



OFFICE OF THE PRINCIPAL  
**P. R. Thakur Government College**

P.O.-Thakurnagar, P.S.-Gaighata, North 24 Pgs., Pin-743287

Ph. No. : 913215-244442

Email: office@prtgc.ac.in

Estd. 2013

Website: www.prtgc.ac.in

Memo. No.-

Date:


## **Criterion 1 - Curricular Aspects**

### **1.3 Curriculum Enrichment**

#### **1.3.1 Institution integrates crosscutting issues relevant to Professional Ethics, Gender, Human Values, Environment and Sustainability in transacting**

#### **DOCUMENTS**

- 1. A Glimpse of Value Added Course**
- 2. Career Counselling Program**
- 3. Sample photographs of works of NSS college unit**
- 4. Sample photographs of works of NSS College unit specially for Human Values (relief work)**
- 5. Syllabus of Professional Ethics of Philosophy Department**
- 6. Gender related syllabus of different Departments in Course Curriculum**
- 7. A Glimpse of Environment related syllabus of different Departments in Course Curriculum**
- 8. Sample photographs of Human Values related syllabus of different Departments in Course Curriculum**

  
Swapan Sarkar  
Officer-in-Charge  
P.R. Thakur Govt. College  
P.O.-Thakurnagar, 24Pgs.(N)  
Pin-743287



OFFICE OF THE PRINCIPAL  
**P. R. Thakur Government College**

P.O.-Thakurnagar, P.S.-Gaighata, North 24 Pgs., Pin-743287

Ph. No. : 913215-244442

Email: office@prtgc.ac.in

Estd. 2013

Website: www.prtgc.ac.in

Memo. No.-

Date:



OFFICE OF THE PRINCIPAL  
P.R.THAKUR GOVT. COLLEGE  
P.O.-Thakurnagar, P.S.-Gaighata, North 24 – Parganas  
Pin-743287  
[E-mail-office@prtgc.ac.in](mailto:office@prtgc.ac.in)



Ph. No.- 913215-244442

Department of Philosophy

Notice: PRTGC-22/136/1

Date: 02/12/2022

This is to notify that the Department of Philosophy in collaboration with IQAC is going to conduct one Value Added Course on *Spirituality and Well-Being*, from 22th to 30<sup>th</sup> December, 2022 at Seminar Hall, from 11 A.M. to 4 P.M. Interested students have to register for the aforesaid course. They are requested to contact the Head, Department of Philosophy, within 10<sup>th</sup> December 2022.

Officer-in-Charge  
P. R. Thakur Govt. College  
*Officer-in-Charge*  
P.R. Thakur Govt. College  
Thakurnagar

Head  
Department of Philosophy  
P. R. Thakur Govt. College

2/12/22

Swapan Sarkar  
Officer-in-Charge  
P.R. Thakur Govt. College  
P.O.-Thakurnagar, 24Pgs.(N)  
Pin-743287



OFFICE OF THE PRINCIPAL  
**P. R. Thakur Government College**

P.O.-Thakurnagar, P.S.-Gaighata, North 24 Pgs., Pin-743287

Ph. No. : 913215-244442

Email: office@prtgc.ac.in

Estd. 2013

Website: www.prtgc.ac.in

Memo. No.-

Date:

**P. R. THAKHUR GOVERNMENT COLLEGE**

**ADD-ON COURSE**


**ON**

***SPIRITUALITY AND WELL-BEING***

**ORGANIZED BY**

**DEPARTMENT OF PHILOSOPHY**

**P. R. THAKHUR GOVERNMENT COLLEGE**

  
Swapan Sarkar  
Officer-in-Charge  
P.R. Thakur Govt. College  
P.O.-Thakurnagar, 24Pgs.(N)  
Pin-743287



OFFICE OF THE PRINCIPAL  
**P. R. Thakur Government College**

P.O.-Thakurnagar, P.S.-Gaighata, North 24 Pgs., Pin-743287

Ph. No. : 913215-244442

Email: office@prtgc.ac.in

Estd. 2013


Website: www.prtgc.ac.in

Memo. No.-

Date:

**Details**  
**Instructional Hours:30 hours**  
**Total:30 Lectures**  
**Course at a Glance**

Module	Module Title	Lectures (Total:30)
Module_ I	Introductory lectures	4
Module_ II	Spirituality: Western and Indian thought	4
Module_ III	Empathy: A Simple Methodology	4
Module_ IV	Spirituality for Excellence in Life	4
Module_ V	Spirituality and Value	4
Module_ VI	Challenges: Decoding Spirituality	4
Module_ VII	Understanding and Pursuing Spirituality	4
Module_ VIII	Spiritual Therapy	2

  
Swapan Sarkar  
Officer-in-Charge  
P.R. Thakur Govt. College  
P.O.-Thakurnagar, 24Pgs.(N)  
Pin-743287



OFFICE OF THE PRINCIPAL  
**P. R. Thakur Government College**

P.O.-Thakurnagar, P.S.-Gaighata, North 24 Pgs., Pin-743287

Ph. No. : 913215-244442

Email: office@prtgc.ac.in

Estd. 2013

Website: www.prtgc.ac.in

Memo. No.-

Date:

Notice

A meeting of the Department will be held on 24/05/2023 with from 2pm with the IQAC. Coordinator in the chamber of officer in charge.



Agenda :


1. Discussion on the Value-Added Course proposed to be held between 05/06/2023 - 10/06/2023
2. Miscellaneous

Minutes/Resolutions:

1. The course will be held from 05/06/2023 to 10/06/2023, duration will be 32 hours.
2. The college will provide certificates to those students after successful completion of the course.
3. Notice about the course will be circulated among the students.
4. The course module and procedure of assessment will be submitted to the IQAC by 31/05/2023

Signature.

1.  24/5/23
2.  24/5/23
3. Deepika Sengupta Dargupta

  
Swapan Sarkar  
Officer-in-Charge  
P.R. Thakur Govt. College  
P.O.-Thakurnagar, 24Pgs.(N)  
Pin-743287



# OFFICE OF THE PRINCIPAL P. R. Thakur Government College

P.O.-Thakurnagar, P.S.-Gaighata, North 24 Pgs., Pin-743287

Ph. No. : 913215-244442

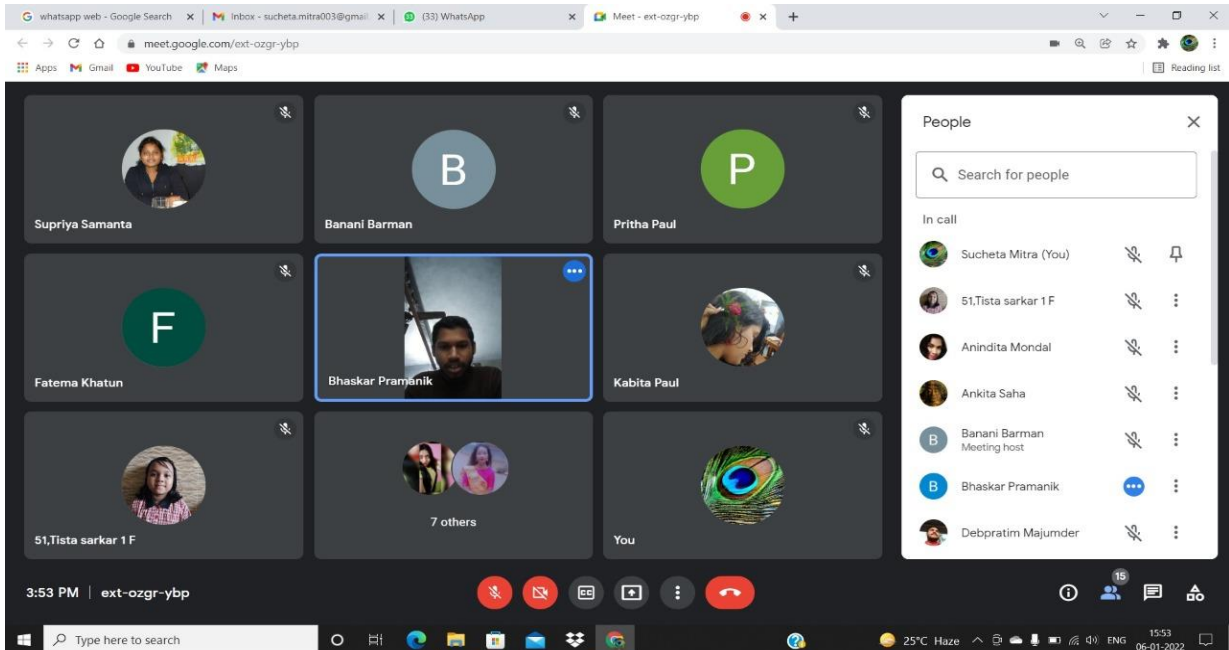
Email: office@prtgc.ac.in

Estd. 2013


Website: www.prtgc.ac.in

Memo. No.-

Date:



**VALUE ADDED COURSE**

  
Swapan Sarkar  
Officer-in-Charge  
P.R. Thakur Govt. College  
P.O.-Thakurnagar, 24Pgs.(N)  
Pin-743287



# OFFICE OF THE PRINCIPAL P. R. Thakur Government College

P.O.-Thakurnagar, P.S.-Gaighata, North 24 Pgs., Pin-743287

Ph. No. : 913215-244442

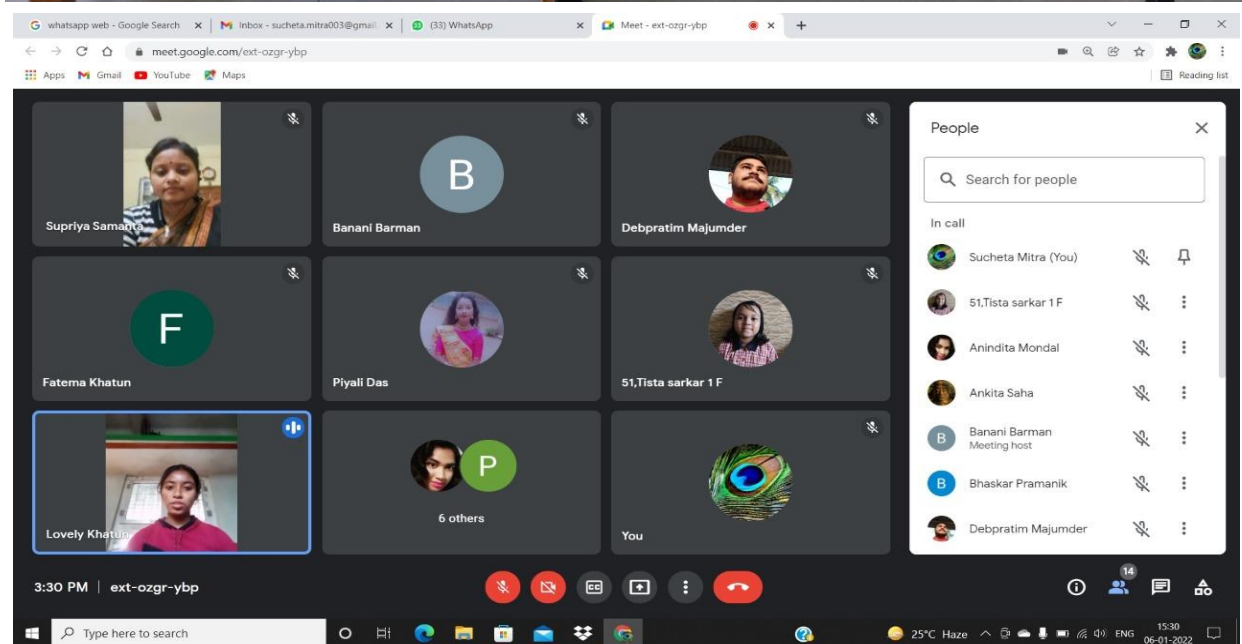
Email: office@prtgc.ac.in

Estd. 2013

Website: www.prtgc.ac.in

Memo. No.-

Date:



**VALUE ADDED COURSE**

*Suapan Sarkar*  
Suapan Sarkar  
Officer-in-Charge  
P.R. Thakur Govt. College  
P.O.-Thakurnagar, 24Pgs.(N)  
Pin-743287



OFFICE OF THE PRINCIPAL  
**P. R. Thakur Government College**

P.O.-Thakurnagar, P.S.-Gaighata, North 24 Pgs., Pin-743287

Ph. No. : 913215-244442

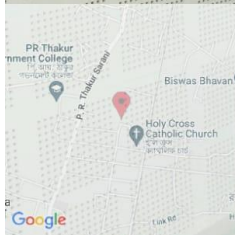
Email: office@prtgc.ac.in

Estd. 2013

Website: www.prtgc.ac.in

Memo. No.-

Date:



WQQH+6M3, Chikanpara, West Bengal 743287, India

Chikanpara  
West Bengal  
India



29°C

84°F

2022-11-09(Wed) 02:02(pm)



WQQH+6M3, Chikanpara, West Bengal 743287, India

Chikanpara  
West Bengal  
India



29°C

84°F

2022-11-09(Wed) 02:02(pm)

**CAREER COUNCELLING**

Swapan Sarkar  
Officer-in-Charge  
P.R. Thakur Govt. College  
P.O.-Thakurnagar, 24Pgs.(N)  
Pin-743287





# OFFICE OF THE PRINCIPAL P. R. Thakur Government College

P.O.-Thakurnagar, P.S.-Gaighata, North 24 Pgs., Pin-743287

Ph. No. : 913215-244442

Email: office@prtgc.ac.in

Estd. 2013

Website: www.prtgc.ac.in

Memo. No.-

Date:




WQMG+M96, Chikanpara, West Bengal 743287, India  
 Chikanpara  
 West Bengal  
 India  
 29°C  
 84°F  
 2022-11-09(Wed) 02:00(pm)



WQQH+6M3, Chikanpara, West Bengal 743287, India  
 Chikanpara  
 West Bengal  
 India  
 29°C  
 84°F  
 2022-11-09(Wed) 02:00(pm)

## CAREER COUNCELLING

  
 Swapan Sarkar  
 Officer-in-Charge  
 P.R. Thakur Govt. College  
 P.O.-Thakurnagar, 24Pgs.(N)  
 Pin-743287



OFFICE OF THE PRINCIPAL  
**P. R. Thakur Government College**

P.O.-Thakurnagar, P.S.-Gaighata, North 24 Pgs., Pin-743287

Ph. No. : 913215-244442

Email: office@prtgc.ac.in

Estd. 2013

Website: www.prtgc.ac.in

Memo. No.-


Date:

**Campus Cleaning Program**



**Awareness Program on Vector – borne Diseases & Water – borne Diseases**



  
Swapan Sarkar  
Officer-in-Charge  
P.R. Thakur Govt. College  
P.O.-Thakurnagar, 24Pgs.(N)  
Pin-743287



OFFICE OF THE PRINCIPAL  
**P. R. Thakur Government College**

P.O.-Thakurnagar, P.S.-Gaighata, North 24 Pgs., Pin-743287

Ph. No. : 913215-244442

Email: office@prtgc.ac.in

Estd. 2013

Website: www.prtgc.ac.in

Memo. No.-

Date:



**Awareness Program on Habits of Cleanliness inside Hospital Premise**

*Suapan Sarkar*  
Suapan Sarkar  
Officer-in-Charge  
P.R. Thakur Govt. College  
P.O.-Thakurnagar, 24Pgs.(N)  
Pin-743287

**WEST BENGAL STATE UNIVERSITY**  
**DRAFT SYLLABUS IN CHEMISTRY (HONOURS)**  
**UNDER**  
**CHOICE BASED CREDIT SYSTEM**

**CORE COURSE (HONOURS) IN CHEMISTRY**

**SEMESTER-III**

**CEMACOR07T: ORGANIC CHEMISTRY-III**

Elementary ideas of Green Chemistry: Twelve (12) principles of green chemistry; planning of green synthesis; common organic reactions and their counterparts: reactions: 22

Aldol, Friedel-Crafts, Michael, Knoevenagel, Cannizzaro, benzoin condensation and Dieckmann condensation.

Nucleophilic addition to  $\alpha,\beta$ -unsaturated carbonyl system: general principle and mechanism (with evidence); direct and conjugate addition, addition of enolates (Michael reaction), Stetter reaction, Robinson annulation.

Substitution at  $sp^2$  carbon (C=O system): mechanism (with evidence): BAC2, AAC2, AAC1, AAL1 (in connection to acid and ester); acid derivatives: amides, anhydrides & acyl halides (formation and hydrolysis including comparison).

**DISCIPLINE SPECIFIC ELECTIVE COURSE (HONOURS) IN CHEMISTRY**

**SEMESTER-V**

**CEMADSE02T: ANALYTICAL METHODS IN CHEMISTRY**

**Separation techniques:**

Solvent extraction: Classification, principle and efficiency of the technique.

Mechanism of extraction: extraction by solvation and chelation.

Technique of extraction: batch, continuous and counter current extractions.

Qualitative and quantitative aspects of solvent extraction: extraction of metal ions from aqueous solution, extraction of organic species from the aqueous and nonaqueous media.

Chromatography: Classification, principle and efficiency of the technique.

Mechanism of separation: adsorption, partition & ion exchange.

Development of chromatograms: frontal, elution and displacement methods.

Qualitative and quantitative aspects of chromatographic methods of analysis: IC, GLC, GPC, TLC and HPLC

**SEMESTER-VI**

**CEMADSE04T: GREEN CHEMISTRY**

**Introduction to Green Chemistry:**

What is Green Chemistry? Need for Green Chemistry. Goals of Green Chemistry. Limitations/ Obstacles in the pursuit of the goals of Green Chemistry

**Principles of Green Chemistry and Designing a Chemical synthesis:**

Twelve principles of Green Chemistry with their explanations and examples and special emphasis on the following:

- Designing a Green Synthesis using these principles; Prevention of Waste/ byproducts; 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. Prevention/ minimization of hazardous/ toxic products reducing toxicity.  $\text{risk} = (\text{function}) \text{hazard} \times \text{exposure}$ ; waste or pollution prevention hierarchy.
- Green solvents– supercritical fluids, water as a solvent for organic reactions, ionic liquids, fluorinated biphasic solvent, PEG, solventless processes, immobilized solvents and how to compare greenness of solvents.
- Energy requirements for reactions – alternative sources of energy: use of microwaves and ultrasonic energy.
- Selection of starting materials; avoidance of unnecessary derivatization – careful use of blocking/protecting groups.
- Use of catalytic reagents (wherever possible) in preference to stoichiometric reagents; catalysis and green chemistry, comparison of heterogeneous and homogeneous catalysis, biocatalysis, asymmetric catalysis and photocatalysis.
- Prevention of chemical accidents designing greener processes, inherent safer design, principle of ISD “What you don’t have cannot harm you”, greener alternative to Bhopal Gas Tragedy (safer route to carbonyl) and Flixborough accident (safer route to cyclohexanol) subdivision of ISD, minimization, simplification, substitution, moderation and limitation.
- Strengthening/ development of 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 the following compounds: adipic acid, catechol, disodium iminodiacetate (alternative to Strecker synthesis)
- Microwave assisted reactions in water: Hofmann Elimination, methyl benzoate to benzoic acid, oxidation of toluene and alcohols; microwave assisted reactions in organic solvents Diels-Alder reaction and Decarboxylation reaction
- Ultrasound assisted reactions: sonochemical Simmons-Smith Reaction (Ultrasonic alternative to Iodine)
- Surfactants for carbon dioxide – replacing smog producing and ozone depleting solvents with CO<sub>2</sub> for precision cleaning and dry cleaning of garments.
- Designing of Environmentally safe marine antifoulant.
- 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
- Development of Fully Recyclable Carpet: Cradle to Cradle Carpeting

#### **Future Trends in Green Chemistry:**

Oxidation reagents and catalysts; Biomimetic, multifunctional reagents; Combinatorial green chemistry; Proliferation of solventless reactions; co crystal controlled solid state synthesis (C2S3); Green chemistry in sustainable development.

#### **CEMADSE04P: GREEN CHEMISTRY LAB**

##### **1. Safer starting materials**

- Preparation and characterization of nanoparticles of gold using tea leaves.

## 2. Using renewable resources

- Preparation of biodiesel from vegetable/ waste cooking oil.

## 3. Avoiding waste

Principle of atom economy

- Use of molecular model kit to stimulate the reaction to investigate how the atom economy can illustrate Green Chemistry.

- Preparation of propene by two methods can be studied

Triethylamine ion + OH<sup>-</sup> → propene + trimethylpropene + water

H<sub>2</sub>SO<sub>4</sub>/Δ

1-propano → propene + water

- Other types of reactions, like addition, elimination, substitution and rearrangement should also be studied for the calculation of atom economy.

## 4. Use of enzymes as catalysts

- Benzoin condensation using Thiamine Hydrochloride as a catalyst instead of cyanide.

## 5. Alternative Green solvents

- Extraction of D-limonene from orange peel using liquid CO<sub>2</sub> prepared from dry ice.

Mechanochemical solvent free synthesis of azomethines

## 6. Alternative sources of energy

- Solvent free, microwave assisted one pot synthesis of phthalocyanine complex of copper (II).
- Photoreduction of benzophenone to benzopinacol in the presence of sunlight.

# SKILL ENHANCEMENT COURSE (HONOURS) IN CHEMISTRY

## SEMESTER-III

### CEMSSEC001– BASIC ANALYTICAL CHEMISTRY

#### Introduction

Introduction to Analytical Chemistry and its interdisciplinary nature. Concept of sampling. Importance of accuracy, precision and sources of error in analytical measurements. Presentation of experimental data and results, from the point of view of significant figures.

#### Analysis of soil

Composition of soil, Concept of pH and pH measurement, Complexometric titrations, Chelation, Chelating agents, use of indicators

1. Determination of pH of soil samples.

2. Estimation of Calcium and Magnesium ions as Calcium carbonate by complexometric titration.

#### Analysis of water

Definition of pure water, sources responsible for contaminating water, water sampling methods, water purification methods.

1. Determination of pH, acidity and alkalinity of a water sample.

2. Determination of dissolved oxygen (DO) of a water sample.

#### Analysis of food products

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

1. Identification of adulterants in some common food items like coffee powder, asafoetida, chilli powder, turmeric powder, coriander powder and pulses, etc.

2. Analysis of preservatives and colouring matter.

# **GENERIC ELECTIVE COURSE (HONOURS) IN CHEMISTRY**

## **SEMESTER-IV**

### **CEMHGEC04T: SOLUTIONS, PHASE EQUILIBRIA, CONDUCTANCE, ELECTROCHEMISTRY & ANALYTICAL AND ENVIRONMENTAL CHEMISTRY-I**

#### **Section B: Analytical and Environmental Chemistry**

##### **Environmental Chemistry**

*The Atmosphere:* composition and structure of the atmosphere; troposphere, stratosphere, mesosphere and thermosphere; ozone layer and its role; major air pollutants: CO, SO<sub>2</sub>, NO<sub>x</sub> 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.

*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.

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

Page 1 of 2  
SUGGESTED 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.

CC12: EARLY 20<sup>TH</sup> CENTURY BRITISH LITERATURE: 6 CREDIT

Background Readings:

Modernism, Post-modernism and non-European Cultures

The Women's Movement in the Early 20th Century

Psychoanalysis and the Stream of Consciousness

The Uses of Myth

The Avant Garde

Group A. Poetry

W.B. Yeats 'Lake Isle of Innisfree', 'Sailing to Byzantium'

T.S. Eliot 'The Love Song of J. Alfred Prufrock', Preludes,

Owen- Spring Offensive

Rupert Brooke- Peace



GE 3: GENDER & HUMAN RIGHTS:6 CREDITS

Group A.

Unit I: History of International Human Rights Movements & Gender Movements, Conventions and Agencies/

Group B

Unit II: Human Rights Violation and their Redressal

Unit III: Literature and Human Rights.

Selected text -Mulk Raj Anand, *Untouchable*.

Group C

Unit IV: Gender Rights Violation and their Redressal

Unit V: Gender and Literature.

Selected texts-

Mahasweta Devi-- 'Draupadi'

Pattern of Questions:

Group A. Internal of 20 marks.; 05 on attendance

Group B. One long question out of two each from theoretical portion of 10 marks

One short note of 5 out of two from theory.

