75
	CC - 4 : INDIAN GOVERNMENT AND POLITICS	Core Course	6	75
	GE - 2 (Any discipline other than Pol. Sc.)	Generic Elective	6	75
	Communicative English/MIL	AECC-2	2	50
Sem-III	CC -5 : COMPARATIVE GOVERNMENT AND POLITICS	Core Course	6	75
	CC - 6 : PUBLIC ADMINISTRATION- Basic Theories	Core Course	6	75
	CC -7 : LOCAL GOVERNMENT IN INDIA	Core Course	6	75
	GE - 3 (Any discipline other than Pol. Sc.)	Generic Elective	6	75
	Skill Enhancement Course	SEC-1	2	50
Sem-IV	CC - 8 : INTERNATIONAL RELATIONS	Core Course	6	75
	CC -9 : SOCIOLOGY AND POLITICS	Core Course	6	75
	CC- 10 INTERNATIONAL ORGANIZATIONS	Core Course	6	75
	GE - 4 (Any discipline other than Pol. Sc.)	Generic Elective	6	75
	Skill Enhancement Course	SEC-2	2	50
Sem-V	CC-11 : SOCIAL MOVEMENTS IN INDIA	Core Course	6	75
	CC-12 : ELEMENTARY RESEARCH METHODS IN POLITICAL SCIENCE	Core Course	6	75
	Discipline Specific Elective	DSE-1	6	75
	Discipline Specific Elective	DSE-2	6	75
Sem-VI	CC-13 : INDIAN FOREIGN POLICY	Core Course	6	75
	CC-14 :CONTEMPORARY ISSUES IN INDIA	Core Course	6	75
	Discipline Specific Course	DSE-3	6	75
	Discipline Specific Course	DSE-4	6	75

CORE COURSE (CC) : 6 CREDITS EACH

CC-1 : WESTERN POLITICAL THOUGHT

CC-2 : POLITICAL THEORY

CC-3 : INDIAN POLITICAL THOUGHT

CC-4 : INDIAN GOVERNMENT AND POLITICS

CC -5 : COMPARATIVE GOVERNMENT AND POLITICS

CC -6 : PUBLIC ADMINISTRATION – BASIC THEORIES

CC-7 : LOCAL GOVERNMENT IN INDIA

CC-8 : INTERNATIONAL RELATIONS

CC-9 : SOCIOLOGY AND POLITICS

CC-10 : INTERNATIONAL ORGANIZATIONS

CC-11 : SOCIAL MOVEMENTS IN INDIA

CC-12 : ELEMENTARY RESEARCH METHODS IN POLITICAL SCIENCE

CC-13 : INDIAN FOREIGN POLICY

CC-14 : CONTEMPORARY ISSUES IN INDIA

GE-3: INDIAN POLITICAL THOUGHT

GE-4: INDIAN GOVERNMENT AND POLITICS

DCC-9 : SOCIOLOGY AND POLITICS 6 Credits Total Classes : 60

1. Political Sociology and Sociology of Politics: Nature and Scope

2. Political Culture: Meaning, Components and Types; Political Socialization: Meaning, Role and Agencies

3. Political Participation: Meaning and Components

4. Concepts of Power and Authority; Types of Authority

5. Feminism: Meaning, Significance and Different Schools

6. Environment and Politics; Environment Movements: An Overview; Eco-Feminism

7. Religion and Politics; Concept of Secularism

8. State and Civil Society: Media, Society and Politics

References:

1. T. Bottomore, Political Sociology (New Delhi, B. I. Pub.)

2. A. K. Mukhopadhyay, Political Sociology (K. P. Bagchi, Kolkata).

3. Michael Rush and Phillip Althoff, An Introduction to Political Sociology. (London,

Thompson Nelson and Sons)