One long question of 10 from novel with internal choice.

Group C. One long question out of two each from theoretical portion of 10 marks

One short note of 5 out of two from theory.

One long question of 10 from novel with internal choice.

SUGGESTED READINGS:

1. Andrew Clapham, *A Very Short Introduction* (Oxford, 2016).
2. Sujata Sen (Ed), *Gender Studies* (Pearson, 2012).

### SUGGESTED 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 *The Norton Anthology of English Literature*, 8th edn, vol. 2, ed. Stephen Greenblatt (New York: Norton, 2006) chap. 1, pp. 1061–9.
-

CC 11: WOMEN'S WRITING: 6 CREDITS

Background study:

The Confessional Mode in Women's Writing

Sexual Politics

Race, Caste and Gender

Social Reform and Women's Rights

Group A: Poetry

Emily Dickinson- 'I cannot live with you'

Sylvia Plath - 'Daddy', 'Lady Lazarus'

Eunice De Souza 'Advice to Women', 'Bequest'

Group B. Fiction

Jean Rhys—*The Wide Sargasso Sea*

Charlotte Perkins Gilman- 'The Yellow Wallpaper'

Katherine Mansfield - 'Bliss'

Group C: Non-fiction

1. Mary Wollstonecraft *A Vindication of the Rights of Woman* (New York: Norton, 1980) chap. 1, pp. 11–19; chap. 2, pp. 19–38.
2. Ramabai Ranade 'A Testimony of our Inexhaustible Treasures', in Pandita Ramabai *Through Her Own Words: Selected Works*, tr. Meera Kosambi (New Delhi: OUP, 2000) pp. 295–324.
3. Rassundari Debi, excerpts from *Amar Jiban* in Susie Tharu & K. Lalita eds. *Women Writing in India. Vol 1.*



लक्ष्य विश्वमानम्

**Draft CBCS  
Syllabus for  
Undergraduate Courses in  
Geography**

---

TO BE EFFECTIVE FROM THE ACADEMIC SESSION 2018-19

**West Bengal State University**  
March, 2018

## GEOACOR10T—Environmental Geography ✦

4 Credits, 50 Marks [60 classes]

### Concepts

1. Geographers' approach to environmental studies
2. Concept of holistic environment and systems approach
3. Ecosystem: Concept, structure and functions
4. Space–time hierarchy of Environmental problems: Local, regional and global

### Environmental problems and policies

5. Environmental pollution and degradation: Land, water and air
6. Urban environmental issues with special reference to waste management
7. Environmental policies – National Environmental Policy, 2006, Earth Summits (Stockholm, Rio, Johannesburg)
8. Global initiatives for environmental management (special reference to Montreal Protocol, Kyoto Protocol, Paris Climate Summit)

### Reading List

- Basu, R. and Bhaduri, S. (Eds) 2007. Contemporary Issues and Techniques in Geography, Progressive Publishers.
- Chandna, R.C. 2002. Environmental Geography, Kalyani Press.
- Chapman, J.L., Reiz, M.J. 1993. Ecology: Principle and Applications, Cambridge University Press.
- Cunningham, W.P., Cunningham, M.A. 2004. Principals of Environmental Science: Inquiry and Applications, Tata Macgraw Hill.
- Gilpin, A., 1994. Environmental Impact Assessment: Cutting Edge for the 21st Century, Cambridge University Press.
- Goudie, A. 2001. 2013. The Human Impact on the Natural Environment: Past, Present, and Future, 7th ed, Wiley-Blackwell.
- Miller, G.T. 2004. Environmental Science: Working with the Earth, Thomson Brooks.
- Odum, E.P., Barrett, G.W. 2005. Fundamentals of Ecology, Ceneage Learning.
- Raven, P.H., Hassenzahl, D.M., Hager, M.C., Gift, N.Y., Berg, L.R. 2015. Environment, 9th ed, Wiley.
- Sharma, P.D. 2011. Ecology and Environment, Rastogi Publications.
- Singh, S. 2013. Environmental Geography, PrayagPustakBhawan.
- Withgott, J.H., Laposata, M. 2017. Environment: The Science behind the Stories, 6th ed, Pearson.

## **GEOACOR10P—Environmental Geography** ⇨

**2 Credits, 25 Marks [60 classes]**

1. Preparation of questionnaire for perception survey on environmental problems
2. Preparation of check-list for Environmental Impact Assessment of an urban / industrial project
3. Interpretation of air quality using CPCB / WBPCB data

### **Reading List**

Gilpin, A., 1994. Environmental Impact Assessment: Cutting Edge for the 21st Century, Cambridge University Press.

#### **WEBSITES:**

BBC – Science & Environment: [www.bbc.com/news/science\\_and\\_environment](http://www.bbc.com/news/science_and_environment)

Central Pollution Control Board: [www.cpcb.nic.in](http://www.cpcb.nic.in)

Centre for Science and Environment: [www.cseindia.org](http://www.cseindia.org)

Ministry of Environment, Forest and Climate Change: [www.envfor.nic.in](http://www.envfor.nic.in)

The Energy and Resources Institute: [www.teriin.org](http://www.teriin.org)

The World Bank – Environment: [www.worldbank.org/en/topic/environment](http://www.worldbank.org/en/topic/environment)

United Nations Environment Programme: [www.unenvironment.org](http://www.unenvironment.org)

West Bengal Pollution Control Board: [www.wbpcb.gov.in](http://www.wbpcb.gov.in)

## GEOADSE05T – Social Geography ✦

6 Credits, 75 Marks [90 classes]

### Unit I: Society, Identity and Crisis

1. Social Geography: Concept, Origin, Nature and Scope
2. Concept of Space, Social differentiation and stratification; social processes
3. Social Categories: Caste, Class, Religion, Race and Gender and their Spatial distribution
4. Basis of Social region formation; Evolution of social-cultural regions of India
5. Peopling Process of India: Technology and Occupational Change; Migration.
6. Social groups, social behaviour and contemporary social environmental issues with special reference to India

### Unit II: Social Wellbeing and Planning

7. Concept of Social Well-being, Quality of Life, Gender and Social Well-being
8. Measures of Social Well-being: Healthcare, Education, Housing, Gender Disparity
9. Social Geographies of Inclusion and Exclusion, Slums, Gated Communities, Communal Conflicts and Crime.
10. Social Planning during the Five Year Plans in India
11. Social Policies in India: Education and Health
12. Social Impact Assessment (SIA): Concept and importance

### Reading List

- Ahmed A., 1999. Social Geography, Rawat Publications.
- Casino, V. J. D., Jr., 2009. Social Geography: A Critical Introduction, Wiley Blackwell.
- Cater, J. and Jones T., 2000: Social Geography: An Introduction to Contemporary Issues, Hodder Arnold.
- Gregory, D., Johnston, R., Pratt, G., Watts., Whatmore, S. (Eds) 2009. The Dictionary of Human Geography, 5th ed, Wiley.
- Holt, L., 2011. Geographies of Children, Youth and Families: An International Perspective, Taylor & Francis.
- Majumdar, P.K. 2013. India's Demography: Changing Demographic Scenario in India, Rawat Publications.
- Mukherji, S. 2013. Migration in India: Links to Urbanization, Regional Disparities and Development Policies, Rawat Publications
- Panelli, R., 2004. Social Geographies: From Difference to Action, Sage.
- Rachel, P., Burke, M., Fuller, D., Gough, J., Macfarlane, R. and Mowl, G. 2001. Introducing Social Geographies, Oxford University Press.
- Smith, D. M., 1994. Geography and Social Justice, Blackwell, Oxford.
- Smith, S.J., Pain, R., Marston, S. A., Jones, J. P., 2009. The SAGE Handbook of Social Geographies, Sage Publications.
- Valentine, G. 2014. Social Geographies: Space and Society, Routledge.

## **GEOHGEC04T – Environmental Geography** ✨

6 Credits, 75 Marks [90 classes]

### Concepts

1. Environmental Geography: Concepts and Approaches;
2. Human-Environment Relationship in equatorial, desert, mountain and coastal regions
3. Concept of holistic environment and system approach
4. Ecosystem: Concept, structure and functions

### Environmental problems and policies

5. Environmental Problems and Management: Air Pollution; Water pollution; Biodiversity Loss; Solid and Liquid Waste.
6. Environmental problems and management: Desertification and soil erosion
7. Environmental Programmes and Policies: Developed Countries; Developing Countries.
8. New Environmental Policy of India.

### Reading List

- Casper J.K. (2010) *Changing Ecosystems: Effects of Global Warming*. Infobase Pub. New York.
- Hudson, T. (2011) *Living with Earth: An Introduction to Environmental Geology*, PHI Learning Private Limited, New Delhi.
- Miller, G.T. (2007) *Living in the Environment: Principles, Connections, and Solutions*, Brooks/ Cole Cengage Learning, Belmont.
- Singh, R.B. (1993) *Environmental Geography*, Heritage Publishers, New Delhi.
- UNEP (2007) *Global Environment Outlook: GEO4: Environment For Development*, United Nations Environment Programme. University Press, Cambridge.
- Wright R. T. and Boorse, D. F. (2010) *Toward a Sustainable Future*, PHI Learning Pvt Ltd, New Delhi.
- 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



**WEST BENGAL STATE UNIVERSITY**

**CBCS DRAFT SYLLABUS**

**FOR**

**THREE-YEAR MICROBIOLOGY HONOURS**

**DEGREE COURSE OF STUDIES**

## Structure of B. Sc. Honours Microbiology under CBCS

### **Core Course**

MCBACOR01T/P: Introduction to Microbiology and Microbial Diversity  
MCBACOR02T/P: Bacteriology  
MCBACOR03T/P: Biochemistry  
MCBACOR04T/P: Environmental Microbiology  
MCBACOR05T/P: Microbial Physiology and Metabolism  
MCBACOR06T/P: Cell Biology  
MCBACOR07T/P: Molecular Biology  
MCBACOR08T/P: Microbial Genetics  
MCBACOR09T/P: Virology  
MCBACOR10T/P: Food and Dairy Microbiology  
MCBACOR11T/P: Industrial Microbiology  
MCBACOR12T/P: Immunology  
MCBACOR13T/P: Medical Microbiology  
MCBACOR14T/P: Recombinant DNA Technology

### **Discipline Specific Elective (Any Four)(out of 3 any 2 to be taken in each semester)**

MCBADSE01T/P: Advances in Microbiology – Semester V  
MCBADSE02T/P: Biomathematics and Biostatistics - Semester V  
MCBADSE03T/P: Inheritance Biology - Semester V  
MCBADSE04T/P: Microbes in Sustainable Agriculture and Development- Semester VI  
MCBADSE05T/P: Biosafety and Intellectual Property Rights – Semester VI  
MCBADSE06T/P: Instrumentation and Biotechniques – Semester VI

### **Skill Enhancement Elective Courses**

MCBSSEC01M: Food fermentation techniques  
MCBSSEC02M: Microbiological Analysis of Air and Water

### **[Generic Electives: ONLY FOR THE STUDENTS PURSUING HONOURS COURSE OTHER THAN MICROBIOLOGY]**

MCBHGEC01T/P: Bacteriology and Virology  
MCBHGEC02T/P: Industrial and Food Microbiology  
MCBHGEC03T/P: Microbial genetics and molecular biology  
MCBHGEC04T/P: Medical Microbiology and Immunology

### Microbiology (Hons.) Semester I

Course Code	Course Title	Credit	Marks	
			Internal Assessment	End Sem Examination
MCBACOR01T	Introduction to Microbiology and Microbial Diversity (Theory)	4	10	40
MCBACOR01P	Introduction to Microbiology and Microbial Diversity (Practical)	2	15	10
MCBACOR02T	Bacteriology (Theory)	4	10	40
MCBACOR02P	Bacteriology (Practical)	2	15	10
<b>Total in semester I</b>		<b>12</b>	<b>150</b>	

Besides this, a student has to complete **one Generic Elective course (6 credits/ 75 marks)** from the Departments other than Microbiology and **one Ability enhancement Compulsory Course (2 credit/25 marks)**

- **Therefore, a student covers a total of 20 credits (12+6+2) in Semester I**

### Microbiology (Hons.) Semester II

Course Code	Course Title	Credit	Marks	
			Internal Assessment	End Sem Examination
MCBACOR03T	Biochemistry (Theory)	4	10	40
MCBACOR03P	Biochemistry (Practical)	2	15	10
MCBACOR04T	Environmental Microbiology (Theory)	4	10	40
MCBACOR04P	Environmental Microbiology (Practical)	2	15	10
<b>Total in semester II</b>		<b>12</b>	<b>150</b>	

Besides this, a student has to complete **one Generic Elective course (6 credits/75 marks)** from the Departments other than Microbiology and **one Ability enhancement Compulsory Course (2 credit/25 marks)**

- Therefore, a student covers a total of 20 credits (12+6+2) in Semester II

### Microbiology (Hons.) Semester III

Course Code	Course Title	Credit	Marks	
			Internal Assessment	End Sem Examination
MCBACOR05T	Microbial Physiology and Metabolism (Theory)	4	10	40
MCBACOR05P	Microbial Physiology and Metabolism (Practical)	2	15	10
MCBACOR06T	Cell Biology (Theory)	4	10	40
MCBACOR06P	Cell Biology (Practical)	2	15	10
MCBACOR07T	Molecular Biology (Theory)	4	10	40
MCBACOR07P	Molecular Biology (Practical)	2	15	10
MCBSSEC01M	Food fermentation techniques	2	05	20
<b>Total in semester III</b>		<b>20</b>	<b>250</b>	

Besides this, a student has to complete **one Generic Elective course (6 credits/75 marks)** from the Departments other than Microbiology.

- Therefore, a student covers a total of 26 credits (20+6) in Semester III

### Microbiology (Hons.) Semester IV

Course Code	Course Title	Credit	Marks	
			Internal Assessment	End Sem Examination
MCBACOR08T	Microbial Genetics (Theory)	4	10	40
MCBACOR08P	Microbial Genetics (Practical)	2	15	10
MCBACOR09T	Virology (Theory)	4	10	40
MCBACOR09P	Virology (Practical)	2	15	10
MCBACOR10T	Food and Dairy Microbiology (Theory)	4	10	40
MCBACOR10P	Food and Dairy Microbiology (Practical)	2	15	10

MCBSSEC02M	Microbiological Analysis of Air and Water	2	05	20
<b>Total in semester IV</b>		<b>20</b>	<b>250</b>	
<p>Besides this, a student has to complete <b>one Generic Elective course (6 credits/75 marks)</b> from the Departments other than Microbiology.</p> <p><b>Therefore, a student covers a total of 26 credits (20+6) in Semester IV</b></p>				

**Microbiology (Hons.) Semester V**

Course Code	Course Title	Credit	Marks	
			Internal Assessment	Examination
MCBACOR11T	Industrial Microbiology (Theory)	4	10	40
MCBACOR11P	Industrial Microbiology (Practical)	2	15	10
MCBACOR12T	Immunology (Theory)	4	10	40
MCBACOR12P	Immunology (Practical)	2	15	10
MCBADSE01T/ MCBADSE02T/ MCBADSE03T	Advances in Microbiology / Biomathematics and Biostatistics / Inheritance Biology <b>(ANY TWO)</b>	2x4	10x2	40x2
MCBADSE01P/ MCBADSE02P/ MCBADSE03P	Advances in Microbiology / Biomathematics and Biostatistics / Inheritance Biology (Practical) <b>(ANY TWO)</b>	2x2	15x2	10x2
<b>Total in semester V</b>		<b>24</b>	<b>300</b>	

**Microbiology (Hons.) Semester VI**

Course Code	Course Title	Credit	Marks	
			Internal Assessment	Examination
MCBACOR13T	Medical Microbiology (Theory)	4	10	40
MCBACOR13P	Medical Microbiology (Practical)	2	15	10
MCBACOR14T	Recombinant DNA Technology (Theory)	4	10	40
MCBACOR14P	Recombinant DNA Technology (Practical)	2	15	10
MCBADSE04T/ MCBADSE05T/ MCBADSE06T	Microbes in sustainable Agriculture and Development/ Biosafety and Intellectual Property Rights/ Instrumentation and Biotechniques (Theory)  <b>(ANY TWO)</b>	2x4	10x2	40x2
MCBADSE04P/ MCBADSE05P/ MCBADSE06P	Microbes in sustainable Agriculture and Development/ Biosafety and Intellectual Property Rights/ Instrumentation and Biotechniques (Practical)  <b>(ANY TWO)</b>	2x2	15x2	10x2
<b>Total in semester VI</b>		<b>24</b>	<b>300</b>	

**TOTAL CREDIT = 140**

**TOTAL MARKS = 1750**

## B.Sc (HONOURS) MICROBIOLOGY (CBCS STRUCTURE)

### MCBACOR01T: INTRODUCTION TO MICROBIOLOGY AND MICROBIAL DIVERSITY (THEORY) SEMESTER –I

TOTAL HOURS: 60

CREDITS: 4

#### **Unit 1 History of Development and scope of Microbiology** **No. of Hours: 8**

Development of Microbiology as a discipline, spontaneous generation vs. biogenesis. Contributions of Anton von Leeuwenhoek, Louis Pasteur, Robert Koch, Joseph Lister, Alexander Fleming Role of microorganisms in fermentation, Germ theory of disease, Development of various microbiological techniques and golden era of microbiology, Development of the field of soil microbiology: Contributions of Martinus W. Beijerinck, Sergei N. Winogradsky, Selman A. Waksman  
Establishment of fields of medical microbiology and immunology through the work of Paul Ehrlich, Elie Metchnikoff, Edward Jenner

#### **Unit 2 Microscopy: Basic principles & application** **No. of Hours: 10**

Bright Field Microscope, Dark Field Microscope, Phase Contrast Microscope, Fluorescence Microscope, Confocal microscopy, Scanning and Transmission Electron Microscope

#### **Unit 3 Diversity of Microbial World** **No. of Hours: 42:**

##### **A. Systems of classification**

Binomial Nomenclature, Whittaker's five kingdom and Carl Woese's three kingdom classification systems and their utility. Difference between prokaryotic and eukaryotic microorganisms

Aim and principles of classification, systematics and taxonomy, concept of species, taxa, strain; conventional, molecular and recent approaches to polyphasic bacterial taxonomy, evolutionary chronometers, rRNA oligonucleotide sequencing, signature sequences, and protein sequences. Differences between eubacteria and archaebacteria

**B. General characteristics** of different groups: **Acellular** microorganisms (Viruses, Viroids, Prions) and **Cellular** microorganisms (Bacteria, Algae, Fungi and Protozoa) with emphasis on distribution and occurrence, morphology, mode of reproduction and economic importance.

##### **• Algae**

History of phycology with emphasis on contributions of Indian scientists; General characteristics of algae including occurrence, thallus organization, algae cell ultra structure, pigments, flagella, eyespot food reserves and vegetative, asexual and sexual reproduction. Different types of life cycles in algae with suitable examples: Haplobiontic, Haplontic, Diplontic, Diplobiontic and Diplohaplontic life cycles. **Applications of algae in agriculture, industry, environment and food**

##### **• Fungi**

Historical developments in the field of Mycology including significant contributions of eminent mycologists. General characteristics of fungi including habitat, distribution, nutritional requirements, fungal cell ultra- structure, thallus organization and aggregation, fungal wall structure and synthesis, asexual reproduction, sexual reproduction, heterokaryosis, heterothallism and parasexual mechanism.

Economic importance of fungi with examples in agriculture, environment, Industry, medicine, food, biodeterioration and mycotoxins.

• **Protozoa**

General characteristics with special reference to *Amoeba*, *Paramecium*, *Plasmodium*, *Leishmania* and *Giardia*

**MCBACOR01P: INTRODUCTION TO MICROBIOLOGY AND MICROBIAL DIVERSITY (PRACTICALS) SEMESTER –I**

**TOTAL HOURS: 60**

**CREDITS: 2**

1. Microbiology Good Laboratory Practices and safety measures.
2. To study the principle and applications of important instruments (Laminar Air Flow, autoclave, incubator, BOD incubator, hot air oven, light microscope, pH meter) used in the microbiology laboratory.
3. Preparation of Czapekdox Agar slant/plate for fungal cultivation.
4. Sterilization of medium using Autoclave and assessment for sterility
5. Inoculation of fungi (*Penicillium*, *Aspergillus*) in Czapekdox medium
6. Staining of fungi (*Rhizopus*, *Penicillium*, *Aspergillus*) using Lactophenol-Cotton blue

**SUGGESTED READING**

1. Tortora GJ, Funke BR and Case CL. (2008). Microbiology: An Introduction. 9th edition. Pearson Education
2. Madigan MT, Martinko JM, Dunlap PV and Clark DP. (2014). Brock Biology of Microorganisms. 14th edition. Pearson International Edition
3. Cappucino J and Sherman N. (2010). Microbiology: A Laboratory Manual. 9th edition. Pearson Education Limited
4. Wiley JM, Sherwood LM and Woolverton CJ. (2013) Prescott's Microbiology. 9th Edition. McGraw Hill International.
5. Atlas RM. (1997). Principles of Microbiology. 2nd edition. W.M.T.Brown Publishers.
6. Pelczar MJ, Chan ECS and Krieg NR. (1993). Microbiology. 5th edition. McGraw Hill Book Company.
7. Stanier RY, Ingraham JL, Wheelis ML, and Painter PR. (2005). General Microbiology. 5th edition. McMillan.

**MCBACOR02T: BACTERIOLOGY (THEORY) SEMESTER –I**

**TOTAL HOURS: 60**

**CREDITS: 4**

**Unit 1 Cell organization**

**No. of Hours: 18**

Cell size, shape and arrangement, glycocalyx, capsule, flagella, endoflagella, fimbriae and pili. Cell-wall: Composition and detailed structure of Gram-positive and Gram-negative cell walls, Archaeobacterial cell wall, Gram and acid fast staining mechanisms, lipopolysaccharide (LPS), sphaeroplasts, protoplasts, and L-forms. Effect of antibiotics and enzymes on the cell wall. Cell Membrane: Structure, function and chemical composition of bacterial and archaeal cell membranes. Cytoplasm: Ribosomes, mesosomes, inclusion bodies, nucleoid, and plasmids(definition and types), Endospore: Structure, formation, stages of sporulation.

**Unit 2 Bacteriological techniques**

**No. of Hours: 6**



Pure culture isolation: Streaking, serial dilution and plating methods; cultivation, maintenance and preservation/stocking of pure cultures; cultivation of anaerobic bacteria, non-culturable bacteria. Culture media: components of media, natural and synthetic media, chemically defined media, complex media, selective, differential, indicator, enriched and enrichment media

### **Unit 3 Staining methods**

**No. of Hours: 6**

Stain and dye, acidic and basic dyes, mordant, Simple staining, Gram staining, Negative staining, Acid fast staining, Basic mechanism of Gram staining, endospore and capsule staining, Basic mechanism of Lactophenol-cotton blue staining

### **Unit 4 Microbial Growth and Effect of Environment on Microbial Growth**

**No. of Hours: 18**

Definitions of growth, Asexual methods of reproduction, logarithmic representation of bacterial populations, phases of growth, calculation of generation time and specific growth rate measurement of microbial growth, Batch culture, Continuous culture, generation time and specific growth rate, synchronous growth, diauxic growth curve Microbial growth in response to environment -Temperature, pH, solute and water activity, Oxygen, high pressure. Microbial growth in response to nutrition and energy – Autotroph/Phototroph, heterotrophy, Chemolithoautotroph, Chemolithoheterotroph, Chemoheterotroph, Chemolithotroph, photolithoautotroph, Photoorganoheterotroph.

*Physical methods of microbial control:* heat, low temperature, high pressure, filtration, desiccation, osmotic pressure, radiation

*Chemical methods of microbial control:* Acid, alkali, alcohol, detergent, phenol & phenolics, heavy metals: types and mode of action, disinfectants and antiseptics; basic concept of antibiotics.

### **Unit 5 Important archaeal and eubacterial groups**

**No. of Hours: 12**

**Archaeobacteria:** General characteristics, phylogenetic overview, genera belonging to Nanoarchaeota (*Nanoarchaeum*), Crenarchaeota (*Sulfolobus*, *Thermoproteus*) and Euryarchaeota [Methanogens (*Methanobacterium*, *Methanocaldococcus*), thermophiles (*Thermococcus*, *Pyrococcus*, *Thermoplasma*), and Halophiles (*Halobacterium*, *Halococcus*)]

#### **Eubacteria:**

##### ***Gram Negative:***

Non proteobacteria: General characteristics with suitable examples

Alpha proteobacteria: General characteristics with suitable examples

Beta proteobacteria: General characteristics with suitable examples

Gamma proteobacteria: General characteristics with suitable examples

Delta proteobacteria: General characteristics with suitable examples

Epsilon proteobacteria: General characteristics with suitable examples

Zeta proteobacteria: General characteristics with suitable examples

##### ***Gram Positive:***

Low G+ C (Firmicutes): General characteristics with suitable examples

High G+C (Actinobacteria): General characteristics with suitable examples

**Cyanobacteria:** Introductory idea with suitable example

## **MCBACOR02P: BACTERIOLOGY (PRACTICAL) SEMESTER –I**

**TOTAL HOURS: 60**

**CREDITS: 2**

1. Preparation of different media: Nutrient Agar & broth, Luria broth
2. Simple staining
3. Negative staining
4. Gram staining
5. Endospore staining.

6. Isolation of pure cultures of bacteria by streaking method.
7. Study and plot the growth curve of *E. coli* by turbidometric method.
8. Calculations of generation time and specific growth rate of bacteria from the graph plotted with the given data
9. Estimation of CFU count by spread plate method/pour plate method.

### **SUGGESTED READINGS**

1. Atlas RM. (1997). Principles of Microbiology. 2nd edition. W.M.T. Brown Publishers.
2. Black JG. (2008). Microbiology: Principles and Explorations. 7th edition. Prentice Hall
3. Madigan MT, and Martinko JM. (2014). Brock Biology of Micro-organisms. 14th edition. Parker J. Prentice Hall International, Inc.
4. Pelczar Jr MJ, Chan ECS, and Krieg NR. (2004). Microbiology. 5th edition Tata McGraw Hill.
5. Srivastava S and Srivastava PS. (2003). Understanding Bacteria. Kluwer Academic Publishers, Dordrecht
6. Stanier RY, Ingraham JL, Wheelis ML and Painter PR. (2005). General Microbiology. 5th edition McMillan.
7. Tortora GJ, Funke BR, and Case CL. (2008). Microbiology: An Introduction. 9th edition Pearson Education.
8. Willey JM, Sherwood LM, and Woolverton CJ. (2013). Prescott's Microbiology. 9th edition. McGraw Hill Higher Education.
9. Cappucino J and Sherman N. (2010). Microbiology: A Laboratory Manual. 9th edition. Pearson Education Limited

## **MCBACOR03T: BIOCHEMISTRY (THEORY)**

### **SEMESTER –II**

**TOTAL HOURS: 60**

**CREDITS: 4**

#### **Unit 1 Bioenergetics**

**No. of Hours: 8**

First and second laws of Thermodynamics. Definitions of Gibb's Free Energy, enthalpy, and Entropy and mathematical relationship among them, Standard free energy change and equilibrium constant Coupled reactions and additive nature of standard free energy change, Standard Free Energy Change of coupled reactions, Energy rich compounds: Phosphoenolpyruvate, 1,3- Bisphosphoglycerate, Thioesters, ATP, . Numerical problems on calculations of Standard Free Energy Change and Equilibrium constant

#### **Unit 2 Carbohydrates**

**No. of Hours: 12**

Families of monosaccharides: aldoses and ketoses, trioses, tetroses, pentoses, and hexoses. Stereo isomerism of monosaccharides, epimers, Mutarotation and anomers of glucose. Furanose and pyranose forms of glucose and fructose, Haworth projection formulae for glucose; chair and boat forms of glucose, Sugar derivatives, glucosamine, galactosamine, muramic acid, N- acetyl neuraminic acid, Disaccharides; concept of reducing and non-reducing sugars, occurrence and Haworth projections of maltose, lactose, and sucrose, Polysaccharides, storage polysaccharides, starch and glycogen. Structural Polysaccharides, cellulose, peptidoglycan and chitin

#### **Unit 3 Lipids**

**No. of Hours: 12**

Definition and major classes of storage and structural lipids. Storage lipids. Fatty acids structure and functions. Essential fatty acids. Triacyl glycerols structure, functions and properties. Saponification Structural lipids. Phosphoglycerides: Building blocks, General structure, functions and properties. Structure of phosphatidylethanolamine and

phosphatidylcholine,

Sphingolipids.

#### **Unit 4 Proteins**

**No. of Hours: 12**

Functions of proteins, Primary structures of proteins: Amino acids, the building blocks of proteins. General formula of amino acid and concept of zwitterion. Concept of pH and buffers and related numerical problems, Titration curve of amino acid and its Significance, Classification, biochemical structure and notation of standard protein amino acids Ninhydrin reaction. Secondary structure of proteins: Peptide unit and its salient features. The alpha helix, the beta pleated sheet and their occurrence in proteins, Tertiary and quaternary structures of proteins. Forces holding the polypeptide together. Human haemoglobin structure, Quaternary structures of proteins

#### **Unit 5. Enzymes**

**No. of Hours: 16**

Structure of enzyme: Apoenzyme and cofactors, prosthetic group-TPP, coenzyme NAD,metal cofactors, Classification of enzymes, Mechanism of action of enzymes: active site, transition state complex and activation energy. Lock and key hypothesis, and Induced Fit hypothesis. Significance of hyperbolic, double reciprocal plots of enzyme activity, Km, and allosteric mechanism Definitions of terms – enzyme unit, specific activity and turnover number, Multienzyme complex :pyruvate dehydrogenase; isozyme: lactate dehydrogenase, Effect of pH and temperature on enzymeactivity. Enzyme inhibition: competitive- sulfa drugs; non-competitive-heavy metal salts

### **MCBACOR03P: BIOCHEMISTRY (PRACTICALS) SEMESTER –II**

**TOTAL HOURS: 60**

**CREDITS: 2**

- 1.Preparation of buffers and numerical problems to explain the concepts
2. Qualitative/Quantitative tests for carbohydrates, reducing sugars, non reducing sugars
3. Qualitative/Quantitative tests for proteins: Biuret & Lowry's method
4. Formol titration of glycine
5. Study of enzyme kinetics – calculation of  $V_{max}$  , Km, Kcat values
6. Study effect of temperature, pH and Heavy metals on enzyme activity

#### **SUGGESTED READING**

1. Campbell, MK (2012) Biochemistry, 7th ed., Published by Cengage Learning
2. Campbell, PN and Smith AD (2011) Biochemistry Illustrated, 4th ed., Published by Churchill Livingstone
3. Tymoczko JL, Berg JM and Stryer L (2012) Biochemistry: A short course, 2nd ed., W.H.Freeman
4. Berg JM, Tymoczko JL and Stryer L (2011) Biochemistry, W.H.Freeman and Company
5. Nelson DL and Cox MM (2008) Lehninger Principles of Biochemistry, 5th Edition., W.H. Freeman and Company,
6. Willey MJ, Sherwood, LM & Woolverton C J (2013) Prescott, Harley and Klein's Microbiology by. 9th Ed., McGrawHill
7. Voet,D. and Voet J.G (2004) Biochemistry 3rd edition, John Wiley and Sons,

**MCBACOR04T: ENVIRONMENTAL MICROBIOLOGY (THEORY)**  
**SEMESTER –II**

**TOTAL HOURS: 60**

**CREDITS: 4**

**Unit 1 Microorganisms and their Habitats**

**No. of Hours: 14**

Structure and function of ecosystems-Terrestrial Environment: Soil profile and soil microflora Aquatic Environment: Microflora of fresh water and marine habitats Atmosphere: Aeromicroflora and dispersal of microbes Animal Environment: Microbes in/on human body (Microbiomics) & animal (ruminants) body. Extreme Habitats: Extremophiles: Microbes thriving at high & low temperatures, pH, high hydrostatic & osmotic pressures, salinity, & low nutrient levels. Microbial succession in decomposition of plant organic matter

**Unit 2 Microbial Interactions**

**No. of Hours: 12**

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**

**No. of Hours: 12**

Carbon cycle: Microbial degradation of cellulose, hemicelluloses, lignin and chitin Nitrogen cycle: Nitrogen fixation, ammonification, nitrification, denitrification and nitrate reduction Phosphorus cycle: Phosphate immobilization and solubilisation. Sulphur cycle: Microbes involved in sulphur cycle.

**Unit 4 Waste Management**

**No. of Hours: 12**

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

**Unit 5 Microbial Bioremediation**

**No. of Hours: 5**

Principles and degradation of common pesticides, organic (hydrocarbons, oil spills) and inorganic (metals) matter, biosurfactants

**Unit 6 Water Potability**

**No. of Hours: 5**

Treatment and safety of drinking (potable) water, methods to detect potability of water samples: (a) standard qualitative procedure: presumptive test/MPN test, confirmed and completed tests for faecal coliforms (b) Membrane filter technique and (c) Presence/absence tests

**MCBACOR04P: ENVIRONMENTAL MICROBIOLOGY (PRACTICAL)  
SEMESTER –II**

**TOTAL HOURS: 60**

**CREDITS: 2.**

1. Isolation of microbes (bacteria & fungi) from soil.
2. Isolation of microbes from rhizosphere and phyllosphere.
3. Assessment of microbiological quality of water.
4. Determination of BOD of waste water sample.
5. Study of amylase production by soil bacteria (qualitative).

**SUGGESTED READINGS**

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/ Benjamin Cummings
3. Maier RM, Pepper IL and Gerba CP. (2009). Environmental Microbiology. 2nd edition, Academic Press
4. Okafor, N (2011). Environmental Microbiology of Aquatic & Waste systems. 1st edition, Springer, New York
5. Singh A, Kuhad, RC & Ward OP (2009). Advances in Applied Bioremediation. Volume 17, Springer-Verlag, Berlin Hedeilberg
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. New Delhi.
12. Willey JM, Sherwood LM, and Woolverton CJ. (2013). Prescott's Microbiology. 9th edition. McGraw Hill Higher Education.

**MCBACOR05T: MICROBIAL PHYSIOLOGY AND METABOLISM (THEORY)  
SEMESTER –III**

**TOTAL HOURS: 60**

**CREDITS: 4**

**Unit 1 Nutrient uptake and Transport**

**No. of Hours: 10**

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

**Unit 2 Chemoheterotrophic Metabolism - Aerobic Respiration**      **No. of Hours: 16**

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

**Unit 3 Chemoheterotrophic Metabolism- Anaerobic respiration and fermentation**  
**No. of Hours:12**

Anaerobic respiration with special reference to dissimilatory nitrate reduction (Denitrification; nitrate /nitrite and nitrate/ammonia respiration; fermentative nitrate reduction) Fermentation - Alcohol fermentation and Pasteur effect; Lactate fermentation (homofermentative and heterofermentative pathways), concept of mixed acid fermentation.

**Unit 4 Chemolithotrophic and Phototrophic Metabolism**      **No. of Hours: 16**

Introduction to aerobic and anaerobic chemolithotrophy with an example each. Hydrogen oxidation (definition and reaction) and methanogenesis (definition and reaction) Introduction to phototrophic metabolism - groups of phototrophic microorganisms, anoxygenic vs. oxygenic photosynthesis with reference to photosynthesis in green bacteria, purple bacteria and cyanobacteria

**Unit 5 Nitrogen Metabolism - an overview**      **No. of Hours: 6**

Introduction to biological nitrogen fixation Ammonia assimilation Assimilatory nitrate reduction, dissimilatory nitrate reduction, denitrification

**MCBACOR05P: MICROBIAL PHYSIOLOGY AND METABOLISM  
(PRACTICAL)  
SEMESTER –III**

**TOTAL HOURS: 60**

**CREDITS: 2**

1. Effect of temperature on growth of *E. coli*
2. Effect of pH on growth of *E. coli*
3. Effect of carbon and nitrogen sources on growth of *E.coli*
4. Effect of salt on growth of *E. coli*
5. Demonstration of alcoholic fermentation

**SUGGESTED READINGS**

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

**MCBACOR06T: CELL BIOLOGY (THEORY)**  
**SEMESTER –III**

**TOTAL HOURS: 60**

**CREDITS: 4**

**Unit 1 Structure and organization of Eukaryotic Cell** **No. of Hours: 14**

Cell Organization – Eukaryotic (Plant and animal cells)  
Cell Wall: Eukaryotic cell wall, Extra cellular matrix and cell matrix interactions, Cell-Cell

Interactions - adhesion junctions, tight junctions, gap junctions, and plasmodesmata (only structural aspects) Mitochondria, chloroplasts and peroxisomes

Cytoskeleton: Structure and organization of actin filaments, association of actin filaments with plasma membrane, cell surface protrusions, intermediate filaments, microtubules

**Unit 2 Nucleus** **No. of Hours: 6**

Nuclear envelope, nuclear pore complex and nuclear lamina Chromatin – Molecular organization  
Nucleolus

**Unit 3 Basics of Protein Sorting and Transport** **No. of Hours: 12**

Ribosomes, Endoplasmic Reticulum – Structure, targeting and insertion of proteins in the ER, smooth ER, export of proteins to Golgi Apparatus – Organization, protein glycosylation, protein sorting and export from Golgi Apparatus, Lysosomes

**Unit 4 Introduction to Cell Signalling** **No. of Hours: 13**

Signalling molecules and their receptors Function of cell surface receptors  
Pathways of intra-cellular receptors – Cyclic AMP pathway, cyclic GMP

**Unit 5 Cell Cycle** **No. of Hours: 15**

Eukaryotic cell cycle and its regulation, Mitosis and Meiosis Development of cancer, causes and types Programmed cell death.

**MCBACOR06P: CELL BIOLOGY (PRACTICAL)**  
**SEMESTER –III**

**TOTAL HOURS: 60**

**CREDITS: 2**

1. Study a representative plant (*Allium cepa* or any other suitable plant material) and animal (squamous epithelial cells) cell by microscopy.
2. Cytochemical staining of DNA – Feulgen
3. Demonstration of the presence of mitochondria in striated muscle cells/ cheek epithelial cell using vital stain Janus Green B
4. Study of different stages of Mitosis.
5. Study of different stages of Meiosis.

**SUGGESTED****READING**

1. Hardin J, Bertoni G and Kleinsmith LJ. (2010). Becker's World of the Cell. 8th edition. Pearson.
2. Karp G. (2010) Cell and Molecular Biology: Concepts and Experiments. 6th edition. John Wiley & Sons. Inc.
3. De Robertis, EDP and De Robertis EMF. (2006). Cell and Molecular Biology. 8th edition. Lipincott Williams and Wilkins, Philadelphia.
4. Cooper, G.M. and Hausman, R.E. (2009). The Cell: A Molecular Approach. 5<sup>th</sup> Edition. ASM Press & Sunderland, Washington, D.C.; Sinauer Associates, MA.

**MCBACOR07T: MOLECULAR BIOLOGY (THEORY)****SEMESTER –III****TOTAL HOURS: 60****CREDITS: 4****Unit 1 Structures of DNA and RNA / Genetic Material** **No. of Hours: 12**

DNA Structure: Miescher to Watson and Crick- historic perspective, DNA structure, Salient features of double helix, Types of DNA, Types of genetic material, denaturation and renaturation, cot curves. DNA topology - linking number, topoisomerases; Organization of DNA Prokaryotes, Viruses, Eukaryotes. RNA Structure, Organelle DNA -- mitochondria and chloroplast DNA.

**Unit 2 Replication of DNA (Prokaryotes and Eukaryotes)** **No. of Hours: 10**

Bidirectional and unidirectional replication, semi- conservative, semi discontinuous replication Mechanism of DNA replication: Enzymes and proteins involved in DNA replication –DNA polymerases, DNA ligase, primase, telomerase – for replication of linear ends, Various models of DNA replication including rolling circle, D- loop (mitochondrial),  $\Theta$  (theta) mode of replication and other accessory protein.

**Unit 3 Transcription** **No. of Hours: 8**

Transcription in prokaryotes: Definition, difference from replication, promoter - concept and strength of promoter RNA Polymerase and the transcription unit  
Transcription in Eukaryotes: RNA polymerases, general Transcription factors (outline only)

**Unit 4 Basic concept of Post-Transcriptional Processing** **No. of Hours: 8**

Split genes, concept of introns and exons, RNA splicing, spliceosome machinery, concept of alternative splicing, Polyadenylation and capping, Processing of rRNA, RNA interference: si RNA, miRNA and its significance

**Unit 5 Translation** **No. of Hours: 10**

Prokaryotic Translational machinery, Charging of tRNA, aminoacyl tRNA synthetases, Mechanisms of initiation, elongation and termination of polypeptides. Fidelity of translation, Inhibitors of protein synthesis in prokaryotes. Difference between eukaryotic and prokaryotic translation

**Unit 6 Regulation of gene Expression** **No. of Hours:12**

Principles of transcriptional regulation, regulation at initiation with examples from *lac* and *trp* operons, Sporulation in *Bacillus*, Changes in Chromatin Structure - DNA methylation and Histone Acetylation mechanisms.



## MCBACOR07P: MOLECULAR BIOLOGY (PRACTICAL)

### SEMESTER –III

**TOTAL HOURS: 60**

**CREDITS: 2**

1. Estimation of DNA using colorimeter (diphenylamine reagent) or UV spectrophotometer (A260 measurement)
2. Estimation of RNA using colorimeter (orcinol reagent) or UV spectrophotometer (A260 measurement)
3. Isolation of genomic DNA from *E. coli*
4. Determination of Purity of isolated DNA
5. Resolution and visualization of DNA by Agarose Gel Electrophoresis.
6. Resolution and visualization of proteins by Polyacrylamide Gel Electrophoresis (SDS-PAGE): Demonstration only.

### SUGGESTED READINGS

1. Watson JD, Baker TA, Bell SP, Gann A, Levine M and Losick R (2008) Molecular Biology of the Gene, 6th edition, Cold Spring Harbour Lab. Press, Pearson Publication
2. Becker WM, Kleinsmith LJ, Hardin J and Bertoni GP (2009) The World of the Cell, 7th edition, Pearson Benjamin Cummings Publishing, San Francisco
3. De Robertis EDP and De Robertis EMF (2006) Cell and Molecular Biology, 8th edition. Lippincott Williams and Wilkins, Philadelphia
4. Karp G (2010) Cell and Molecular Biology: Concepts and Experiments, 6th edition, John Wiley & Sons. Inc.
5. Sambrook J and Russell DW. (2001). Molecular Cloning: A Laboratory Manual. 4<sup>th</sup> Edition, Cold Spring Harbour Laboratory press.
6. Krebs J, Goldstein E, Kilpatrick S (2013). Lewin's Essential Genes, 3rd Ed., Jones and Bartlett Learning
7. Gardner EJ, Simmons MJ, Snustad DP (2008). Principles of Genetics. 8th Ed. Wiley-India

## MCBACOR08T: MICROBIAL GENETICS (THEORY)

### SEMESTER –IV

**TOTAL HOURS: 60**

**CREDITS: 4**

#### **Unit 1 Genome Organization, Mutation & DNA repair**

**No. of Hours: 22**

Genome organization: *E. coli*, Mutations and mutagenesis: Definition and types of Mutations; Physical and chemical mutagens; Molecular basis of mutations; Functional mutants (loss and gain of function mutants); Uses of mutations Reversion and suppression: True revertants; Intra- and inter-genic suppression; Ames test; Mutator genes, Repair: phoreactivation, NER, SOS, mismatch.

#### **Unit 2 Plasmids**

**No. of Hours: 10**

Types of plasmids – F plasmid, R Plasmids, colicinogenic plasmids, Ti plasmids, linear plasmids, yeast- 2  $\mu$  plasmid, Plasmid replication and partitioning, Host range,

plasmid-incompatibility, plasmid amplification, Regulation of copy number, curing of plasmids

**Unit 3 Mechanisms of Genetic Exchange**

**No. of Hours: 20**

Transformation - Discovery, mechanism of natural competence Conjugation - Discovery, mechanism, Hfr and F' strains, Interrupted mating technique and time of entry mapping Transduction - Generalized transduction, specialized transduction, LFT & HFT lysates, Mapping by recombination and co-transduction of markers

**Unit 4 Transposable elements**

**No. of Hours: 8**

Prokaryotic transposable elements – Insertion Sequences, composite and non-composite transposons, Replicative and Non replicative transposition, Uses of transposons and transposition

**MCBACOR08P: MICROBIAL GENETICS**

**(PRACTICAL)**

**SEMESTER –IV**

**TOTAL HOURS: 60**

**CREDITS: 2**

1. Preparation of Master and Replica Plates
2. Effect of ultraviolet (UV) light exposure on bacterial survival
3. Isolation of Plasmid DNA from *E.coli*
4. Study different conformations of plasmid DNA through Agarose gel electrophoresis.
5. Bacterial Conjugation

**SUGGESTED READING**

1. Klug WS, Cummings MR, Spencer, C, Palladino, M (2011). Concepts of Genetics, 10th Ed., Benjamin Cummings
2. Krebs J, Goldstein E, Kilpatrick S (2013). Lewin's Essential Genes, 3rd Ed., Jones and Bartlett Learning
3. Pierce BA (2011) Genetics: A Conceptual Approach, 4th Ed., Macmillan Higher Education Learning
4. Watson JD, Baker TA, Bell SP et al. (2008) Molecular Biology of the Gene, 6th Ed., Benjamin Cummings
5. Gardner EJ, Simmons MJ, Snustad DP (2008). Principles of Genetics. 8th Ed. Wiley-India
6. Russell PJ. (2009). *i* Genetics- A Molecular Approach. 3rd Ed, Benjamin Cummings
7. Sambrook J and Russell DW. (2001). Molecular Cloning: A Laboratory Manual. 4<sup>th</sup> Edition, Cold Spring Harbour Laboratory press.
8. Maloy SR, Cronan JE and Friefelder D(2004) Microbial Genetics 2nd EDITION., Jones and Barlett Publishers

**MCBACOR09T: VIROLOGY (THEORY)**

**SEMESTER –IV**

**TOTAL HOURS: 60**

**CREDITS: 4**

**Unit 1 Nature and Properties of Viruses**

**No. of Hours: 12**

Introduction: Discovery of viruses, nature and definition of viruses, general properties, concept of viroids, virusoids, satellite viruses and Prions. Theories of viral origin

Structure of Viruses: Capsid symmetry, enveloped and non-enveloped viruses  
Isolation, purification and cultivation of viruses  
Viral taxonomy: Classification and nomenclature of different groups of viruses:  
Baltimore classification, ICTV classification

### **Unit 2 Bacteriophages & phage genetics**

**No. of Hours: 10**

Diversity, classification, one step multiplication curve, lytic and lysogenic phages ( $\lambda$  phage) concept of early and late proteins, regulation of transcription in  $\lambda$  phage

### **Unit 3 Viral Transmission, Salient features of viral nucleic acids and Replication**

**No. of Hours: 22**

Modes of viral transmission: Persistent, non-persistent, vertical and horizontal  
Salient features of viral Nucleic acid : Unusual bases (TMV, T4 phage), overlapping genes ( $\phi$ X174, Hepatitis B virus), alternate splicing (HIV), terminal redundancy (T4 phage), terminal cohesive ends (lambda phage), partial double stranded genomes (Hepatitis B), long terminal repeats (retrovirus), segmented (Influenza virus), and non-segmented genomes (picornavirus), capping and tailing (TMV), Viral multiplication and replication strategies, Viral Assembly, maturation and release (Adeno virus and influenza virus as example)

### **Unit 4 Viruses and Cancer**

**No. of Hours: 6**

Introduction to oncogenic viruses Types of oncogenic DNA and RNA viruses:  
Concepts of oncogenes and proto-oncogenes

### **Unit 5 Prevention & control of viral diseases**

**No. of Hours: 10**

Antiviral compounds and their mode of action Interferon and their mode of action  
General principles of viral vaccination, Mechanism of action of Amantadine,  
Acyclovir, Azidothymidine

## **MCBACOR09P: VIROLOGY (PRACTICAL)**

### **SEMESTER –IV**

**TOTAL HOURS: 60**

**CREDITS: 2**

1. Plaque assay of bacteriophages from standard teaching kit
2. Isolation and enumeration of bacteriophages (PFU) from water/sewage/cow dung sample using double agar layer technique (demonstration only)

### **SUGGESTED READING**

1. Dimmock, NJ, Easton, AL, Leppard, KN (2007). Introduction to Modern Virology. 6th edition, Blackwell Publishing Ltd.
2. Carter J and Saunders V (2007). Virology: Principles and Applications. John Wiley and Sons.
3. Flint SJ, Enquist, LW, Krug, RM, Racaniello, VR, Skalka, AM (2004). Principles of Virology, Molecular biology, Pathogenesis and Control. 2nd edition, ASM press Washington DC.
4. Levy JA, Conrat HF, Owens RA. (2000). Virology. 3rd edition. Prentice Hall publication, New Jersey.
5. Wagner EK, Hewlett MJ. (2004). Basic Virology. 2nd edition. Blackwell Publishing.
6. Mathews. (2004). Plant Virology. Hull R. Academic Press, New York.
7. Nayudu MV. (2008). Plant Viruses. Tata McGraw Hill, India.
8. Bos L. (1999) Plant viruses-A text book of plant virology by. Backhuys Publishers.
9. Versteeg J. (1985). A Color Atlas of Virology. Wolfe Medical Publication.