4. A. Giddens, Sociology (Polity Press, Cambridge)

5. B. Axford and R. Huggins, New Media and Politics. (London, Sage)

6. J. Connolly and G. Smith, Politics and Environment: From Theory to Practice. (London, Routledge) 8

7. Dipankar Gupta, Political Sociology in India (Orient Longman, Delhi)

8. Dipankar Gupta, The Context of Ethnicity (Delhi, C. U. P.)

9. S. Kaviraj and S. Khilnani (ed) , Civil Society : History and Possibilities (Cambridge, CUP)

10. Robin Jeffrey, Media and Modernity: Women, Communications and the State in India (Ranikhet, Permanent Black)

11. Mary Evans, Introducing Contemporary Feminist Thought, (Cambridge, CUP)

12. Harris Barbara, White, Globalization and Insecurity, (Palgrave, New York) Paper -VII

THE UNIVERSITY OF BURDWAN

Burdwan-713104, West Bengal

SYLLABUS FOR B.A. HONOURS
IN
SANSKRIT
UNDER SEMESTER WITH CBCS
(Effective from 2017- 18)

Semester -I

Course Code	Course Title	Course Type	L.T. P	Credit	Marks
CC-1	**Classical Sanskrit Literature(Poetry)**	Core Course-1	5-1-0	6	75
	Section-A (20 classes) (I)Raghuvaṁśa: Canto-XIV (Verses: 31-68)				
	Section-B (40 classes) (I) Kirātārjunīya - Canto I (1-25 Verses) (II) The History of Sanskrit Literature. (Aśvaghoṣa,Kālidāsa,Bhāravi,Māgha,Bhaṭṭi,Śrīharṣa)				
CC-2	**Critical Survey of Sanskrit Literature**	Core Course-2	5-1-0	6	75
	Section-A (30 classes) (I)Vaidika Sāhitya (II)Rāmāyaṇa (III)Mahābhārata				
	Section-B (30 classes) (I) Purāṇa (II) The History of Sanskrit Grammar. (III) The History of Indian Philosophy.				
GE-1	**Interdisciplinary(Any Discipline other than Sanskrit) (60 classes)**	Generic Elective Course	5-1-0	6	75
AECC-1	ENVS	AECC	4-0-0	4	100

		Total		**22**	**325**

Semester -II

Course Code	Course Title	Course Type	L.T.P	Credit	Marks
CC -3	**Classical Sanskrit Literature(Prose)**	**Core Course**	**5-1-0**	**6**	**75**
	Section-A (15 classes) **Śukanāsopadeśa-** Kādambarī (As in Sanskrit Pāṭhamālā, B.U. (evaṁ samatikrāmatsu ----- bhrātara ucchedyāḥ)				
	Section-B (15 classes) **Daśakumāracarita-(Rājavāhanacarita)---** As in Sanskrit Pāṭhamālā ,BU				
	Section-C (30 classes) (I)**The History of Sanskrit Literature (Prose).** (Subandhu,Daṇḍin,Bāṇabhaṭṭa) (II) **The History of Sanskrit Literature (Fables)** (Pañcatantra,Hitopadeśa,Vetālapañcaviṁśati,Siṁhāsanadvātriṁśikā, Puruṣaparīkṣā)				
CC-4	**Self Management in the Gītā**	**Core Course**	**5-1-0**	**6**	**75**
	Section-A (35 classses) **Śrīmadbhagavadgītā** (Adhyāya-4th)(Whole)				
	Section-B (25 classes) **Selected ślokas from the Gītā** 1.Meditation -Adhyāya-VI (10-26) II. Diet Control-Adhyāya-XVII (8-10) III. Rajoguṇa- Adhyāya III (36-40)				
GE -2	**Interdisciplinary (Any Discipline other than Sanskrit) (60 classes)**	**Generic Elective Course**	**5-1-0**	**6**	**75**
AECC-2	**Communicative English/MIL**		**2-0-0**	**2**	**50**
		Total		**20**	**275**

Semester -III

Course Code	Course Title	Course Type	L.T.P	Credit	MarkS
CC -5	**Classical Sanskrit Literature (Drāmā)**	**Core Course**	**5-1-0**	**6**	**75**
	Section-A (40 classes) (I)Abhijñānaśakuntala (I-V)				
	Section-B (20 classes) (I)The History of Sanskrit Literature (Drāmā) (Bhāsa, Kālidāsa, Śūdraka, Viśākhadatta, Śrīharṣa,				