**MCBACOR10T: FOOD & DAIRY MICROBIOLOGY (THEORY)**  
**SEMESTER –IV**

**TOTAL HOURS: 60**

**CREDITS: 4**

**Unit 1 Foods as a substrate for microorganisms**

**No. of Hours: 8**

Intrinsic and extrinsic factors that affect growth and survival of microbes in foods, natural flora and source of contamination of foods in general.

**Unit 2 Microbial spoilage of various foods**

**No. of Hours: 10**

Principles, Spoilage of vegetables, fruits, meat, eggs, milk and butter, bread, canned Foods

**Unit 3 Principles and methods of food preservation**

**No. of Hours: 12**

Principles, physical methods of food preservation: temperature (low, high, canning, drying), irradiation, hydrostatic pressure, high voltage pulse, microwave processing and aseptic packaging, chemical methods of food preservation: salt, sugar, organic acids, SO<sub>2</sub>, nitrite and nitrates, ethylene oxide, antibiotics and bacteriocins

**Unit 4 Fermented foods**

**No. of Hours: 12**

Dairy starter cultures, fermented dairy products: yogurt, acidophilus milk, kumiss, kefir, dahi and cheese, other fermented foods: dosa, sauerkraut, soy sauce and tampeh, Probiotics: Health benefits, types of microorganisms used, probiotic foods available in market.

**Unit 5 Food borne diseases (causative agents, foods involved, symptoms and preventive measures)**

**No. of Hours: 12**

Food intoxications: *Staphylococcus aureus*, *Clostridium botulinum* and mycotoxins; Food infections: *Bacillus cereus*, *Vibrio parahaemolyticus*, *Escherichia coli*, Salmonellosis, Shigellosis, *Yersinia enterocolitica*, *Listeria monocytogenes* and *Campylobacter jejuni*

**Unit 6 Food sanitation and control**

**No. of Hours: 6**

HACCP, Indices of food sanitary quality and sanitizers

**MCBACOR10P: FOOD & DAIRY MICROBIOLOGY (PRACTICAL)**  
**SEMESTER –IV**

**TOTAL HOURS: 60**

**CREDITS: 2**

1. MBRT of milk samples and their standard plate count.
2. Alkaline phosphatase test to check the efficiency of pasteurization of milk.
3. Isolation of any food borne bacteria from food products.
4. Isolation of spoilage microorganisms from spoiled vegetables/fruits.
5. Isolation of spoilage microorganisms from bread.

**SUGGESTED READINGS**

1. Adams MR and Moss MO. (1995). Food Microbiology. 4th edition, New Age International (P) Limited Publishers, New Delhi, India.
2. Banwart JM. (1987). Basic Food Microbiology. 1st edition. CBS Publishers and Distributors, Delhi, India.

3. Davidson PM and Brannen AL. (1993). Antimicrobials in Foods. Marcel Dekker, New York.
4. Dillion VM and Board RG. (1996). Natural Antimicrobial Systems and Food Preservation. CAB International, Wallingford, Oxon.
5. Frazier WC and Westhoff DC. (1992). Food Microbiology. 3rd edition. Tata McGraw-Hill Publishing Company Ltd, New Delhi, India.
6. Gould GW. (1995). New Methods of Food Preservation. Blackie Academic and Professional, London.
7. Jay JM, Loessner MJ and Golden DA. (2005). Modern Food Microbiology. 7<sup>th</sup> edition, CBS Publishers and Distributors, Delhi, India.
8. Lund BM, Baird Parker AC, and Gould GW. (2000). The Microbiological Safety and Quality of Foods. Vol. 1-2, ASPEN Publication, Gaithersberg, MD.
9. Tortora GJ, Funke BR, and Case CL. (2008). Microbiology: An Introduction. 9<sup>th</sup> edition. Pearson Education.

## **MCBACOR11T: INDUSTRIAL MICROBIOLOGY (THEORY)**

### **SEMESTER –V**

**TOTAL HOURS: 60**

**CREDITS: 4**

**Unit 1 Introduction to industrial microbiology**

**No. of Hours: 2**

Brief history and developments in industrial microbiology

**Unit 2 Isolation of industrially important microbial strains and fermentation media**

**No. of Hours: 12**

Sources of industrially important microbes and methods for their isolation, preservation and maintenance of industrial strains, strain improvement, Crude and synthetic media; molasses, corn- steep liquor, sulphite waste liquor, whey, yeast extract and protein hydrolysates

**Unit 3 Types of fermentation processes, bio-reactors and measurement of fermentation parameters**

**No. of Hours: 14**

Types of fermentation processes - Solid-state and liquid-state (stationary and submerged) fermentations; batch, fed-batch (eg. baker's yeast) and continuous fermentations Components of a typical bio-reactor, Types of bioreactors-Laboratory, pilot- scale and production fermenters, constantly stirred tank and air-lift fermenters, Measurement and control of fermentation parameters - pH, temperature, dissolved oxygen, foaming and aeration

**Unit 4 Down-stream processing**

**No. of Hours: 6**

Cell disruption, filtration, centrifugation, solvent extraction, precipitation, lyophilization and spray drying

**Unit 5 Microbial production of industrial products (micro-organisms involved, media, fermentation conditions, downstream processing and uses)**

**No. of Hours: 20**

Citric acid, ethanol, penicillin, glutamic acid, Vitamin B12 Enzymes (amylase, protease, lipase) Wine, beer

**Unit 6 Enzyme immobilization**

**No. of Hours: 6**

Methods of immobilization, advantages and applications of immobilization, large scale applications of immobilized enzymes (glucose isomerase and penicillin acylase)

**MCBACOR11P: INDUSTRIAL MICROBIOLOGY (PRACTICAL)**  
**SEMESTER –V**

**TOTAL HOURS: 60**

**CREDITS: 2**

1. Microbial fermentations for the production and estimation (qualitative and quantitative) of (a) Enzymes: Amylase  
(b) Organic acid: Citric acid/Lactic acid  
(c) Alcohol: Ethanol
2. A visit to any industry to see industrial fermentation and other downstream processing operations.

**SUGGESTED READINGS**

1. Patel A.H. (1996). Industrial Microbiology. 1st edition, Macmillan India Limited
2. Okafor N. (2007). Modern Industrial Microbiology and Biotechnology. 1st edition. Bios Scientific Publishers Limited. USA
3. Waites M.J., Morgan N.L., Rockey J.S. and Higton G. (2001). Industrial Microbiology: An Introduction. 1st edition. Wiley – Blackwell
4. Glaze A.N. and Nikaido H. (1995). Microbial Biotechnology: Fundamentals of Applied Microbiology. 1st edition. W.H. Freeman and Company
5. Casida LE. (1991). Industrial Microbiology. 1st edition. Wiley Eastern Limited.
6. Crueger W and Crueger A. (2000). Biotechnology: A textbook of Industrial Microbiology. 2nd edition. Panima Publishing Co. New Delhi.
7. Stanbury PF, Whitaker A and Hall SJ. (2006). Principles of Fermentation Technology. 2nd edition, Elsevier Science Ltd.

**MCBACOR12T: IMMUNOLOGY (THEORY)**  
**SEMESTER –V**

**TOTAL HOURS: 60**

**CREDITS: 4**

**Unit 1 Introduction**

**No. of Hours: 4**

Concept of Innate and Adaptive immunity; Contributions of following scientists to the development of field of immunology - Edward Jenner, Karl Landsteiner, Robert Koch, Paul Ehrlich, Elie Metchnikoff, Peter Medawar, MacFarlane Burnet, Neils K Jerne, Rodney Porter and Susumu Tonegawa

**Unit 2 Immune Cells and Organs**

**No. of Hours: 7**

Structure, Functions and Properties of: Immune Cells – Stem cell, T cell, B cell, NK cell, Macrophage, Neutrophil, Eosinophil, Basophil, Mast cell, Dendritic cell; and Function of Immune Organs – Bone Marrow, Thymus, Lymph Node, Spleen

**Unit 3 Antigens**

**No. of Hours: 4**

Characteristics of an antigen (Foreignness, Molecular size and Heterogeneity); Haptens; Epitopes (T& B cell epitopes); T-dependent and T-independent antigens; Adjuvants

**Unit 4 Antibodies**

**No. of Hours: 6**

Structure, Types, Functions and Properties of antibodies; Antigenic determinants on antibodies (Isotypic, allotypic, idiotypic); Monoclonal and Chimeric antibodies

**Unit 5 Major Histocompatibility Complex****No. of Hours: 5**

Structure and Functions of MHC I & II molecules; Antigen processing and presentation (Cytosolic and Endocytic pathways)

**Unit 6 Complement System****No. of Hours: 4**

Components of the Complement system; Activation pathways (Classical, Alternative and Lectin pathways); Biological consequences of complement Activation

**Unit 7 Generation of Immune Response****No. of Hours: 10**

Primary and Secondary Immune Response; Generation of Humoral Immune Response (Plasma and Memory cells); Generation of Cell Mediated Immune Response (Self MHC restriction, T cell activation, Co- stimulatory signals); Killing Mechanisms by CTL and NK cells, Introduction to tolerance

**Unit 8 Immunological Disorders and Tumor Immunity****No. of Hours: 10**

Types of Autoimmunity and Hypersensitivity with examples; Immunodeficiencies - Animal models (Nude and SCID mice), tumor antigens

**Unit 9 Immunological Techniques****No. of Hours: 10**

Principles of Precipitation, Agglutination, Immunodiffusion, Immunoelectrophoresis, ELISA, ELISPOT, Western blotting, Immunofluorescence, Flow cytometry

**MCBACOR12P: IMMUNOLOGY  
(PRACTICAL)  
SEMESTER –V**

**TOTAL HOURS: 60****CREDITS: 2**

1. Identification of human blood groups.
2. Single Radial Immuno Diffusion
3. Immunodiffusion by Ouchterlony method.
4. DOT ELISA (Demonstration)
5. Immunoelectrophoresis.

**SUGGESTED READINGS**

1. Abbas AK, Lichtman AH, Pillai S. (2007). Cellular and Molecular Immunology. 6th edition Saunders Publication, Philadelphia.
2. Delves P, Martin S, Burton D, Roitt IM. (2006). Roitt's Essential Immunology. 11th edition Wiley- Blackwell Scientific Publication, Oxford.
3. Goldsby RA, Kindt TJ, Osborne BA. (2007). Kuby's Immunology. 6th edition W.H. Freeman and Company, New York.
4. Murphy K, Travers P, Walport M. (2008). Janeway's Immunobiology. 7th edition Garland Science Publishers, New York.

## MCBACOR13T: MEDICAL MICROBIOLOGY (THEORY)

### SEMESTER –VI

**TOTAL HOURS: 60**

**CREDITS: 4**

#### **Unit 1 Normal microflora of the human body and host pathogen interaction**

**No. of Hours: 8**

Normal microflora of the human body: Importance of normal microflora, normal microflora of skin, throat, gastrointestinal tract, urogenital tract

Host pathogen interaction: Definitions - Infection, Invasion, Pathogen, Pathogenicity, Virulence, Toxigenicity, Carriers and their types, Opportunistic infections, Nosocomial infections. Transmission of infection, Pathophysiologic effects of LPS

#### **Unit 2 Sample collection, transport and diagnosis**

**No. of Hours: 5**

Collection, transport and culturing of clinical samples, principles of different diagnostic tests (ELISA, Immunofluorescence, Agglutination based tests, Complement fixation, PCR, DNA probes).

#### **Unit 3 Bacterial diseases**

**No. of Hours: 15**

List of diseases of various organ systems and their causative agents. The following diseases with Symptoms, mode of transmission, prophylaxis and control

Respiratory Diseases: *Haemophilus influenzae*, *Mycobacterium tuberculosis*

Gastrointestinal Diseases: *Escherichia coli*, *Salmonella typhi*, *Vibrio cholerae*, *Helicobacter pylori* Others: *Staphylococcus aureus*, *Bacillus anthracis*, *Clostridium tetani*

#### **Unit 4 Viral diseases**

**No. of Hours: 14**

List of diseases of various organ systems and their causative agents. The following diseases with Symptoms, mode of transmission, prophylaxis and control

Polio, Hepatitis, Rabies, Dengue, AIDS, Influenza with brief description of swine flu, Ebola, Chikungunya, Japanese Encephalitis

#### **Unit 5 Protozoan diseases**

**No. of Hours: 5**

List of diseases of various organ systems and their causative agents. The following diseases with Symptoms, mode of transmission, prophylaxis and control

Malaria, Kala-azar

#### **Unit 6 Fungal diseases**

**No. of Hours: 5**

Brief description of each of the following types of mycoses and one representative disease to be studied with respect to transmission, symptoms and prevention

Cutaneous mycoses: Tinea pedis (Athlete's foot) Systemic mycoses: Histoplasmosis  
Opportunistic mycoses: Candidiasis

#### **Unit 7 Antimicrobial agents: General characteristics & mode of action**

**No. of Hours: 8**

Antibacterial agents: Five modes of action with one example each: Inhibitor of nucleic acid synthesis; Inhibitor of cell wall synthesis; Inhibitor of cell membrane function; Inhibitor of protein synthesis; Inhibitor of metabolism Antifungal agents: Mechanism of action of Amphotericin B, Griseofulvin, Antibiotic resistance, MDR, XDR, MRSA, NDM-1



**MCBACOR13P: MEDICAL MICROBIOLOGY (PRACTICAL)  
SEMESTER –VI**

**TOTAL HOURS: 60**

**CREDITS: 2**

1. Identify bacteria (any three of *E. coli*, *Staphylococcus*, *Bacillus*) using laboratory strains on the basis of cultural, morphological and biochemical characteristics: IMViC, TSI, nitrate reduction, urease production and catalase tests
2. Antibacterial sensitivity test by agar cup assay
3. Antibacterial sensitivity test by Kirby-Bauer method
4. Determination of minimal inhibitory concentration (MIC) of an antibiotic.

**SUGGESTED READING**

1. Ananthanarayan R. and Paniker C.K.J. (2009) Textbook of Microbiology. 8th edition, University Press Publication
2. Brooks G.F., Carroll K.C., Butel J.S., Morse S.A. and Mietzner, T.A. (2013) Jawetz, Melnick and Adelberg's Medical Microbiology. 26th edition. McGraw Hill Publication
3. Goering R., Dockrell H., Zuckerman M. and Wakelin D. (2007) Mims' Medical Microbiology. 4<sup>th</sup> edition. Elsevier
4. Willey JM, Sherwood LM, and Woolverton CJ. (2013) Prescott, Harley and Klein's Microbiology. 9th edition. McGraw Hill Higher Education
5. Madigan MT, Martinko JM, Dunlap PV and Clark DP. (2014). Brock Biology of Microorganisms. 14th edition. Pearson International Edition

**MCBACOR14T: RECOMBINANT DNA TECHNOLOGY (THEORY)  
SEMESTER –VI**

**TOTAL HOURS: 60**

**CREDITS: 4**

**Unit 1 Introduction to Genetic Engineering**

**No. of Hours: 2**

Milestones in genetic engineering and biotechnology

**Unit 2 Molecular Cloning- Tools and Strategies**

**No. of Hours: 20**

Restriction modification systems: Types I, II and III. Mode of action, nomenclature, applications of Type II restriction enzymes in genetic engineering DNA modifying enzymes and their applications: DNA polymerases. Terminal deoxynucleotidyl transferase, kinases and phosphatases, and DNA ligases Cloning Vectors: Definition and Properties Plasmid vectors: pBR and pUC series Bacteriophage lambda and M13 based vectors Cosmids, BACs, YACs Use of linkers and adaptors Expression vectors: *E.coli* lac and T7 promoter-based vectors, yeast YIp, YEp and YCp vectors, Baculovirus based vectors, mammalian SV40-based expression vectors

**Unit 3 Methods in Molecular Cloning**

**No. of Hours: 16**

Transformation of DNA: Chemical method, Electroporation, Gene delivery: Microinjection, electroporation, biolistic method (gene gun), liposome and viral-mediated delivery, *Agrobacterium* - mediated delivery DNA, RNA and Protein analysis: Agarose gel electrophoresis, Southern - and Northern - blotting techniques, dot blot, DNA microarray analysis, SDS-PAGE and Western blotting.

**Unit 4 DNA Amplification and DNA sequencing****No. of Hours: 10**

PCR: Basics of PCR, RT-PCR, Real-Time PCR Sanger's method of DNA Sequencing: traditional and automated sequencing Primer walking and shotgun sequencing

**Unit 5 Construction and Screening of Genomic & cDNA libraries No. of Hours: 6**

Genomic and cDNA libraries: Preparation and uses, Screening of libraries: Colony hybridization and colony PCR, Chromosome walking and chromosome jumping

**Unit 6 Applications of Recombinant DNA Technology****No. of Hours: 6**

Products of recombinant DNA technology: Products of human therapeutic interest - insulin, hGH, Bt transgenic - cotton, brinjal, Gene therapy, recombinant vaccines and site directed mutagenesis

**MCBACOR14P: RECOMBINANT DNA TECHNOLOGY (PRACTICAL)  
SEMESTER –VI****TOTAL HOURS: 60****CREDITS: 2**

1. Preparation of competent cells for transformation
2. Bacterial Transformation and calculation of transformation efficiency.
3. Digestion of DNA using restriction enzymes and analysis by agarose gel electrophoresis
4. Ligation of DNA fragments
5. Cloning of DNA insert and Blue white screening of recombinants.

**SUGGESTED READING**

1. Brown TA. (2010). Gene Cloning and DNA Analysis. 6th edition. Blackwell Publishing, Oxford, U.K.
2. Clark DP and Pazdernik NJ. (2009). Biotechnology: Applying the Genetic Revolution. Elsevier Academic Press, USA
3. Primrose SB and Twyman RM. (2006). Principles of Gene Manipulation and Genomics, 7th edition. Blackwell Publishing, Oxford, U.K.
4. Sambrook J and Russell D. (2001). Molecular Cloning-A Laboratory Manual. 3rd edition. Cold Spring Harbor Laboratory Press
5. Wiley JM, Sherwood LM and Woolverton CJ. (2008). Prescott, Harley and Klein's Microbiology. McGraw Hill Higher Education
6. Brown TA. (2007). Genomes-3. Garland Science Publishers
7. Primrose SB and Twyman RM. (2008). Genomics: Applications in human biology. Blackwell Publishing, Oxford, U.K.

## **B.Sc (HONOURS) MICROBIOLOGY (CBCS STRUCTURE)**

### **MCBADSE01T: ADVANCES IN MICROBIOLOGY (THEORY)**

**TOTAL HOURS: 60**  
**CREDITS: 4**

#### **Unit 1 Evolution of Bacterial Genomes** **No. of Hours: 15**

Basic concept of bacterial genome evolution, Horizontal gene transfer (HGT), Evolution of bacterial virulence - Genomic islands, Pathogenicity islands (PAI) and their characteristics

#### **Unit 2 Metagenomics** **No. of Hours: 15**

Development of metagenomics, Understanding bacterial diversity using metagenomic approach. Basic knowledge of viral metagenome, metatranscriptomics, metaproteomics and metabolomics.

#### **Unit 3 Molecular Basis of Host-Microbe Interactions** **No. of Hours: 15**

Virulence factors of pathogens: enzymes, toxins (host specific and non specific) growth regulators, virulence factors in viruses (replicase, coat protein, silencing suppressors) in disease development. Biofilms: types of microorganisms, molecular aspects and significance in environment, health care, virulence and antimicrobial resistance.

#### **Unit 4 Systems and Synthetic Biology** **No. of Hours: 15**

Networking in biological systems: Quorum sensing in bacteria, Co-ordinated regulation of bacterial virulence factors. Introduction and implications of synthetic biology with respect to bacteria and viruses

### **MCBADSE01P: ADVANCES IN MICROBIOLOGY (PRACTICAL)**

**TOTAL HOURS: 60**  
**CREDITS: 2**

1. Extraction and purification genomic DNA from *E.coli* using phenol chloroform method.
2. Performing PCR amplification by using suitable DNA
3. Isolation of antibiotic resistant bacteria from soil and study of multiple antibiotic resistance, using at least three(3) antibiotics.

#### **SUGGESTED READING**

1. Fraser CM, Read TD and Nelson KE. Microbial Genomes, 2004, Humana Press
2. Miller RV and Day MJ. Microbial Evolution- Gene establishment, survival and exchange, 2004, ASM Press
3. Bull AT. Microbial Diversity and Bioprospecting, 2004, ASM Press
4. Sangdun C. Introduction to Systems Biology, 2007, Humana Press
5. Klipp E, Liebermeister W. Systems Biology – A Textbook, 2009, Wiley
6. Caetano-Anolles G. Evolutionary Genomics and Systems Biology, 2010, John Wiley and Sons
7. Madigan MT, Martink JM, Dunlap PV and Clark DP (2014) Brook's Biology of Microorganisms, 14th edition, Pearson-Benjamin Cummings
8. Wilson BA, Salyers AA Whitt DD and Winkler ME (2011) Bacterial Pathogenesis- A molecular Approach, 3rd edition, ASM Press,

9. Bouarab K, Brisson and Daayf F (2009) Molecular Plant-Microbe interaction CAB International
10. Voit EO (2012) A First Course in Systems Biology, 1st edition, Garland Science

**MCBADSE02T: BIOMATHEMATICS AND BIOSTATISTICS (THEORY)**

**TOTAL HOURS: 60**

**CREDITS: 4**

**Unit 1 Biomathematics**

**No of Hours: 30**

Reaction Kinetics: Zero order, first order, second order kinetics with examples; Michaelis-Menten equation; Coupled reactions, Application in fermentation technique: Mathematical expression in batch culture, continuous culture, steady state condition, logarithm: Application in Henderson-Hasselbatch equation, problems related to buffer solution, Free energy: Mathematical expression and related problems, Differentiation and Integration: Radioactive decay, Half life, problems related to radioactivity, Decimal reduction time: mathematical expression and related problems

**Unit 2 Biostatistics**

**No of Hours: 30**

Measures of central tendency, Measures of dispersion; skewness, kurtosis; Elementary Probability and basic laws; Discrete and Continuous Random variable, Mathematical Expectation; Curve Fitting; Correlation and Regression. Emphasis on examples from Biological Sciences; Poisson and Normal distribution  
 Statistical methods: Principles of statistical analysis of biological data. Sampling parameters. Difference between sample and Population, Sampling Errors: Standard Error, Testing of Hypothesis, Level of Significance and Degree of Freedom; t-test, Z- test and F test; Confidence Interval; Chi-square test

**MCBADSE02P: BIOMATHEMATICS AND BIOSTATISTICS (PRACTICAL)**

**TOTAL HOURS: 60**

**CREDITS: 2**

1. Mean, Median, Mode from grouped and ungrouped Data set
2. Determination of Standard Deviation and standard error in laboratory experiment data
3. Graphical representation of Standard Deviation and standard error
4. Testing of Hypothesis- Normal Distribution, t-test and Chi-Square-test
5. Determination of Confidence Interval by MPN test of water sample

**SUGGESTED READINGS**

1. H. S. Bear: Understanding Calculus, John Wiley and Sons (Second Edition); 2003.
2. E. Batschelet : Introduction to Mathematics for Life Scientists, Springer Verlag, International Student Edition, Narosa Publishing House, New Delhi (1971, 1975)
3. A. Edmondson and D. Druce : Advanced Biology Statistics, Oxford University Press; 1996.
4. W. Danial : Biostatistics : A foundation for Analysis in Health Sciences, John Wiley and Sons Inc; 2004.

**MCBADSE03T: INHERITANCE BIOLOGY  
(THEORY)**

**TOTAL HOURS: 60**

**CREDITS: 4**

**Unit 1 Introduction to Genetics**

**No. of Hours: 5**

Historical development, Model organisms in genetic analyses and experimentation: *Escherichia coli*, *Saccharomyces cerevisiae*, *Drosophila melanogaster*, *Arabidopsis thaliana*

**Unit 2 Mendelian Principles**

**No. of Hours: 13**

Mendel's Laws: Dominance, segregation, independent assortment, deviation from Mendelian inheritance, Rediscovery of Mendel's principles, Chromosome theory of inheritance: Allele, multiple alleles, pseudoallele, complementation tests, Extensions of Mendelian genetics: Allelic interactions, concept of dominance, recessiveness, Incomplete dominance and co-dominance, Multiple alleles, Epistasis, penetrance and expressivity

**Unit 3 Linkage and Crossing over**

**No. of Hours: 6**

Linkage and recombination of genes, Cytological basis of crossing over, Crossing over at four-strand stage, Molecular mechanism of crossing over.

**Unit 4 Extra-Chromosomal Inheritance**

**No. of Hours: 9**

Extra nuclear inheritance in bacteria: Plasmid and episome, Organelle heredity – Chloroplast, Mitochondria,

**Unit 5 Characteristics of Chromosomes**

**No. of Hours: 8**

Structural organization of chromosomes - centromeres, telomeres and repetitive DNA, Packaging DNA molecules into chromosomes, Concept of euchromatin and heterochromatin, Chromosome banding, Giant chromosomes: Polytene and lampbrush chromosomes,

**Unit 6 Recombination**

**No. of Hours: 7**

Homologous and non-homologous recombination, including transposition, site-specific recombination.

**Unit 7 Human genetics**

**No. of Hours: 12**

Pedigree analysis, lod score for linkage testing, karyotypes, Variations in chromosome structure: Deletion, duplication, inversion and translocation, Variation in chromosomal number and structural abnormalities - Klinefelter syndrome, Turner syndrome, Down syndrome.

**MCBADSE03P: INHERITANCE BIOLOGY (PRACTICAL)**

**TOTAL HOURS: 60**

**CREDITS: 2**

1. Chi-Square Analysis of Mendelian monohybrid/dihybrid cross
2. Study of polytene chromosomes using temporary mounts of salivary glands of *Chiromonas / Drosophila* larvae
3. Study of pedigree analysis: problems

## SUGGESTED READING

1. Gardner EJ, Simmons MJ, Snustad DP (2008). Principles of Genetics. 8th Ed. Wiley-India
2. Snustad DP, Simmons MJ (2011). Principles of Genetics. 6th Ed. John Wiley and Sons Inc.
3. Weaver RF, Hedrick PW (1997). Genetics. 3rd Ed. McGraw-Hill Education
4. Klug WS, Cummings MR, Spencer CA, Palladino M (2012). Concepts of Genetics. 10th Ed. Benjamin Cummings
5. Griffith AJF, Wessler SR, Lewontin RC, Carroll SB. (2007). Introduction to Genetic Analysis. 9<sup>th</sup> Ed. W.H.Freeman and Co., New York
6. Hartl DL, Jones EW (2009). Genetics: Analysis of Genes and Genomes. 7th Ed, Jones and Bartlett Publishers
7. Russell PJ. (2009). *i* Genetics - A Molecular Approach. 3rd Ed, Benjamin Cummings

## MCBADSE04T: MICROBES IN SUSTAINABLE AGRICULTURE AND DEVELOPMENT (THEORY)

**TOTAL HOURS: 60**

**CREDITS: 4**

### **Unit 1 Soil Microbiology**

**No of Hours: 9**

Soil as Microbial Habitat, Soil profile and properties, Soil formation, Diversity and distribution of microorganisms in soil

### **Unit 2 Microbial Activity in Soil and Green House Gases**

**No of Hours: 6**

Carbon dioxide, methane, nitrous oxide, nitric oxide – production and control

### **Unit 3 Microbial Control of Soil Borne Plant Pathogens**

**No of Hours: 9**

Biocontrol mechanisms and ways, Microorganisms used as biocontrol agents against Microbial plant pathogens, Insects.

### **Unit 4 Biofertilization, Phytostimulation, Bioinsecticides**

**No of Hours: 16**

Plant growth promoting bacteria, biofertilizers – symbiotic (*Bradyrhizobium*, *Rhizobium*, *Frankia*), Non Symbiotic (*Azospirillum*, *Azotobacter*, Mycorrhizae), Phosphate solubilizers.

### **Unit 5 Secondary Agriculture Biotechnology**

**No of Hours: 12**

Biomanure, biogas, biofuels – general concepts and advantages

### **Unit 6 Genetically Modified crops**

**No of Hours: 8**

Bt crops, golden rice, transgenic animals, advantages, social and environmental aspects.

## MCBADSE04P: MICROBES IN SUSTAINABLE AGRICULTURE AND DEVELOPMENT (PRACTICAL)

**TOTAL HOURS: 60**

**CREDITS: 2**

1. Study of microflora of rhizospheric soils
2. Isolation and characterization of phosphate solubilizing bacteria from soil
3. Isolation and characterization of Nitrogen fixing bacteria from soil
4. Isolation of *Rhizobium* from root nodules
5. Soil dehydrogenase assay

## SUGGESTED READINGS

1. Agrios GN. (2006). Plant Pathology. 5th edition. Academic press, San Diego,
2. Singh RS. (1998). Plant Diseases Management. 7th edition. Oxford & IBH, New Delhi.
3. Glick BR, Pasternak JJ, and Patten CL (2010) Molecular Biotechnology 4<sup>th</sup> edition, ASM Press,
4. Atlas RM and Bartha R. (2000). Microbial Ecology: Fundamentals & Applications. 4th edition. Benjamin/Cummings Science Publishing, USA
5. Maier RM, Pepper IL and Gerba CP. (2009). Environmental Microbiology. 2nd edition, Academic Press
6. Barton LL & Northup DE (2011). Microbial Ecology. 1st edition, Wiley Blackwell, USA
7. Campbell RE. (1983). Microbial Ecology. Blackwell Scientific Publication, Oxford, England.
8. Coyne MS. (2001). Soil Microbiology: An Exploratory Approach. Delmar Thomson Learning.
9. Altman A (1998). Agriculture Biotechnology, 1st edition, Marcel decker Inc.
10. Mahendra K. Rai (2005). Hand Book of Microbial Biofertilizers, The Haworth Press, Inc. New York.
11. Reddy, S.M. et. al. (2002). Bioinoculants for Sustainable Agriculture and Forestry, Scientific Publishers.
12. Saleem F and Shakoori AR (2012) Development of Bioinsecticide, Lap Lambert Academic Publishing GmbH KG

## **MCBADSE05T: BIOSAFETY AND INTELLECTUAL PROPERTY RIGHTS (THEORY)**

**TOTAL HOURS: 60**

**CREDITS: 4**

### **Unit 1**

**No of Hours: 16**

Concept of IPR, Designs, trademarks, trade secrets, domain names, geographical indications, copyright, Evolution of patent laws, history of Indian patent system, Agreements and Treaties: GATT, TRIPS Agreements; Role of Madrid Agreement; Hague Agreement; WIPO Treaties; Budapest Treaty on international recognition of the deposit of microorganisms; UPOV & Brene conventions; Patent Co-operation Treaty (PCT); Indian Patent Act 1970 & recent amendments. Classification of patents in India,

### **Unit 2**

**No of Hours: 12**

classification of patents by WIPO, categories of patent, special patents, patenting biological products, Patentable inventions in India and abroad, non patentable inventions in India and abroad, Rights of patent holder and co-owners, transfer of patent rights, limitations of patent rights, Patent and economy, patent management, patent growth, patenting of life forms, biodiversity and IPR, Study of famous case study between Diamond and Chakraborty

**Unit 3****No of Hours: 12**

Overview of biosafety, risk assessment, Cartagena Protocol on Biosafety, capacity building, GMOs Transgenic technology, future opportunities and challenges, Regulatory measures for biosafety, biosafety guidelines in India evolved by DBT.

**Unit 4****No of Hours: 12**

Prevention of Food Adulteration Act, Food Safety and Standards Bill and Seed Policy, rules for the manufacture and storage of hazardous, biosafety management, Some of the products development from RDT and their biosafety issues, biosafety and Gene therapy, ecological safety assessment of recombinant organisms

**Unit 5****No of Hours: 8**

Bioethics and its scope, different approaches to ethics, biological weapons and their social and ethical implications, Importance of good laboratory practices, general good laboratory practices

**MCBADSE05P: BIOSAFETY AND INTELLECTUAL PROPERTY RIGHTS  
(PRACTICAL)**

**TOTAL HOURS: 60****CREDITS: 2**

Standardization of contamination free environment in laboratory practices. Biochemical and Microbiological analysis of Foods. Food adulteration and its Testing / Analysis

**Suggested Reading**

1. Bare Act, 2007. Indian Patent Act 1970 Acts & Rules, Universal Law Publishing Co. Pvt. Ltd., New Delhi.
2. Goel D & Prashar S (2013). IPR, Biosafety and Bioethics. Pearson



**MCBADSE06T: INSTRUMENTATION AND BIOTECHNIQUES  
(THEORY)**

**TOTAL HOURS: 60**

**CREDITS: 4**

**Unit 1 Microscopy**

**No. of Hours: 10**

Brightfield and darkfield microscopy, Fluorescence Microscopy, Phase contrast Microscopy, Confocal Microscopy, Electron Microscopy (Scanning and Transmission Electron Microscopy).

**Unit 2 Chromatography**

**No. of Hours: 14**

Principles and applications of paper chromatography (including Descending and 2-D), Thin layer chromatography. Column packing and fraction collection, Gel filtration chromatography, ion- exchange chromatography and affinity chromatography, GLC, HPLC.

**Unit 3 Electrophoresis**

**No. of Hours: 14**

Principle and applications of native polyacrylamide gel electrophoresis, SDS-polyacrylamide gel electrophoresis, 2D gel electrophoresis, Isoelectric focusing, Zymogram preparation and Agarose gel electrophoresis.

**Unit 4 Spectrophotometry**

**No. of Hours: 10**

Principle and use of study of absorption spectra of biomolecules, Analysis of biomolecules using UV and visible range, Colorimetry and turbidometry

**Unit 5 Centrifugation**

**No. of Hours: 12**

Preparative and analytical centrifugation, fixed angle and swinging bucket rotors. RCF and sedimentation coefficient, differential centrifugation, density gradient centrifugation and ultracentrifugation

**MCBADSE06P : INSTRUMENTATION AND BIOTECHNIQUES  
(PRACTICAL)**

**TOTAL HOURS: 60**

**CREDITS: 2**

1. Separation of amino acid mixtures by thin layer chromatography.
2. Separation of protein mixtures by any form of chromatography.
3. Separation of protein mixtures by Polyacrylamide Gel Electrophoresis (PAGE).
4. Determination of  $\lambda_{\max}$  for an unknown sample and calculation of extinction coefficient.
5. Separation of components of a given mixture using a laboratory scale centrifuge.

**SUGGESTED READINGS**

1. Wilson K and Walker J. (2010). Principles and Techniques of Biochemistry and Molecular Biology. 7<sup>th</sup> Ed., Cambridge University Press.

2. Nelson DL and Cox MM. (2008). Lehninger Principles of Biochemistry, 5<sup>th</sup> Ed., W.H. Freeman and Company.
3. Willey MJ, Sherwood LM & Woolverton C J. (2013). Prescott, Harley and Klein's Microbiology. 9<sup>th</sup> Ed., McGraw Hill.
4. Karp G. (2010) Cell and Molecular Biology: Concepts and Experiments. 6th edition. John Wiley & Sons. Inc.
5. De Robertis EDP and De Robertis EMF. (2006). Cell and Molecular Biology. 8th edition. Lipincott Williams and Wilkins, Philadelphia.
6. Cooper G.M. and Hausman R.E. (2009). The Cell: A Molecular Approach. 5<sup>th</sup> Edition. ASM Press & Sunderland, Washington D.C., Sinauer Associates, MA.
7. Nigam A and Ayyagari A. 2007. Lab Manual in Biochemistry, Immunology and Biotechnology. Tata McGraw Hill.

**MCBSSEC01M: FOOD  
FERMENTATION TECHNIQUES**

**TOTAL HOURS: 30**

**CREDITS: 2**

**Unit 1 Fermented Foods**

**No of Hours: 4**

Definition, types, advantages and health benefits

**Unit 2 Milk Based Fermented Foods**

**No of Hours: 8**

Dahi, Yogurt, Buttermilk (Chach) and cheese: Preparation of inoculums, types of microorganisms and production process

**Unit 3 Grain Based Fermented Foods**

**No of Hours: 6**

Soy sauce, Bread, Idli and Dosa: Microorganisms and production process

**Unit 4 Vegetable Based Fermented Foods**

**No of Hours: 4**

Pickels, Saeurkraut: Microorganisms and production process

**Unit 5 Fermented Meat and Fish**

**No of Hours: 4**

Types, microorganisms involved, fermentation process

**Unit 6 Probiotic Foods**

**No of Hours: 4**

Definition, types, microorganisms and health benefits

**Suggested Readings**

1. Hui YH, Meunier-Goddik L, Josephsen J, Nip WK, Stanfield PS (2004) Handbook of food and fermentation technology, CRC Press
2. Holzapfel W (2014) Advances in Fermented Foods and Beverages, Woodhead Publishing.
3. Yadav JS, Grover, S and Batish VK (1993) A comprehensive dairy microbiology, Metropolitan
4. Jay JM, Loessner MJ, Golden DA (2005) Modern Food Microbiology, 7th edition. Springer

## **MCBSSEC02M: MICROBIOLOGICAL ANALYSIS OF AIR AND WATER**

**TOTAL HOURS: 30**

**CREDITS: 2**

### **Unit 1 Aeromicrobiology**

**No of Hours: 4**

Bioaerosols, Air borne microorganisms (bacteria, Viruses, fungi) and their impact on human health and environment, significance in food and pharma industries and operation theatres, allergens

### **Unit 2 Air Sample Collection and Analysis**

**No of Hours: 7**

Bioaerosol sampling, air samplers, methods of analysis, CFU, culture media for bacteria and fungi, Identification characteristics

### **Unit 3 Control Measures**

**No of Hours: 4**

Fate of bioaerosols, inactivation mechanisms – UV light, HEPA filters, desiccation, Incineration

### **Unit 4 Water Microbiology**

**No of Hours: 4**

Water borne pathogens, water borne diseases

### **Unit 5 Microbiological Analysis of Water**

**No of Hours: 7**

Sample Collection, Treatment and safety of drinking (potable) water, methods to detect potability of water samples: (a) standard qualitative procedure: presumptive/MPN tests, confirmed and completed tests for faecal coliforms (b) Membrane filter technique and (c) Presence/absence tests

### **Unit 6 Control Measures**

**No of Hours: 4**

Precipitation, chemical disinfection, filtration, high temperature, UV light

### **Suggested Reading**

1. da Silva N, Taniwaki MH, Junqueira VC, Silveira N, Nascimento MS, Gomes RAR (2012) Microbiological Examination Methods of Food and Water A Laboratory Manual, CRC Press
2. Atlas RM and Bartha R. (2000). Microbial Ecology: Fundamentals & Applications. 4<sup>th</sup> edition. Benjamin/Cummings Science Publishing, USA
3. Maier RM, Pepper IL and Gerba CP. (2009). Environmental Microbiology. 2<sup>nd</sup> edition, Academic Press
4. Hurst CJ, Crawford RL, Garland JL, Lipson DA (2007) Manual of Environmental Microbiology, 3<sup>rd</sup> edition, ASM press edition, ASM press

MCBHGEC01T/ MCBGCOR01T(For General Students):

**BACTERIOLOGY AND VIROLOGY (THEORY)**

**TOTAL HOURS: 60**

**CREDITS: 4**

**Unit 1 Cell organization**

**No. of Hours: 10**

Cell size, shape and arrangements, capsule, flagella and pili, Composition and detailed structure of gram- positive and gram- negative cell wall. Structure, chemical composition and functions of bacterial cell membranes, Ribosomes, inclusions, nucleoid, plasmids, structure of endospore.

**Unit 2 Bacterial growth and control**

**No. of Hours: 8**

Culture media: Components of media, Synthetic or defined media, Complex media, enriched media, selective media, differential media, enrichment culture media, Pure culture isolation: Streaking, serial dilution and plating methods, cultivation, maintenance and stocking of pure cultures, phases of growth

**Unit 3 Bacterial Systematics and Taxonomy**

**No. of Hours: 8**

Taxonomy, nomenclature, systematics, types of classifications, Morphology, ecological significance and economic importance of Gram negative and Gram positive bacteria.

**Unit 4 Introduction to Viruses**

**No. of Hours: 12**

Properties of viruses; general nature and important features Subviral particles; viroids, prions and their importance Isolation and cultivation of viruses

**Unit 5 Structure, and multiplication of viruses**

**No. of Hours: 12**

Morphological characters: Capsid symmetry and different shapes of viruses with examples  
Viral multiplication in the Cell: Lytic and lysogenic cycle  
Description of important viruses: salient features of the viruses infecting different hosts - Bacteriophages (T4 & Lambda); Plant (TMV & Cauliflower Mosaic Virus), Human (HIV & Hepatitis viruses)

**Unit 6 Role of Viruses in Disease and its prevention**

**No. of Hours: 10**

Viruses as pathogens: Role of viruses in causing diseases, Prevention and control of viruses: Viral vaccines, interferons and antiviral compounds

**MCBHGEC01P/ MCBGCOR01P (For General Students):**

**BACTERIOLOGY AND VIROLOGY (PRACTICAL)**

**TOTAL HOURS: 60**

**CREDITS: 2**

1. Preparation of different media: Nutrient agar, Nutrient broth
2. To perform Gram's staining of the bacterial smear
3. To perform spore staining
4. Isolation of pure cultures of bacteria by streaking method
5. Enumeration of colony forming units (CFU) count by spread plate method/pour plate

**SUGGESTED READING**

1. Atlas RM. (1997). Principles of Microbiology. 2nd edition. WM.T.Brown Publishers
2. Madigan MT, Martinko JM, Dunlap PV and Clark DP (2014). Brock Biology of Microorganisms. 14th edition. Pearson Education, Inc.
3. Stanier RY, Ingraham JL, Wheelis ML and Painter PR. (2005). General Microbiology. 5th edition. McMillan
4. Carter J and Saunders V(2007). Virology; principles and Applications. John Wiley and Sons
5. Flint SJ, Enquist, LW, Krug, RM, Racaniello, VR Skalka, AM (2004) Principles of Virology, Molecular Biology, Pathogenesis and Control. 2nd edition. ASM Press

MCBHGEC02T/ MCBGCOR02T(For General Students):

**INDUSTRIAL & FOOD MICROBIOLOGY (THEORY)**

**TOTAL HOURS: 60**

**CREDITS: 4**

**Unit 1 Introduction to Industrial microbiology**

**No. of Hours: 10**

Types of fermentation processes - solid state, liquid state, batch, fed-batch and continuous, Types of fermenters – laboratory, pilot-scale and production fermenters, Components of a typical continuously stirred tank bioreactor

**Unit 2 Isolation of Industrial Strains and Fermentation Medium**

**No. of Hours: 8**

Primary and secondary screening, Preservation and maintenance of industrial strains, Ingredients used in fermentation medium - molasses, corn steep liquor, whey & Yeast extract

**Unit 3 Microbial fermentation processes**

**No. of Hours: 12**

Downstream processing - filtration, centrifugation, cell disruption, solvent extraction. Microbial production of industrial products - citric acid, ethanol and penicillin, Industrial production and uses of the enzymes - amylases, proteases.

**Unit 4 Food as a substrate for microbial growth**

**No. of Hours: 9**

Intrinsic and extrinsic parameters that affect microbial growth in food, Microbial spoilage of food - milk, egg, bread and canned foods

**Unit 5 Principles and methods of food preservation and food sanitation**

**No. of Hours: 9**

Physical methods - high temperature, low temperature, irradiation, aseptic packaging  
Chemical methods - salt, sugar, benzoates, citric acid, ethylene oxide, nitrate and nitrite  
Food sanitation and control – HACCP

**Unit 6 Dairy products, probiotics and Food-borne Diseases**

**No. of Hours: 12**

Fermented dairy products - yogurt, acidophilus milk, dahi and cheese, Probiotics definition, examples and benefits, Food intoxication by *Clostridium botulinum* and *Staphylococcus aureus*, Food infection by *Salmonella* and *E.coli*

MCBHGEC02P/ MCBGCOR02P (For General Students):

**INDUSTRIAL AND FOOD MICROBIOLOGY (PRACTICAL)**

**TOTAL HOURS: 60**

**CREDITS: 2**

1. Isolation of amylase producing bacteria from soil
2. Determination of the microbiological quality of milk sample by MBRT
3. Isolation of fungi from spoilt bread/fruits/vegetables
4. Preparation of Yogurt/Dahi

**SUGGESTED READING**

1. Crueger W and Crueger A. (2000). Biotechnology: A textbook of Industrial Microbiology. 2<sup>nd</sup> Edition. Panima Publishing Company, New Delhi
2. Patel AH. (1996). Industrial Microbiology .1st Edition. MacMillan India Limited Publishing Company Ltd. New Delhi, India
3. Tortora GJ, Funke BR, and Case CL. (2008). Microbiology: An introduction.9th Edition. Pearson Education

**MCBHGEC03T/ MCBGCOR03T (For General Students):**

**MICROBIAL GENETICS AND MOLECULAR BIOLOGY (THEORY)**

**TOTAL HOURS: 60**

**CREDITS: 4**

**Unit 1 Structures of DNA and RNA / Genetic Material      No. of Hours: 6**

DNA structure, Salient features of double helix, Types of DNA, denaturation and renaturation, topoisomerases; Organization of DNA in Prokaryotes.

**Unit 2 Replication of DNA      No. of Hours: 6**

Bidirectional and unidirectional replication, semi- conservative, semi- discontinuous replication Mechanism of DNA replication: Enzymes and proteins involved in DNA replication –DNA polymerases, DNA ligase, primase.

**Unit 3 Transcription      No. of Hours: 6**

Transcription: Definition, promoter - concept and strength of promoter. Transcriptional Machinery and Mechanism of transcription.

**Unit 4 Translation      No. of Hours: 6**

Genetic code, Translational machinery, Charging of tRNA, aminoacyl tRNA synthetases, Mechanisms of initiation, elongation and termination of polypeptides.

**Unit 5 Regulation of gene Expression      No. of Hours: 3**

Principles of transcriptional regulation, regulation at initiation with examples from *lac* operon.

**Unit 6 Mutations      No. of Hours: 8**

Mutations and mutagenesis: Definition and types of Mutations; Physical and chemical mutagens.

**Unit 7 Modes of Genetic Exchange in bacteria      No. of Hours: 10**

Transformation - Discovery, mechanism of natural competence Conjugation - Discovery, mechanism, Hfr and F' strains. Transduction - Generalized transduction, specialized transduction

**Unit 8 Introduction to genetic engineering      No. of Hours: 15**

Restriction modification systems: Type II restriction enzymes in genetic engineering, DNA modifying enzymes: DNA polymerases, Terminal deoxynucleotidyl transferase, kinases and phosphatases, and DNA ligases.