	Bhavabhūti, Bhaṭṭanārāyaṇa)				
CC-6	**Poetics and Literary Criticism**	**Core Course**	**5-1-0**	**6**	**75**
	Section-A (35 classes) **(I) Vāmana's kāvyālaṁkārasūtravṛtti –** First Adhikaraṇa-- (Chapters –I, II & III) **(II) Metrics** – A General Concept of Sanskrit Metres and the definitions of the following Meters --- (Indravajrā Upendravajrā,Upajāti, Vaṁśasthavila,Vasantatilaka, Mālinī & Mandākrāntā)				
	Section-B (25 classes) **(I) Sāhityadarpaṇa –Chapter-X** (Śleṣa, Upamā, Rūpaka, Utprekṣā, Atiśayokti, Dṛṣṭānta, Nidarśanā & Arthāntaranyāsa)				
CC-7	**Indian Social Institution and Polity**	**Core Course**	**5-1-0**	**6**	**75**
	Section-A (35 classes) **Manusaṃhitā** –Chapter-VII State Politics-(1-15), Upāyacatuṣṭaya-(106-110) &Sāḍguṇya –(161-170)				
	Section-B. Arthaśāstra- (Dūtapraṇidhi) **(25 classes)**				
GE-3	**Interdisciplinary (Any Discipline other than Sanskrit) (60 classes)**	**Generic Elective Course**	**5-1-0**	**6**	**75**
SEC-1	**Basic Sanskrit**				
	Section-A (10 classes) Brāhmī Script Writing	**AEC (Skill Based)**	**2-0-0**	**2**	**50**
	Section-B (7 classes) Declensions (a-kārānta,i-kārānta, u-kārānta and ṛ-kārānta - Masculine,Feminine &Neuter, Pronouns & Number)				
	Section-C (7 classes) **Conjugations** – (Bhū, Paṭh,Gam, Dṛś,Sev,Labh,Pac,Vṛt, Kṛ,Dā, Śru, Jñā - laṭ, loṭ laṅ,liṅ & lṛṭ)				

	Section-D (6 classes) Translation				

	OR				
	Technique of Sanskrit Language (60 classes)				
	I.Amarakoṣa- Liṅgādisaṁgrahavarga II. Dhātupāṭha (Bhvādi-1-30)	**Total**		**24**	**300**

Semester - VI

Course Code	Course Title	Course Type	L.T.P	Credit	Mark
CC -13	**Indian Ontology and Epistemology**	**Core Course**	**5-1-0**	**6**	**75**
	(A)**Tarkasaṁgraha** – (saptapadārtha, karaṇa, pratyakṣa and sannikarṣa) **(30 classes)**				
	(B)**Vedāntasāra** - (Excluding the last portion beginning with Mahāvākyārtha). **(30 classes)**				
CC-14	**Sanskrit Composition and Communication**	**Core Course**	**5-1-0**	**6**	**75**
	(A) Case-endings and Cases-(From First Case-ending and Nominative case to Fifth case ending and Ablative case as in Siddhāntakaumudī **(40 classes)**				
	(B)**Translation and Comprehension**. (**10 classes**)				
	(C) **Reporting (10 classes)**				
DSE-3	**Fundamentals of Āyurveda** (A)Concept of Aṣṭānga Āyurveda. (**30 classes**) (B)Taittirīyopaniṣad –Bhṛguballī- (1-3) **(30 classes)** OR **Environmental Awareness in Sanskrit** **I.Manusaṁhitā**- -2/54,57, 3/163.	**Discipline Specific Elective**	**5-1-0**	**6**	**75**
	4/56,60,62,66,76,83,138,139. 6/46. 8/285.				
	9/281,289. 11/64-66,145. **(30 classes)**				
	II.Varāhapurāṇa- 172/35,36,37**. (10 classes)**				
DSE-4	**III.Brahmanāradīyapurāṇa**-13/52.**(10 classes)** **IV.Yājñavalkyasaṃhitā**—2/230-232. **(10 classes)** **Art of Balanced Living** **(A)Yogasūtra** –I (1,2 &12-16) **(30 classes)** **Yogasūtra** –II (29,30,32,46,49 &50) **(B)Śrīmadbhagavadgītā – Chapter –III** (5-8,10-16,20&21) **(30 classes)** OR **Indian system of Logic (60 classes)**	**Discipline Specific Elective**	**5-1-0**	**6**	**75**
	Anumānakhaṇḍa & Upamānakhada of Tarkasaṁgraha	**l**		**24**	**300**