Cloning Vectors: Definition and Properties Plasmid vectors: pBR and pUC series

PCR: Basics of PCR.

**MCBHGEC03P/ MCBGCOR03P (For General Students):**

**MICROBIAL GENETICS & MOLECULAR BIOLOGY (PRACTICAL)**

**TOTAL HOURS: 60**

**CREDITS: 2**

1. Demonstration of transformation experiment in *E.coli*
2. Demonstration of Bacterial conjugation

**MCBHGEC04T/ MCBGCOR04T (For General Students):  
MEDICAL MICROBIOLOGY AND IMMUNOLOGY (THEORY)**

**TOTAL HOURS: 60**

**CREDITS: 4**

**Unit 1 Normal microflora of the human body and host pathogen interaction**

**No. of Hours: 10**

Normal microflora of the human body: Importance of normal microflora, normal microflora of skin, throat, gastrointestinal tract, urogenital tract, Host pathogen interaction: Definitions - Infection, Invasion, Pathogen, Pathogenicity, Virulence, Toxigenicity, Carriers and their types, Opportunistic infections, Nosocomial infections. Transmission of infection

**Unit 2 Bacterial diseases**

**No. of Hours: 4**

List of diseases of various organ systems and their causative agents. (Meningitis, tuberculosis, leprosy, cholera, diphtheria, whooping cough, tetanus)

**Unit 3 Viral diseases**

**No. of Hours: 3**

List of diseases of various organ systems and their causative agents. (polio, influenza, pox, mumps, measles, rubella)

**Unit 4 Protozoan diseases**

**No. of Hours: 2**

List of diseases of various organ systems and their causative agents.(Amoebic dysentery, malaria)

**Unit 5 Fungal diseases**

**No. of Hours: 3**

Brief description of various types of mycoses.

**Unit 6 Antimicrobial agents: General characteristics and mode of action**

**No. of Hours:10**

Antibacterial agents: Five modes of action with one example each: Inhibitor of nucleic acid synthesis; Inhibitor of cell wall synthesis; Inhibitor of cell membrane function; Inhibitor of protein synthesis; Inhibitor of metabolism, Antifungal agents: Amphotericin B, Griseofulvin, Antiviral agents: Amantadine, Acyclovir, Azidothymidine

**Unit 7 Immune Cells and Organs**

**No. of Hours: 8**

Structure, Functions and Properties of: Immune Cells – Stem cell, T cell, B cell, NK cell, Macrophage, Neutrophil, Eosinophil, Basophil, Mast cell, Dendritic cell; and Immune Organs – Bone Marrow, Thymus.

**Unit 8 Antigens and Antibodies**

**No. of Hours: 8**

Characteristics of an antigen (Foreignness, Molecular size and Heterogeneity); Haptens; Epitopes (T& B cell epitopes), Adjuvants, Structure, Types and Functions of antibodies.

**Unit 9 Generation of Immune Response**

**No. of Hours: 6**

Primary and Secondary Immune Response; Generation of Humoral Immune Response (Plasma and Memory cells); Generation of Cell Mediated Immune Response

**Unit 10 Immunological Techniques**

**No. of Hours: 6**

Principles of Precipitation, Agglutination, Immunodiffusion, Immunoelectrophoresis, ELISA



**MCBHGE04P/ MCBGCOR04P (For General Students):**  
**MEDICAL MICROBIOLOGY AND IMMUNOLOGY (PRACTICAL)**  
**TOTAL HOURS: 60** **CREDITS: 2**

1. Identify bacteria on the basis of biochemical characteristics: IMViC, nitrate reduction, urease production and catalase tests
2. Perform antibacterial sensitivity by Kirby-Bauer method
3. Identification of human blood groups.
4. To perform immunodiffusion by Ouchterlony method.

**SUGGESTED READING**

1. Ananthanarayan R. and Paniker C.K.J. (2009) Textbook of Microbiology. 8th edition, University Press Publication
2. Brooks G.F., Carroll K.C., Butel J.S., Morse S.A. and Mietzner, T.A. (2013) Jawetz, Melnick and Adelberg's Medical Microbiology. 26th edition. McGraw Hill Publication
3. Goering R., Dockrell H., Zuckerman M. and Wakelin D. (2007) Mims' Medical Microbiology. 4<sup>th</sup> edition. Elsevier
4. Willey JM, Sherwood LM, and Woolverton CJ. (2013) Prescott, Harley and Klein's Microbiology, 9th edition. McGraw Hill Higher Education

**WEST BENGAL STATE UNIVERSITY**  
**CBCS DRAFT SYLLABUS**  
**FOR**  
**THREE-YEAR MICROBIOLOGY GENERAL**  
**DEGREE COURSE OF STUDIES**

Distribution of courses in different semesters for Undergraduate course in **MICROBIOLOGY**

**GENERAL**

Semester	Core	DSE	GE	AECC	SEC	Total credit
I	MCBGCOR01T/P			Environmental Science		20
II	MCBGCOR02T/P			English/MIL Communication		20
III	MCBGCOR03T/P				MCBSSEC01M	20
IV	MCBGCOR04T/P				MCBSSEC02M	20
V		MCBGDSE01T/P MCBGDSE02T/P (Any one)			XSSEC03M	20
VI		MCBGDSE03T/P MCBGDSE04T/P (Any one)			XSSEC04M	20
Total number of courses	12	6	0	2	4	120

X – FROM OTHER DISCIPLINE

MCBGCOR01T(For General Students):

## **BACTERIOLOGY AND VIROLOGY (THEORY)**

**TOTAL HOURS: 60**

**CREDITS: 4**

### **Unit 1 Cell organization**

**No. of Hours: 10**

Cell size, shape and arrangements, capsule, flagella and pili, Composition and detailed structure of gram- positive and gram- negative cell wall. Structure, chemical composition and functions of bacterial cell membranes, Ribosomes, inclusions, nucleoid, plasmids, structure of endospore.

### **Unit 2 Bacterial growth and control**

**No. of Hours: 8**

Culture media: Components of media, Synthetic or defined media, Complex media, enriched media, selective media, differential media, enrichment culture media, Pure culture isolation: Streaking, serial dilution and plating methods, cultivation, maintenance and stocking of pure cultures, phases of growth

### **Unit 3 Bacterial Systematics and Taxonomy**

**No. of Hours: 8**

Taxonomy, nomenclature, systematics, types of classifications, Morphology, ecological significance and economic importance of Gram negative and Gram positive bacteria.

### **Unit 4 Introduction to Viruses**

**No. of Hours: 12**

Properties of viruses; general nature and important features Subviral particles; viroids, prions and their importance Isolation and cultivation of viruses

### **Unit 5 Structure, and multiplication of viruses**

**No. of Hours: 12**

Morphological characters: Capsid symmetry and different shapes of viruses with examples  
Viral multiplication in the Cell: Lytic and lysogenic cycle  
Description of important viruses: salient features of the viruses infecting different hosts - Bacteriophages (T4 & Lambda); Plant (TMV & Cauliflower Mosaic Virus), Human (HIV & Hepatitis viruses)

### **Unit 6 Role of Viruses in Disease and its prevention**

**No. of Hours: 10**

Viruses as pathogens: Role of viruses in causing diseases, Prevention and control of viruses: Viral vaccines, interferons and antiviral compounds

**MCBGCOR01P** (For General Students):

**BACTERIOLOGY AND VIROLOGY (PRACTICAL)**

**TOTAL HOURS: 60**

**CREDITS: 2**

1. Preparation of different media: Nutrient agar, Nutrient broth
2. To perform Gram's staining of the bacterial smear
3. To perform spore staining
4. Isolation of pure cultures of bacteria by streaking method
5. Enumeration of colony forming units (CFU) count by spread plate method/pour plate

**SUGGESTED READING**

1. Atlas RM. (1997). Principles of Microbiology. 2nd edition. WM.T.Brown Publishers
2. Madigan MT, Martinko JM, Dunlap PV and Clark DP (2014). Brock Biology of Microorganisms. 14th edition. Pearson Education, Inc.
3. Stanier RY, Ingraham JL, Wheelis ML and Painter PR. (2005). General Microbiology. 5th edition. McMillan
4. Carter J and Saunders V(2007). Virology; principles and Applications. John Wiley and Sons
5. Flint SJ, Enquist, LW, Krug, RM, Racaniello, VR Skalka, AM (2004) Principles of Virology, Molecular Biology, Pathogenesis and Control.2nd edition.ASM Press

**MCBGCOR02T(For General Students):**

**INDUSTRIAL & FOOD MICROBIOLOGY (THEORY)**

**TOTAL HOURS: 60**

**CREDITS: 4**

**Unit 1 Introduction to Industrial microbiology**

**No. of Hours: 10**

Types of fermentation processes - solid state, liquid state, batch, fed-batch and continuous, Types of fermenters – laboratory, pilot-scale and production fermenters, Components of a typical continuously stirred tank bioreactor

**Unit 2 Isolation of Industrial Strains and Fermentation Medium**

**No. of Hours: 8**

Primary and secondary screening, Preservation and maintenance of industrial strains, Ingredients used in fermentation medium - molasses, corn steep liquor, whey & Yeast extract

**Unit 3 Microbial fermentation processes**

**No. of Hours: 12**

Downstream processing - filtration, centrifugation, cell disruption, solvent extraction. Microbial production of industrial products - citric acid, ethanol and penicillin, Industrial production and uses of the enzymes - amylases, proteases.

**Unit 4 Food as a substrate for microbial growth**

**No. of Hours: 9**

Intrinsic and extrinsic parameters that affect microbial growth in food, Microbial spoilage of food - milk, egg, bread and canned foods

**Unit 5 Principles and methods of food preservation and food sanitation**

**No. of Hours: 9**

Physical methods - high temperature, low temperature, irradiation, aseptic packaging  
Chemical methods - salt, sugar, benzoates, citric acid, ethylene oxide, nitrate and nitrite  
Food sanitation and control – HACCP

**Unit 6 Dairy products, probiotics and Food-borne Diseases**

**No. of Hours: 12**

Fermented dairy products - yogurt, acidophilus milk, dahi and cheese, Probiotics definition, examples and benefits, Food intoxication by *Clostridium botulinum* and *Staphylococcus aureus*, Food infection by *Salmonella* and *E.coli*

**MCBGCOR02P (For General Students):**

**INDUSTRIAL AND FOOD MICROBIOLOGY (PRACTICAL)**

**TOTAL HOURS: 60**

**CREDITS: 2**

1. Isolation of amylase producing bacteria from soil
2. Determination of the microbiological quality of milk sample by MBRT
3. Isolation of fungi from spoilt bread/fruits/vegetables
4. Preparation of Yogurt/Dahi

**SUGGESTED READING**

1. Crueger W and Crueger A. (2000). Biotechnology: A textbook of Industrial Microbiology. 2<sup>nd</sup> Edition. Panima Publishing Company, New Delhi
2. Patel AH. (1996). Industrial Microbiology .1st Edition. MacMillan India Limited Publishing Company Ltd. New Delhi, India
3. Tortora GJ, Funke BR, and Case CL. (2008). Microbiology: An introduction.9th Edition. Pearson Education

**MCBGCOR03T (For General Students):**

**MICROBIAL GENETICS AND MOLECULAR BIOLOGY (THEORY)**

**TOTAL HOURS: 60**

**CREDITS: 4**

**Unit 1 Structures of DNA and RNA / Genetic Material      No. of Hours: 6**

DNA structure, Salient features of double helix, Types of DNA, denaturation and renaturation, topoisomerases; Organization of DNA in Prokaryotes.

**Unit 2 Replication of DNA      No. of Hours: 6**

Bidirectional and unidirectional replication, semi- conservative, semi- discontinuous replication Mechanism of DNA replication: Enzymes and proteins involved in DNA replication –DNA polymerases, DNA ligase, primase.

**Unit 3 Transcription      No. of Hours: 6**

Transcription: Definition, promoter - concept and strength of promoter. Transcriptional Machinery and Mechanism of transcription.

**Unit 4 Translation      No. of Hours: 6**

Genetic code, Translational machinery, Charging of tRNA, aminoacyl tRNA synthetases, Mechanisms of initiation, elongation and termination of polypeptides.

**Unit 5 Regulation of gene Expression      No. of Hours: 3**

Principles of transcriptional regulation, regulation at initiation with examples from *lac* operon.

**Unit 6 Mutations      No. of Hours: 8**

Mutations and mutagenesis: Definition and types of Mutations; Physical and chemical mutagens.

**Unit 7 Modes of Genetic Exchange in bacteria      No. of Hours: 10**

Transformation - Discovery, mechanism of natural competence Conjugation - Discovery, mechanism, Hfr and F' strains. Transduction - Generalized transduction, specialized transduction

**Unit 8 Introduction to genetic engineering      No. of Hours: 15**

Restriction modification systems: Type II restriction enzymes in genetic engineering, DNA modifying enzymes: DNA polymerases, Terminal deoxynucleotidyl transferase, kinases and phosphatases, and DNA ligases.

Cloning Vectors: Definition and Properties Plasmid vectors: pBR and pUC series

PCR: Basics of PCR.

**MCBGCOR03P (For General Students):**

**MICROBIAL GENETICS & MOLECULAR BIOLOGY (PRACTICAL)**

**TOTAL HOURS: 60**

**CREDITS: 2**

1. Demonstration of transformation experiment in *E.coli*
2. Demonstration of Bacterial conjugation

**MCBGCOR04T (For General Students):  
MEDICAL MICROBIOLOGY AND IMMUNOLOGY (THEORY)**

**TOTAL HOURS: 60**

**CREDITS: 4**

**Unit 1 Normal microflora of the human body and host pathogen interaction**

**No. of Hours: 10**

Normal microflora of the human body: Importance of normal microflora, normal microflora of skin, throat, gastrointestinal tract, urogenital tract, Host pathogen interaction: Definitions - Infection, Invasion, Pathogen, Pathogenicity, Virulence, Toxigenicity, Carriers and their types, Opportunistic infections, Nosocomial infections. Transmission of infection

**Unit 2 Bacterial diseases**

**No. of Hours: 4**

List of diseases of various organ systems and their causative agents. (Meningitis, tuberculosis, leprosy, cholera, diphtheria, whooping cough, tetanus)

**Unit 3 Viral diseases**

**No. of Hours: 3**

List of diseases of various organ systems and their causative agents. (polio, influenza, pox, mumps, measles, rubella)

**Unit 4 Protozoan diseases**

**No. of Hours: 2**

List of diseases of various organ systems and their causative agents. (Amoebic dysentery, malaria)

**Unit 5 Fungal diseases**

**No. of Hours: 3**

Brief description of various types of mycoses.

**Unit 6 Antimicrobial agents: General characteristics and mode of action**

**No. of Hours: 10**

Antibacterial agents: Five modes of action with one example each: Inhibitor of nucleic acid synthesis; Inhibitor of cell wall synthesis; Inhibitor of cell membrane function; Inhibitor of protein synthesis; Inhibitor of metabolism, Antifungal agents: Amphotericin B, Griseofulvin, Antiviral agents: Amantadine, Acyclovir, Azidothymidine

**Unit 7 Immune Cells and Organs**

**No. of Hours: 8**

Structure, Functions and Properties of: Immune Cells – Stem cell, T cell, B cell, NK cell, Macrophage, Neutrophil, Eosinophil, Basophil, Mast cell, Dendritic cell; and Immune Organs – Bone Marrow, Thymus.

**Unit 8 Antigens and Antibodies**

**No. of Hours: 8**

Characteristics of an antigen (Foreignness, Molecular size and Heterogeneity); Haptens; Epitopes (T& B cell epitopes), Adjuvants, Structure, Types and Functions of antibodies.

**Unit 9 Generation of Immune Response**

**No. of Hours: 6**

Primary and Secondary Immune Response; Generation of Humoral Immune Response (Plasma and Memory cells); Generation of Cell Mediated Immune Response

**Unit 10 Immunological Techniques**

**No. of Hours: 6**

Principles of Precipitation, Agglutination, Immunodiffusion, Immuno-electrophoresis, ELISA



**MCBGCOR04P (For General Students):**

**MEDICAL MICROBIOLOGY AND IMMUNOLOGY (PRACTICAL)**  
**TOTAL HOURS: 60** **CREDITS: 2**

1. Identify bacteria on the basis of biochemical characteristics: IMViC, nitrate reduction, urease production and catalase tests
2. Perform antibacterial sensitivity by Kirby-Bauer method
3. Identification of human blood groups.
4. To perform immunodiffusion by Ouchterlony method.

**SUGGESTED READING**

1. Ananthanarayan R. and Paniker C.K.J. (2009) Textbook of Microbiology. 8th edition, University Press Publication
2. Brooks G.F., Carroll K.C., Butel J.S., Morse S.A. and Mietzner, T.A. (2013) Jawetz, Melnick and Adelberg's Medical Microbiology. 26th edition. McGraw Hill Publication
3. Goering R., Dockrell H., Zuckerman M. and Wakelin D. (2007) Mims' Medical Microbiology. 4<sup>th</sup> edition. Elsevier
4. Willey JM, Sherwood LM, and Woolverton CJ. (2013) Prescott, Harley and Klein's Microbiology, 9th edition. McGraw Hill Higher Education

**DSE FOR B.Sc. GENERAL PROGRAMME:**

**MCBGDSE01T: INSTRUMENTATION AND BIOTECHNIQUES  
(THEORY)**

**TOTAL HOURS: 60**

**CREDITS: 4**

**Unit 1 Microscopy**

**No. of Hours: 10**

Brightfield and darkfield microscopy, Fluorescence Microscopy, Phase contrast Microscopy, Confocal Microscopy, Electron Microscopy (Scanning and Transmission Electron Microscopy).

**Unit 2 Chromatography**

**No. of Hours: 14**

Principles and applications of paper chromatography (including Descending and 2-D), Thin layer chromatography. Column packing and fraction collection, Gel filtration chromatography, ion- exchange chromatography and affinity chromatography, GLC, HPLC.

**Unit 3 Electrophoresis**

**No. of Hours: 14**

Principle and applications of native polyacrylamide gel electrophoresis, SDS-polyacrylamide gel electrophoresis, 2D gel electrophoresis, Isoelectric focusing, Zymogram preparation and Agarose gel electrophoresis.

**Unit 4 Spectrophotometry**

**No. of Hours: 10**

Principle and use of study of absorption spectra of biomolecules, Analysis of biomolecules using UV and visible range, Colorimetry and turbidometry

### **Unit 5 Centrifugation**

**No. of Hours: 12**

Preparative and analytical centrifugation, fixed angle and swinging bucket rotors. RCF and sedimentation coefficient, differential centrifugation, density gradient centrifugation and ultracentrifugation

## **MCBGDSE01P : INSTRUMENTATION AND BIOTECHNIQUES (PRACTICAL)**

**TOTAL HOURS: 60**

**CREDITS: 2**

1. Separation of amino acid mixtures by thin layer chromatography.
2. Separation of protein mixtures by any form of chromatography.
3. Separation of protein mixtures by Polyacrylamide Gel Electrophoresis (PAGE).
4. Determination of  $\lambda_{\text{max}}$  for an unknown sample and calculation of extinction coefficient.
5. Separation of components of a given mixture using a laboratory scale centrifuge.

### **SUGGESTED READINGS**

1. Wilson K and Walker J. (2010). Principles and Techniques of Biochemistry and Molecular Biology. 7<sup>th</sup> Ed., Cambridge University Press.
2. Nelson DL and Cox MM. (2008). Lehninger Principles of Biochemistry, 5<sup>th</sup> Ed., W.H. Freeman and Company.
3. Willey MJ, Sherwood LM & Woolverton C J. (2013). Prescott, Harley and Klein's Microbiology. 9<sup>th</sup> Ed., McGraw Hill.
4. Karp G. (2010) Cell and Molecular Biology: Concepts and Experiments. 6th edition. John Wiley & Sons. Inc.
5. De Robertis EDP and De Robertis EMF. (2006). Cell and Molecular Biology. 8th edition. Lipincott Williams and Wilkins, Philadelphia.
6. Cooper G.M. and Hausman R.E. (2009). The Cell: A Molecular Approach. 5<sup>th</sup> Edition. ASM Press & Sunderland, Washington D.C., Sinauer Associates, MA.
7. Nigam A and Ayyagari A. 2007. Lab Manual in Biochemistry, Immunology and Biotechnology. Tata McGraw Hill.

**MCBGDSE02T: INHERITANCE BIOLOGY  
(THEORY)**

**TOTAL HOURS: 60**

**CREDITS: 4**

**Unit 1 Introduction to Genetics**

**No. of Hours: 5**

Historical development, Model organisms in genetic analyses and experimentation: *Escherichia coli*, *Saccharomyces cerevisiae*, *Drosophila melanogaster*, *Arabidopsis thaliana*

**Unit 2 Mendelian Principles**

**No. of Hours: 13**

Mendel's Laws: Dominance, segregation, independent assortment, deviation from Mendelian inheritance, Rediscovery of Mendel's principles, Chromosome theory of inheritance: Allele, multiple alleles, pseudoallele, complementation tests, Extensions of Mendelian genetics: Allelic interactions, concept of dominance, recessiveness, Incomplete dominance and co-dominance.

**Unit 3 Linkage and Crossing over**

**No. of Hours: 6**

Linkage and recombination of genes, Cytological basis of crossing over.

**Unit 4 Extra-Chromosomal Inheritance**

**No. of Hours: 9**

Extra nuclear inheritance in bacteria: Plasmid and episome, Organelle heredity – Chloroplast, Mitochondria,

**Unit 5 Characteristics of Chromosomes**

**No. of Hours: 8**

Structural organization of chromosomes - centromeres, telomeres and repetitive DNA, Packaging DNA molecules into chromosomes, Concept of euchromatin and heterochromatin, Chromosome banding, Giant chromosomes: Polytene and lampbrush chromosomes,

**Unit 6 Recombination**

**No. of Hours: 7**

Homologous and non-homologous recombination, including transposition, site-specific recombination.

**Unit 7 Human genetics**

**No. of Hours: 12**

Karyotyping and genetic disorders: Variations in chromosome structure: Deletion, duplication, inversion and translocation, Variation in chromosomal number and structural abnormalities - Klinefelter syndrome, Turner syndrome, Down syndrome.

**MCBGDSE02P: INHERITANCE BIOLOGY (PRACTICAL)**

**TOTAL HOURS: 60**

**CREDITS: 2**

1. Chi-Square Analysis of Mendelian monohybrid/dihybrid cross
2. Study of polytene chromosomes using temporary mounts of salivary glands of *Chiromonas / Drosophila* larvae

**SUGGESTED READING**

1. Gardner EJ, Simmons MJ, Snustad DP (2008). Principles of Genetics. 8th Ed. Wiley-India
2. Snustad DP, Simmons MJ (2011). Principles of Genetics. 6th Ed. John Wiley and Sons Inc.
3. Weaver RF, Hedrick PW (1997). Genetics. 3rd Ed. McGraw-Hill Education

4. Klug WS, Cummings MR, Spencer CA, Palladino M (2012). Concepts of Genetics. 10th Ed. Benjamin Cummings
5. Griffith AJF, Wessler SR, Lewontin RC, Carroll SB. (2007). Introduction to Genetic Analysis. 9<sup>th</sup> Ed. W.H.Freeman and Co., New York
6. Hartl DL, Jones EW (2009). Genetics: Analysis of Genes and Genomes. 7th Ed, Jones and Bartlett Publishers
7. Russell PJ. (2009). *i* Genetics - A Molecular Approach. 3rd Ed, Benjamin Cummings

**MCBGDSE03T: MICROBES IN SUSTAINABLE AGRICULTURE AND DEVELOPMENT (THEORY)**

**TOTAL HOURS: 60**

**CREDITS: 4**

**Unit 1 Soil Microbiology**

**No of Hours: 9**

Soil as Microbial Habitat, Soil profile and properties, Soil formation, Diversity and distribution of microorganisms in soil

**Unit 2 Microbial Activity in Soil and Green House Gases**

**No of Hours: 6**

Carbon dioxide, methane, nitrous oxide, nitric oxide – production and control

**Unit 3 Microbial Control of Soil Borne Plant Pathogens**

**No of Hours: 9**

Biocontrol mechanisms and ways, Microorganisms used as biocontrol agents against Microbial plant pathogens, Insects.

**Unit 4 Biofertilization, Phytostimulation, Bioinsecticides**

**No of Hours: 16**

Plant growth promoting bacteria, biofertilizers – symbiotic (*Bradyrhizobium*, *Rhizobium*, *Frankia*), Non Symbiotic (*Azospirillum*, *Azotobacter*, Mycorrhizae), Phosphate solubilizers.

**Unit 5 Secondary Agriculture Biotechnology**

**No of Hours: 12**

Biomanure, biogas, biofuels – general concepts and advantages

**Unit 6 Genetically Modified crops**

**No of Hours: 8**

Bt crops, golden rice, transgenic animals, advantages, social and environmental aspects.

**MCBGDSE03P: MICROBES IN SUSTAINABLE AGRICULTURE AND DEVELOPMENT (PRACTICAL)**

**TOTAL HOURS: 60**

**CREDITS: 2**

1. Study of microflora of rhizospheric soil different types of soils
2. Isolation and characterization of phosphate solubilizing bacteria from soil
3. Isolation and characterization of Nitrogen fixing bacteria from soil
4. Isolation of *Rhizobium* from root nodules
5. Soil dehydrogenase assay

## **SUGGESTED READINGS**

1. Agrios GN. (2006). Plant Pathology. 5th edition. Academic press, San Diego,
2. Singh RS. (1998). Plant Diseases Management. 7th edition. Oxford & IBH, New Delhi.
3. Glick BR, Pasternak JJ, and Patten CL (2010) Molecular Biotechnology 4<sup>th</sup> edition, ASM Press,
4. Atlas RM and Bartha R. (2000). Microbial Ecology: Fundamentals & Applications. 4th edition. Benjamin/Cummings Science Publishing, USA
5. Maier RM, Pepper IL and Gerba CP. (2009). Environmental Microbiology. 2nd edition, Academic Press
6. Barton LL & Northup DE (2011). Microbial Ecology. 1st edition, Wiley Blackwell, USA
7. Campbell RE. (1983). Microbial Ecology. Blackwell Scientific Publication, Oxford, England.
8. Coyne MS. (2001). Soil Microbiology: An Exploratory Approach. Delmar Thomson Learning.
9. Altman A (1998). Agriculture Biotechnology, 1st edition, Marcel decker Inc.
10. Mahendra K. Rai (2005). Hand Book of Microbial Biofertilizers, The Haworth Press, Inc. New York.
11. Reddy, S.M. et. al. (2002). Bioinoculants for Sustainable Agriculture and Forestry, Scientific Publishers.
12. Saleem F and Shakoori AR (2012) Development of Bioinsecticide, Lap Lambert Academic Publishing GmbH KG

## **MCBGDSE04T: BIOSAFETY AND INTELLECTUAL PROPERTY RIGHTS (THEORY)**

**TOTAL HOURS: 60**

**CREDITS: 4**

### **Unit 1**

**No of Hours: 16**

Concept of IPR, Designs, trademarks, trade secrets, domain names, geographical indications, copyright, Evolution of patent laws, history of Indian patent system, Agreements and Treaties: GATT, TRIPS Agreements; Role of Madrid Agreement; Hague Agreement;

WIPO Treaties; Budapest Treaty on international recognition of the deposit of microorganisms;

UPOV & Brene conventions; Patent Co-operation Treaty (PCT); Indian Patent Act 1970 & recent

amendments. Classification of patents in India,

### **Unit 2**

**No of Hours: 12**

classification of patents by WIPO, categories of patent, special patents, patenting biological products, Patentable inventions in India and abroad, non patentable inventions in India and abroad, Rights of patent holder and co-owners, transfer of patent rights, limitations of patent rights.

### **Unit 3**

**No of Hours: 12**

Overview of biosafety, risk assessment, Cartagena protocol on biosafety, capacity building, GMOs Transgenic technology, future opportunities and challenges, Regulatory measures for biosafety, biosafety guidelines in India evolved by DBT.

### **Unit 4**

**No of Hours: 12**

Prevention food adulteration act, food and safety standard bill and seed policy, rules for the manufacture and storage of hazardous, biosafety management, Some of the products development from RDT and their biosafety issues, biosafety and Gene therapy, ecological safety assessment of recombinant organisms

### **Unit 5**

**No of Hours: 8**

Bioethics and its scope, different approaches to ethics, biological weapons and their social and ethical implications, Importance of good laboratory practices, general good laboratory practices

**MCBGDSE04P: BIOSAFETY AND INTELLECTUAL PROPERTY RIGHTS  
(PRACTICAL)**

**TOTAL HOURS: 60**

**CREDITS: 2**

Standardization of contamination free environment in laboratory practices. Biochemical and Microbiological analysis of Foods. Food adulteration and its Testing / Analysis

**Suggested Reading**

1. Bare Act, 2007. Indian Patent Act 1970 Acts & Rules, Universal Law Publishing Co. Pvt. Ltd., New Delhi.
2. Goel D & Prashar S (2013). IPR, Biosafety and Bioethics. Pearson

**SEC COURSES FOR B.SC GENERAL PROGRAMME IN MICROBIOLOGY**

**MCBSSEC01M: FOOD  
FERMENTATION  
TECHNIQUES**

**TOTAL HOURS: 30  
CREDITS: 2**

<b>Unit 1 Fermented Foods</b>	<b>No of Hours: 4</b>
Definition, types, advantages and health benefits	
<b>Unit 2 Milk Based Fermented Foods</b>	<b>No of Hours: 8</b>
Dahi, Yogurt, Buttermilk (Chach) and cheese: Preparation of inoculums, types of microorganisms and production process	
<b>Unit 3 Grain Based Fermented Foods</b>	<b>No of Hours: 6</b>
Soy sauce, Bread, Idli and Dosa: Microorganisms and production process	
<b>Unit 4 Vegetable Based Fermented Foods</b>	<b>No of Hours: 4</b>
Pickels, Saeurkraut: Microorganisms and production process	
<b>Unit 5 Fermented Meat and Fish</b>	<b>No of Hours: 4</b>
Types, microorganisms involved, fermentation process	

## **Unit 6 Probiotic Foods**

**No of Hours: 4**

Definition, types, microorganisms and health benefits

### **Suggested Readings**

1. Hui YH, Meunier-Goddik L, Josephsen J, Nip WK, Stanfield PS (2004) Handbook of food and fermentation technology, CRC Press
2. Holzapfel W (2014) Advances in Fermented Foods and Beverages, Woodhead Publishing.
3. Yadav JS, Grover, S and Batish VK (1993) A comprehensive dairy microbiology, Metropolitan
4. Jay JM, Loessner MJ, Golden DA (2005) Modern Food Microbiology, 7th edition. Springer

## **MCBSSEC02M: MICROBIOLOGICAL ANALYSIS OF AIR AND WATER**

**TOTAL HOURS: 30**

**CREDITS: 2**

### **Unit 1 Aeromicrobiology**

**No of Hours: 4**

Bioaerosols, Air borne microorganisms (bacteria, Viruses, fungi) and their impact on human health and environment, significance in food and pharma industries and operation theatres, allergens

### **Unit 2 Air Sample Collection and Analysis**

**No of Hours: 7**

Bioaerosol sampling, air samplers, methods of analysis, CFU, culture media for bacteria and fungi, Identification characteristics

### **Unit 3 Control Measures**

**No of Hours: 4**

Fate of bioaerosols, inactivation mechanisms – UV light, HEPA filters, desiccation, Incineration

### **Unit 4 Water Microbiology**

**No of Hours: 4**

Water borne pathogens, water borne diseases

### **Unit 5 Microbiological Analysis of Water**

**No of Hours: 7**

Sample Collection, Treatment and safety of drinking (potable) water, methods to detect potability of water samples: (a) standard qualitative procedure: presumptive/MPN tests, confirmed and completed tests for faecal coliforms (b) Membrane filter technique and (c) Presence/absence tests

### **Unit 6 Control Measures**

**No of Hours: 4**

Precipitation, chemical disinfection, filtration, high temperature, UV light

### **Suggested Reading**

1. da Silva N, Taniwaki MH, Junqueira VC, Silveira N, Nascimento MS, Gomes RAR (2012) Microbiological Examination Methods of Food and Water A Laboratory Manual, CRC Press



2. Atlas RM and Bartha R. (2000). Microbial Ecology: Fundamentals & Applications.  
4<sup>th</sup> edition. Benjamin/Cummings Science Publishing, USA
3. Maier RM, Pepper IL and Gerba CP. (2009). Environmental Microbiology. 2<sup>nd</sup> edition, Academic Press
4. Hurst CJ, Crawford RL, Garland JL, Lipson DA (2007) Manual of Environmental Microbiology, 3<sup>rd</sup> edition, ASM press edition, ASM press



**WEST BENGAL STATE UNIVERSITY**  
**DEPARTMENT OF PHILOSOPHY**

**SYLLABUS FOR**  
**HONOURS**  
**&**  
**UNDERGRADUATE PROGRAMME**  
**UNDER**  
**CHOICE BASED CREDIT SYSTEM [CBCS]**

Finalised by the UG BOS, Philosophy, WBSU, in the BOS Meeting held on 18.07.2018 following the guidelines of UGC, the guidelines suggested by the University and the observations and suggestions of the teachers from UG Colleges affiliated to WBSU. This Curriculum for Philosophy will effect from the academic session 2018-19.

## **B.A. Honours in Philosophy-Total Credit-140**

### **I. Core Course**

**PHIACOR01T-PHIACOR14T [14x6=84 Credit]**

14 Papers each carrying 5 Credits and 14 Tutorials each carrying 1 Credit.

One Credit=1 class/week.

Total 75 hours Lecture and 15 hours Tutorial per Course or Module

Tutorial- One Tutorial per Course per Week

---

### **Semester –I**

#### **PHIACOR01T [History of Western Philosophy - I]**

- A. Basic concepts of pre-Socratic philosophy [In brief]: 10 Lectures  
Cosmology-origin (Ionian)  
Being and change (Eliatics)  
Process philosophy (Heraclitus)  
The Sophists
- B. Plato and Aristotle: 10 Lectures  
Plato's Theory of knowledge (*Episteme*) and Opinion (*Doxa*) and its refutation by Aristotle.  
Plato's theory of Idea, Aristotle's refutation,  
Aristotle: Form and Matter
- C. Medieval Philosophy: 10 Lectures  
Reason, Faith [**In brief**], God---Augustine, Aquinas
- D. Descartes, Spinoza, Leibnitz 45 Lectures  
Descartes---Method of Doubt, *Cogito*, Different Types of Ideas, Criterion of Truth, Theory of knowledge, Theory of Substance.  
Spinoza---Substance, Attributes and Modes, Existence of God, Pantheism, Theory of knowledge  
Leibnitz--- Innate Idea, Monad, Truths of Reason, Truths of Fact, Pre-established Harmony.

## PHIACOR02T [Western Logic-I]

1. Basic concepts---Propositions, Propositional form, Argument and Argument form, Truth functional connectives, Truth and Validity. 5
2. An overview of Traditional Laws of Logic, Boolean interpretation of Categorical Propositions and consequences, Syllogism, Venn Diagram. 15
3. Propositional Logic: 55
  - i. The Method of Truth Table and Truth Tree as decision procedures:
    - a. Statement forms and Statements---Tautologous, Contradictory and Contingent by Truth Table and Truth Tree method;
    - b. Consistency by Truth Tree method;
    - c. Validity determination by Truth Table method and Truth Value Assignment method.
  - ii. Method of Deduction ---Construction of formal proof of validity by using 19 Rules, I.P. and C.P.
  - iii. Invalidity by Shorter Truth Table method.

## Semester-II

### PHIACOR03T: Outlines of Indian Philosophy-I

1. Basic concepts in Indian Philosophy:  
*Rta, ṛna, Jaiña, pañca-kośa, Ātman, Brahman, jīva, sreyaś, preya, mokṣa* (In brief) 8
2. *Nāstika* Schools:
  - i. *Cārvāka*  
Epistemology—Perception as the only source of Knowledge, Refutation of Inference  
Metaphysics---Causality---*yadricchāvāda/svabhāvavāda/ākasmikatāvāda, jagat and bhūtacaitanyavāda.* 6
  - ii. *Bauddha*---Four noble truths, *pratīyasamutpādavāda, kṣṇabhāṅgavāda, nairātmyavāda,* Basic tenets of four Bauddha schools (In brief). 15
  - iii. *Jaina*--- Concepts of *jīva, ajīva, dravya, guṇa, paryāya, anekāntavada, syādvāda* 10
2. *Āstika* School 36  
*Nyāya* system:  
Four *Pramāṇas*:  
*Pratyakṣa pramāṇa: lakṣaṇa*, classification into *nirvikalpaka* and *savikalpaka* (including *pratyabhijñā*) and *laukika* and *alaukika*.  
  
*Anumāna pramāṇa:*  
*Lakṣaṇa, pakṣa, sādhyā, hetu, vyāpti, vyāptigrahopāya, svārtha and parārthānumana.*  
  
Outlines of *upamāna pramāṇa* and *śabda pramāṇa*.  
*Vaiśeṣika* System:  
The Basic outlines of *dravya, guṇa, karma* and detailed analysis of *sāmānya, viśeṣa, samavāya* and *abhāva. paramāṇuvāda.*

## PHIACOR04T [Western Logic-II]

### A. Quantification:

Need for Quantification Theory, Singular Propositions, Quantifiers, Translating Traditional Subject— Predicate Proposition into Logical Notation of Propositional Function and Quantifier, Predicate and Predicate functions, Individual Constant and Individual Variable. Quantification Rules and Proving Validity, Proving Invalidity for Arguments Involving Quantifiers. 45

### B. Induction:

Mill's Method [In brief] and Copi's Criticism 6

C. Induction per simple enumeration, Analogical Inference

### D. Criteria of Scientific Hypothesis

C and D =6

#### E. Probability:

Alternative Conceptions of Probability, the Probability Calculus, Joint Occurrences and Alternative Occurrences. 18

## Semester-III

## PHIACOR05T [History of Western Philosophy-II]

### A. Empiricism:

50

Locke---Ideas and their classifications, Refutation of Innate Ideas, Substance, Locke's Realism and theory of knowledge, Primary and Secondary Qualities

Berkeley---Rejection of Abstract Ideas, Rejection of the distinction between Primary and Secondary Qualities, *esse est percipi*, Idealism

Hume---Impression and Ideas, Association of Ideas, Judgement concerning relations of Ideas and matters of fact, Causality and Scepticism

### B. Kant:

25

Conception of Critical Philosophy, Possibility of Metaphysics, Copernican Revolution, Distinction between *a priori* and *a posteriori*, Distinction between Analytic and Synthetic Judgement, Possibility of Synthetic *a priori* Judgement, Space and Time, Transcendental Idealism, Noumena and Phenomena.

## PHIACOR06T [Outlines of Indian Philosophy-II]

### A. Saṅkhya System:-

*Duhkha- traya*, *Satkāryavāda* as opposed to *Asatkāryavāda*, arguments in favour of *Satkāryavāda*, *Prakṛti*- Its Constituents and Evolutes, Arguments for the existence of *Prakṛti*, *Puruṣa*-Arguments for its existence, Plurality of *Puruṣa*, Liberation. 20

### B. Yoga System:

- Citta, Cittabhūmi, Cittavṛtti, Cittavṛtti -nirodha, Aṣṭāṅgayoga, Concept of Īsvara.* 15
- C. *Mīmāṃsā* System:  
*Pramāṇas* in brief and *Arthāpatti* and *Anupalabdhi* in detail. (*Prābhākara* and *Bhāṭṭa* view). 10
- D. *Advaita Vedānta* Philosophy of *Śaṅkara*:  
*Sattvatraividhyavada, Vivartavada, Brahman, Relation of Brahman with Jīva and Jagat, Doctrine of Māyā.*  
 20
- E. *Ramānuja*:  
*Brahman, Jīva, Jagat, Prapatti, Refutation of Śaṅkara's theory of Māyā* 10

### PHIACOR07T [Western Ethics]

- A. Introduction to Ethics---Definition, Scope, Presuppositions, Basic concepts of morality, moral problems, moral action. Object of moral judgment. 8
- B. Different types of ethical theories---Descriptivism vs Normativism and Prescriptivism; Deontologism\*, Teleologism\*\*, Naturalism, Naturalistic fallacy. 30
- A. \*Deontologism-- with special reference to Kant. [Good will, good will and duty, Categorical Imperative, Duty for Duty's sake, Kingdom of Ends.] 12
- B. \*\*Teleologism --Hedonism, Utilitarianism and its different types (with special reference to Mill and Bentham) ---Act, Rule [basic concepts only]. 20
- C. Theories of Punishment. 5

### Semester-IV

#### PHIACOR08T [Social and Political Philosophy-Western]

- A. Concept of Social Philosophy and Political Philosophy  
 Relation and difference: Social and Political Philosophy on the one hand and Sociology and Political Science on the other. 4
- B. Basic concepts:  
 Society, Community, Association, Institution, Caste and Class, Social groups. 20
- C. Social Change:  
 The Marxist view and the Gandhian view. 7
- D. Family:

- i. The Marxist interpretation of Family. 14
- ii. Sex gender divide, Patriarchy and the Feminist interpretation of Family.
- iii. The Marxist -Feminist Debate. 14
- E. Political Ideals:  
Government: Democracy and its different forms [Direct, Indirect, Parliamentary and Presidential] 10
- F. Socialism and its varieties:  
Utopian, Democratic, Scientific 15
- G. Separation of Power:  
Three wings of the Government---Legislature, Executive and Judiciary (with special reference to Montesquieu) 5

#### **PHIACOR09T [Psychology and Philosophy of Mind]**

- A. Relation between Philosophy of Mind, Psychology and Philosophy of Psychology. 5
- B. Psychology as science. 2
- C. Associationism:  
Perception and Learning, Gestalt theory of Perception and Learning 10
- D. Methods of Psychology:  
Introspection, Extrospection and Experimental 8
- E. Freud's Theory:  
Conscious and Unconscious, Id, Ego and Super Ego 10
- F. Dualism, its types. 2
- G. General discussion on Behaviourism---Methodological and Philosophical. 4
- H. The Relation between body and Mind: Parallelism, Interactionism, Bundle theory, Double Aspect theory, Occasionalism, Emergentism, and Epiphenomenalism. 20

#### **PHIACOR10T [Classical Indian Text]**

Text: Annambhaṭṭa's *Tarkasaṃgrahaḥ* with *Dīpikā tika* (From *buddhi* up to *upamānakhandam*) 75

#### **Semester-V**

#### **PHIACOR11T [Philosophy of Language---Indian and Western]**

- A. Indian Philosophy of Language:  
Text: *Annambhaṭṭa's Tarkasaṃgrahaḥ* with *Dīpikā tika-Śabdakhandam* 35

B. Western Philosophy of Language: Hospers---Word, Meaning, Ambiguity, Vagueness P. Alston- Speech acts.	40
--	----

### PHIACOR12T [Ethical and Social Philosophy of India]

A. Introduction: Special features of Indian Ethics as opposed to Western Ethics	6
B. Basic Concepts with social significance in <i>BhagavatGītā</i> : Karmayoga, Sthitaprajña, Yogaksema and Lokasamgraha	16
C. <i>Puruṣārtha</i> ---Concept of the four <i>Puruṣārthas</i> and their interrelation	6
D. <i>Sukhavāda</i> ---Cārvāka	
E. <i>Dharma</i> : Definition, <i>Sādhāraṇadharmā</i> , <i>Viśeṣadharmā</i> , <i>Varṇadharmā</i> , <i>Āśramadharmā</i> , <i>Svadharmā</i>	20
F. <i>Karma</i> : <i>Nitya</i> , <i>Naimittika</i> , <i>Kāmya</i> , <i>Niṣkāma</i> , <i>Sancita</i> , <i>Sanciyaman</i> and <i>prarabdha</i> .	10
G. Concepts of <i>Pañcaśīla</i> , <i>Brahmavihāra</i> , <i>Anuvrata</i> , <i>Mahāvratā</i> , and <i>Ahimsā</i> .	15

### Semester-VI

#### PHIACOR13T [Western Epistemology & Metaphysics]

A. Knowledge---Definition, components, types of Knowledge: Knowing that, Knowing how, Knowledge by Acquaintance, Knowledge by description.	15
B. Theories of Truth---Correspondence theory, Coherentism, Pragmatism	15
C. The problem of Induction.	08
D. On what there is: Realism, Idealism, and Phenomenalism	15
E. The Problem of Universals: Realism, Conceptualism and Nominalism	12
F. The Causal Principle, the Entailment Theory of Causation, the Regularity Theory of Causation.	10

#### PHIACOR14T [Some Modern Indian Thinkers]

A. Vivekananda---Practical Vedanta, Karma-yoga, Unification of Religions.	15
B. Gandhi--- <i>Sarvodaya</i> , Non-Violence and Trusteeship, Caste.	25
C. Aurobindo---Evolution and Involution.	10
D. Ambedkar---Caste: Equality and Fraternity.	25

#### Distribution of modules of Core Course [Hons.]:

Semester	Modules
I, II, V and VI	2 in each semester
III and IV	3 in each semester



## II. Elective Course

### Discipline Specific Elective (DSE)

[4 Papers each carrying 6 (5 Credit for lecture and 1 credit for tutorial) credit= (6X4)  
=24 credit.

Total 75 hours Lecture and 15 hours Tutorial

### Semester- V

[Candidates have to choose any Two from the following Courses]

#### PHIADSE01T [Elective Logic]

[75 lectures will be distributed as per requirement]

Set Theory:

Introduction, Membership, Inclusion, the Empty Set, Operations on Sets, Intersection, Union and Difference, Domain Of Individuals, Translating sentences of everyday language into Set Notation, Venn diagram, Definition of Relations, Properties of Binary Relations, Definition of Functions and Operations on Functions.

Patrick Suppes- Introduction to Logic (Chapters 9, 10 and 11)

Quine's Method of Resolution- Fell Swoop and Full Sweep

Quine: Methods of Logic

#### PHIADSE02T [Practical Ethics]

[75 lectures will be distributed as per requirement]

Killing:

Killing of animals, Suicide, Euthanasia

- i. Human Rights:  
Discrimination and its different types [with special reference to Caste /varna.
- ii. War, Violence and Terrorism.
- iii. Concept of Environmental Ethics.
- iv. Feminist Ethics---Justice based Ethics vs. Care based Ethics and Ethics based on Empathy; female foeticide and abortion.

#### PHIADSE03T [Philosophy of Religion]

- i. Introduction: 10
  - a. Scope and nature of Religion.
  - b. Relation between-  
Philosophy of Religion and Theology
- ii. Difference between: 10  
Spirituality and Religiosity

Sacred and Profane

Magic and Religion

iii. Problem of evil [Hospers]

5

iv. Proofs for the existence of God: Ontological, Cosmological, Teleological, Moral 20

v. Grounds for disbelief in God: Sociological theory and Freudian theory.

10

vi. Some Major Religions: Hinduism, Buddhism, Christianity, Islam. 20

## Semester-VI

[Candidates have to choose any Two from the following Courses]

### PHIADSE04T

[75 lectures will be distributed as per requirement]

Rabindranath, *Sadhana*

### PHIADSE05T

Russell, Problems of Philosophy- [75 lectures will be distributed as per requirement]

i. Appearance and Reality,

ii. Knowledge by acquaintance and knowledge by description,

iii. On induction,

iii. The Value of Philosophy.

### PHIADSE06T

Hume, *An Enquiry Concerning Human Understanding*

---

## Generic Elective/Interdisciplinary [GE]

**[Theory: Any 4 papers from unrelated discipline each carrying (5+1) =6 credits. Total= (6x4) =24 credit. [For Hons. students from other departments. Students from other discipline may choose papers from the following list of papers introduced by the department of Philosophy].**

Total 75 hours Lecture and 15 hours Tutorial

### Semester-I

#### PHIHGEC01T [Logic]

- A. Basic concepts: Proposition, Categorical Proposition, Quality, Quantity of categorical Propositions, argument, truth, validity. 5
- B. Distribution of terms, Traditional Square of Oppositions, Conversion, Obversion and Contraposition. Categorical Proposition: Existential Import of Propositions, Boolean Interpretation of Categorical Propositions. 15
- C. Categorical syllogism: Figure, Mood, Rules for Validity, Testing the validity of arguments by Venn diagram. 25
- D. Symbolic Logic: The value of special Symbols for Conjunction, Negation, Disjunction, Implication, Equivalence, Tautology, Contradiction and Contingency. 15
- E. Truth Table: Truth-table Method for Testing Arguments. 5
- F. Inductive Logic: Mill's methods of Experimental Inquiry. 10

### Semester -II

#### PHIHGEC02T [Western Epistemology and Metaphysics]

- A. Theories of the origin of knowledge: Rationalism, Empiricism and Kant's Critical Theory. 15
- B. Realism and Idealism as theories of Reality:
- i. General Introduction 2
- ii. Realism: Naive Realism, Locke's Representationalism. 10
- C. Idealism: Subjective Idealism: Berkeley's refutation of the distinction between Primary and Secondary qualities, Subjective Idealism. 5
- D. Substance: Empiricist and Rationalist view of Substance. 15
- E. Causality: Entailment theory, Regularity Theory. 14
- F. Mind-body Problem: Interactionism, Parallelism, and Epiphenomenalism. 14

## PHIHGEC03T [Indian Epistemology and Metaphysics]

Systems of Indian Philosophy:

A. i) *Cārvāka* Epistemology:

Perception as the only source of knowledge,

Rejection of Inference and Testimony as sources of knowledge

ii. *Cārvāka* Metaphysics:

Causality- *Svabhāvavāda*, *Yadṛcchāvāda*, *Akasmikatāvāda*, *Jagat*, *Bhūtacaitanyavāda*.

10

B. *Nyāya* Epistemology:

Classifications of *Pramana*: *Pratyaksa*, *Anumana*, *Upamana* & *Sabda* (In brief).

*Pratyaksa*: *Laksana*:

Classifications: Determinate (*Savikalpaka*) and Indeterminate (*Nirvikalpaka*), *Laukika*, *a-laukika*;

Classification of *a-laukika* [In brief].

*Sannikarsa*: *Laukika* & *a-laukika*.

*Anumana*: *Laksana*, *Vyapti*, *Paramarsa*, *Svarthanumiti* & *Pararthanumiti*.

20

C) *Vaiśeṣika* Metaphysics: Seven categories: Outlines of *Dravya*, *Guṇa*, *Karma*, and Detailed

Explanations of *Sāmānya*, *Viśeṣa*, *Samavāya*, and *Abhāva*.

25

D. *Advaita* Metaphysics: Nature of Brahman, *Māyā*, *Jagat*, Relation between Brahman and *Jīva* 15

## Semester- IV

### PHIHGEC04T [Ethics-Indian and Western]

Introduction, Difference between Indian Ethics and Western Ethics 4

*Purusarthas*: General view and their Inter-Relations 4

*Karma*: *Sakama*, *Niskama*, *Nitya-naimittik*, *Kamyā* 8

*Carvaka* Ethics. 4

Buddhist Ethics: The Four Noble Truths and the Eight-fold Path, *Pancasila*. 5

Jaina Ethics: *Anuvrata*, *Mahavrata*. 5

Moral and Non-moral actions: Concept and object of Moral Judgment. 5

Standards of Morality: (A) Teleological Ethics- Hedonism-Psychological & Ethical; Ethical-Egoism and Utilitarianism [Bentham & Mill]. 20

B. Deontological Ethics -Kant:

Good will, Categorical Imperative, Duty for Duty's Sake. 15

### III. Ability Enhancement Course: For both Honours and Under Graduate Programme [Pure Pass] Students.

Details are given at the end.

### B.A .Undergraduate Programme [PURE PASS Course]

Total Credit=120

#### I. Core Course:

[Same as the Generic Elective for Hons. Students, however, with a separate code 4X6=24  
Credit. Total Credit from Two Disciplines [one is other than Philosophy] =24X2=48

Total 75 hours Lecture and 15 hours Tutorial for each Module

#### Semester - I

##### PHIGCOR01T – Logic

- A. Basic concepts: Proposition, Categorical Proposition, Quality, Quantity of Categorical Propositions, Argument, Truth, Validity. 5
- B. Distribution of Terms, Traditional Square of Oppositions:, Conversion, Obversion and Contraposition. Categorical Proposition: Existential Import of Propositions, Boolean Interpretation of Categorical Propositions. 15
- B. Categorical syllogism: Figure, Mood, Rules for Validity, Testing the validity of arguments by Venn Diagram. 25
- D. Symbolic Logic: The value of special Symbols for Conjunction, Negation, Disjunction, Implication, Equivalence, Tautology, Contradiction and Contingency. 15
- E. Truth Table: Truth-table Method for testing Arguments. 5
- F. Inductive Logic: Mill's methods of Experimental Inquiry. 10

#### Semester – II

##### PHIGCOR02T- Western Epistemology and Metaphysics

- A. Theories of the origin of knowledge: Rationalism, Empiricism and Kant's Critical Theory. 15
- B. Realism and Idealism as theories of Reality:
- i. General Introduction 2
- ii. Realism: Naive Realism, Locke's Representationalism 10
- C. Idealism: Subjective Idealism: Berkeley's refutation of the distinction between Primary and Secondary qualities, Subjective Idealism. 5

D. Substance: Empiricist and Rationalist view of Substance.	15
E. Causality: Entailment theory, Regularity Theory.	14
F. Mind-body Problem: Interactionism, Parallelism, and Epiphenomenalism.	14

### Semester – III

#### PHIGCOR03T- Indian Epistemology and Metaphysics

Systems of Indian Philosophy:

A. i) *Cārvāka* Epistemology:

Perception as the only source of knowledge,  
Rejection of Inference and Testimony as sources of knowledge

ii. *Cārvāka* Metaphysics:

Causality- *Svabhāvavāda*, *Yadr̥cchāvāda*, *Akasmikatāvāda*, *Jagat*, *Bhūtacaitanyavāda*.

10

B. Nyāya Epistemology:

i) Classifications of *Pramana*: *Pratyaksa*, *Anumana*, *Upamana* & *Sabda* (In brief).

*Pratyaksa*: *Laksana*:

Classifications: Determinate (*Savikalpaka*) and Indeterminate (*Nirvikalpaka*), *Laukika*, *a-laukika*;

Classification of *a-laukika* [In brief].

*Sannikarsa*: *Laukika* & *a-laukika*.

*Anumana*: *Laksana*, *Vyapti*, *Paramarsa*, *Svarthanumiti* & *Pararthanumiti*.

20

C) *Vaiśeṣika* Metaphysics: Seven categories: Outlines of *Dravya*, *Guṇa*, *Karma*, Detailed

Explanations of *Sāmānya*, *Viśeṣa*, *Samavāya*, and *Abhāva* .

25

D. Advaita Metaphysics: Nature of *Brahman*, *Māyā*, *Jagat*, Relation between *Brahman* and *Jīva* . 15

### Semester – IV

#### PHIGCOR04T- Ethics-Indian and Western

Introduction, Difference between Indian Ethics and Western Ethics 4

*Purusarthas*: General view and their Inter-Relations 4

*Karma*: *Sakama*, *Niskama*, *Nitya-naimittik*, *Kamyā* 8

Carvaka Ethics.	4
Buddhist Ethics: The Four Noble Truths and the Eight-fold Path, <i>Pancasila</i> .	5
Jaina Ethics: <i>Anuvrata, Mahavrata</i> .	5
Moral and Non-moral actions: Concept and object of Moral Judgment.	5
Standards of Morality: (A) Teleological Ethics- Hedonism-Psychological & Ethical; Ethical-Egoism and Utilitarianism [Bentham & Mill].	20
B. Deontological Ethics -Kant	
Good will, Categorical Imperative, Duty for Duty's sake.	15
E. Theories of Punishment.	5

---

Core English & Core MIL [Two papers for each discipline; English in Sem. I and II; MIL in Sem. III and IV] =6X4=24

**Total Credit in Core Paper=48+24=72**

---

## II. Elective Course.

### Discipline Specific Elective [DSE]

[04 courses are to be introduced by each Department .Course 01 and 02 for Odd Semester, Course 03 and 04 for Even Semester. Students have to choose any one in each Semester. Total four from two Disciplines. Total Credit 4X6=24]

Total 75 hours Lecture and 15 hours Tutorial for each Module.

### Semester - V

#### PHIGDSE01T [Applied Ethics]

- |  |    |
|--|----|
| A. Nature of Applied /Practical Ethics.  | 5  |
| B. Nature of Rights-Human & Animal.  | 10 |
| C. Suicide-Definition and Types, whether suicide can be called 'A moral crime', Arguments for and against suicide. |    |
| D. Euthanasia/Mercy killing-Definition, meaning, types; Arguments for and against Euthanasia.                      | 20 |

E. Environmental Ethics-Nature and main concern, Necessity of Environmental Ethics for human survival 20

PHIGDSE02T- [Rabindranath, *Religion of Man*] 75

### Semester - VI

PHIGDSE03T [Social & Political Philosophy]

A. Social Philosophy.

i. Nature & Scope 2

ii. Primary concepts: Society, Community, Association, Institution, Social group and its different forms. 6

iii. Religious and Moral codes. 2

iv. Custom and Law. 5

v. Culture and Civilization. 5

vi. Class and Caste-Definition and difference between social class and caste, Class-attitudes and Class-consciousness. 15

B. Political Ideals:

i. Democracy: Different forms-Direct, Representative, Merits and demerits of Democracy. 20

ii. Socialism: Various forms-Utopian, Democratic and Scientific. 20

PHIGDSE04T [Bimalkrishna Motilal, *Niti, Yukti, Dharma: Kahini O Sahitye Rama O Krishna.*] 75

### Generic Elective [GE]

[For students who have not chosen Philosophy as Core Course.

6X2=12.

Total 75 hours Lecture and 15 hours Tutorial for each Module]

### Semester - V

PHIGGEC01T [The Philosophy of Self –Development]

A. Buddhism- *Caturāryasatya*, Causality, *Dvādaśa nidāna* [bhava chakra] *aṣṭāṅgika Mārga*. 15

B. Yoga: ---*citta*, *cittabhūmi*, *cittavṛtti*, *cittavṛtti nirodha*, *aṣṭāṅgayoga*. 15

C. Vedanta - Advaita Vedanta-Introduction [in brief]; *śravaṇa*, *manana*, *nididhyāsana*; *Mukti*---  
*jīvanmukti*, *videha mukti*. 20

D. Vivekananda: *Karmayoga*. 15

E. Gandhi- Non-violence, Truth. 10



Semester -VI

**PHIGGEC02T [Critical Thinking]**

Text:

Madhuchhanda Sen, *Critical Thinking*

---

**III. Ability Enhancement Course/ Shared Courses**

Interdisciplinary, for both Hons. and General Students

**Ability Enhancement Course Compulsory [AECC]**

Semester I and II -as provided by the University Total Credit=  $[2 \times 2] = 04$ .

**1. Skill Enhancement Course [SEC]**

[Hons .students have to choose 02 papers and students of Undergraduate Programme have to choose 04 papers from a pool of subjects].

Total credit for Hons. students =  $[2 \times 2] = 04$  and for students of Undergraduate Programme =  $[4 \times 2] = 08$

Odd Semester

[Semester III for Hons. students and Semester III and V for students of Undergraduate Programme, same course is to be introduced]

**PHISSEC01M - [Media Ethics]**

What is Media Ethics, Roles and Impact of Media, Media and Democracy, Functions and Responsibilities of Media.

Even Semester

[Semester IV for Hons. students and Semester IV and VI for students of Undergraduate Programme, same course is to be introduced]

**PHISSEC02M [Business Ethics]**

What is Business Ethics; Environmental Ethics related to business, Advertising Ethics related to business.

**Environmental Pollutions and Health Hazards**

Definition: hygiene, health and public health.

Air, Water, Food Borne Diseases: causes, symptoms and control.

Food Additives and Adulterants: definition, examples and human health hazards.

Vector Borne Epidemic Diseases: Malaria and Plague-etiology and control.

**Air Pollution:** definition, sources, air pollutants, effects of air pollution on human health, concept of ozone hole, green house effects and global warming.

**Water Pollution:** definition, types, health hazards, water pollutants, biochemical oxygen demand (BOD), thermal pollution, concept of safe drinking water standards.

**Soil Pollution:** causes, health hazards, solid waste management, bioremediation, phytoremediation.

**Sound Pollution:** definition, concept of noise, source of sound pollution, effects of sound pollution on human health, noise index (noise standards).

**Radionuclide Pollution:** ionizing radiations, effects of ionizing radiation on human health, permissible doses.

**Arsenic Pollution:** sources, sources of arsenic in ground water, drinking water standard for arsenic (WHO, USEPA), health effects of chronic arsenic poisoning.

**Environmental management**

Environmental ethics.

*Conservation of topsoil, ground water and wild lives; rain water harvesting; sanctuary, national park, biosphere reserve, wildlife (conservation) Act, 1992.*

**WEST BENGAL STATE UNIVERSITY**

**CHOICE BASED CREDIT SYSTEM**

**LIST OF PAPERS AND COURSES**

**B.A (HONOURS) POLITICAL SCIENCE**

**(The Syllabus for Semester 2 to Semester 6 may be slightly modified later)**

**CODES**

- **PLSACOR** denotes Political Science HONOURS(CORE)
- **PLSHGEC** denotes Political Science GENERIC ELECTIVE (For Honours in other subjects)
- **PLSADSE** denotes Political Science DISCIPLINE SPECIFIC ELECTIVE(For Honours in Political Science)
- **PLSSSEC** denotes Political Science SKILL ENHANCEMENT COURSE (For Honours/general in Political Science)
  
- ✓ **PLSGCOR** denotes Political Science GENERAL(CORE)
- ✓ **PLSGDSE** denotes Political Science DISCIPLINE SPECIFIC ELECTIVE((For pure General students with Political Science as one of the subjects)
- ✓ **PLSGGEC** denotes Political Science GENERIC ELECTIVE((For General students not having Political Science as one of the core subjects)
  
- **PLSA /PLSG – SUBJECT ABBREVIATIONS MADE BY THE UNIVERSITY**

**CREDIT/MARKS DISTRIBUTION**

**Core course – CC – 14 Core courses – 6 Credits/Paper**

**Generic Elective – GE – 4 courses - 6 Credits/Paper**

**Discipline Specific Elective – DSE -4 courses - 6 Credits/Paper**

**Ability Enhancement Compulsory Course – AECC – 2 courses – 2 Credits/paper**

**Skill Enhancement Courses - SEC – 2 Courses – 2 Credits/paper**

**Total : CC 84 + GE 24 + DSE 24 + AECC 4 + SEC 4 = 140 CREDITS**

## **A) CORE COURSE (14) – COURSE TITLES**

### **Semester - I**

**PLSACOR01T** – CC1.1- Paper I- Understanding Political Theory

**PLSACOR02T** – CC1.2 -Paper II- Constitutional Government and Democracy in India

### **Semester - II**

**PLSACOR03T** - CC2.1 Paper III – Political Theory-Concepts and Debates

**PLSACOR04T** - CC 2.2 Paper IV- Political Process in India

### **Semester - III**

**PLSACOR05T** - CC3.1 Paper V- Introduction to Comparative Government and Politics

**PLSACOR06T** - CC3.2 Paper VI –Perspectives on Public Administration

**PLSACOR07T** - CC3.3 Paper VII- Perspectives on International Relations and World History

### **Semester - IV**

**PLSACOR08T** - CC4.1 Paper VIII- Political Processes and Institutions in Comparative Perspective

**PLSACOR09T** - CC4.2 Paper IX- Public Policy and Administration in India

**PLSACOR10T** - CC4.3 Paper X- Global Politics

### **Semester - V**

**PLSACOR11T** - CC5.1 Paper XI- Classical Political Philosophy

**PLSACOR12T** - CC5.2 Paper XII- Indian Political Thought-I

### **Semester - VI**

**PLSACOR13T** - CC6.1 Paper XIII- Modern Political Philosophy

**PLSACORT4T** - CC6.2 Paper XIV- Indian Political Thought-II

**B) GENERIC ELECTIVE-(GE-Interdisciplinary): (Sem. I, II, III, IV)**

**[For the Honours students with subjects other than Political Science]**

1. **PLSHGEC01T** – GE Paper I - Introduction to Political Theory - Semester - 1
2. **PLSHGEC02T** – GE Paper-II - Indian Government and Politics – Semester -2
3. **PLSHGEC03T** – GE Paper-III- Comparative Government and Politics – Semester- 3
4. **PLSHGEC04T** – GE Paper-IV- Introduction to International Relations – Semester – 4

**C) PLSSEEC - SKILL ENHANCEMENT COURSE: Any Two (Sem.-3 & 4)**

Semester – III

1. **PLSSSEC01M** Democratic Awareness with Legal Literacy

Semester – IV

2. **PLSSSEC02M** Public Opinion and Survey Research

**D) PLSADSE - DISCIPLINE SPECIFIC ELECTIVE(DSE): Any Four (Sem.-V and VI)**

Semester – V(Any two)

1. **PLSADSE01T** Reading Gandhi
2. **PLSADSE02T** Women, Power and Politics
3. **PLSADSE03T** Understanding Global Politics

Semester – VI (Any two)

4. **PLSADSE04T** Public Policy in India
5. **PLSADSE05T** Human Rights in a Comparative Perspective
6. **PLSADSE06T** Governance: Issues and Challenges

**E) ABILITY ENHANCEMENT COURSE (COMPULSORY) :ANY TWO**

1. Language-MIL/ENGLISH
2. Environmental Science

## **COURSE OBJECTIVES(HONOURS/CORE COURSE - 14)**

### **Paper – 1 Understanding Political Theory**

This course introduces the students to the idea of political theory, its history and approaches, and an assessment of its critical and contemporary trends and is designed to reconcile political theory and practice through reflections on the ideas and practices related to democracy.

### **Paper – 2 Constitutional Government and Democracy in India**

This course acquaints students with the constitutional design of state structures and institutions, and their actual working over time. It further encourages a study of state institutions in their mutual interaction, and in interaction with the larger extra-constitutional environment.

### **Paper – 3 Political Theory-Concepts and Debates**

This course helps the student familiarize with the basic normative concepts of political theory. Each concept is related to a crucial political issue that requires analysis with the aid of our conceptual understanding. This exercise is designed to encourage critical and reflective analysis and interpretation of social practices through the relevant conceptual toolkit. It further introduces the students to the important debates in the subject.

### **Paper – 4 Political Process in India**

This course maps the working of ‘modern’ institutions, premised on the existence of an individuated society, in a context marked by communitarian solidarities, and their mutual transformation thereby. It also familiarizes students with the working of the Indian state, paying attention to the contradictory dynamics of modern state power.

### **Paper 5 Introduction to Comparative Government and Politics**

This is a foundational course in comparative politics. The purpose is to familiarize students with the basic concepts and approaches to the study of comparative politics. More specifically the course will focus on examining politics in a historical framework while engaging with various themes of comparative analysis in developed and developing countries.

### **Paper 6 Perspectives on Public Administration**

The course provides an introduction to the discipline of public administration. This paper encompasses public administration in its historical context with an emphasis on the various classical and contemporary administrative theories. The course also explores some of the recent trends, including feminism and ecological conservation and how the call for greater democratization is restructuring public administration.

The course will also attempt to provide the students a comprehensive understanding on contemporary administrative developments.

### **Paper 7 Perspectives on International Relations and World History**

This paper seeks to equip students with the basic intellectual tools for understanding International Relations. It introduces students to some of the most important theoretical approaches for studying international relations. The course begins by historically contextualizing the evolution of the international state system; then the students are introduced to different theories in International Relations. It provides a fairly comprehensive overview of the major political developments and events starting from the twentieth century. Students are expected to learn about the key milestones in world history and equip them with the tools to understand and analyze the same from different perspectives. A key objective of the course is to make students aware of the implicit Euro - centricism of International Relations by highlighting certain specific perspectives from the Global South.

### **Paper 8 Political Processes and Institutions in Comparative Perspective**

In this course students will be trained in the application of comparative methods to the study of politics. The course is comparative in both what we study and how we study. In the process the course aims to introduce undergraduate students to some of the range of issues, literature, and methods that cover comparative political arena

### **Paper-9 Public Policy and Administration in India**

The paper seeks to provide an introduction to the interface between public policy and administration in India. The essence of public policy lies in its effectiveness in translating the governing philosophy into programs and policies and making it a part of the community living. It deals with issues of decentralization, financial management, citizens and administration and social welfare from a non-western perspective.

### **Paper 10 Global Politics**

This course introduces students to the key debates on the meaning and nature of globalization by addressing its political, economic, social, cultural and technological dimensions. It imparts an understanding of the working of the world economy, while analyzing the changing nature of relationship between the state and trans-national actors and networks. The course also offers insights into key contemporary global issues.

### **Paper 11 Indian Political Thought-I**

This course introduces the specific elements of Indian Political Thought spanning over two millennia. The basic focus of study is on individual thinkers whose ideas are however framed by specific themes. The course as a whole is meant to provide a sense of the broad streams of Indian thought while encouraging a specific knowledge of individual thinkers and texts. Selected extracts from some original texts are also given to discuss in class.

### **Paper 12 Modern Political Philosophy**

Philosophy and politics are closely intertwined. We explore this convergence by identifying four main tendencies here. Students will be exposed to the manner in which the questions of politics have been posed in terms that have implications for larger questions of thought and existence.

### **Paper 13 Modern Political Philosophy**

Philosophy and politics are closely intertwined. We explore this convergence by identifying four main tendencies here. Students will be exposed to the manner in which the questions of politics have been posed in terms that have implications for larger questions of thought and existence.

### **Paper 14 Indian Political Thought-II**

Based on the study of individual thinkers, the course introduces a wide span of thinkers and themes that defines the modernity of Indian political thought. The objective is to study general themes that have been produced by thinkers from varied social and temporal contexts. Selected extracts from original texts are also given to discuss in the class. The list of essential readings are meant for teachers as well as the more interested students.



<b>PLSACOR</b>	<b>Semester I</b>			
Course Code	<b>Paper – I</b> <b>Course Title –Understanding Political Theory</b>	Lectures	Credits (Th+Tut) X15 weeks	Marks
<b>PLSACOR01T</b>	<b>Introducing the subject</b>	<b>10</b>	<b>5+1</b>	<b>75</b>
	<b>Module 1.</b> What is Political and what is political Science			
	<b>Module 2.</b> Approaches to the study: a)Traditional b) Marxist c)Behavioral d)Post Behavioral	<b>20</b>		
	<b>Module 3. Models of studying Political Theory</b> a) Authority Models(Weber) b) Systems Analysis c) Structural functional Model d) Post Modernism(to be studied at the backdrop of the current debates)	<b>45</b>		
<b>PLSACOR02T</b>	<b><u>Paper - II</u></b> <b><u>Constitutional Government and Democracy in India</u></b>		<b>5+1</b>	<b>75</b>
	<b>Module 1.</b> Constituion of India(Article-wise) a)Preamble b)Fundamental Rights c)Directive Principles of State Policy	<b>30</b>		
	<b>Module 2.</b> Federalism	<b>10</b>		
	<b>Module 3.</b> Constitution of India: <b>Structure, Process, Behaviour</b> a)Union Government: Executive(total as it is in the constitution)Legislature(total, according to the Constitution) Judiciary(total, following the articles of the constitution with two additional dimensions: landmark decisions and PIL b)State Government: Executive, Legislature, Judiciary (In the same way as the Union government is to be studied)	<b>35</b>		

--	--	--	--	--

**Semester II**

<b>PLSACOR</b>	<b>Paper – III</b>			
<b>Course Code</b>	<b>Course Title -Political Theory-Concepts and Debates</b>	<b>Lect</b>	<b>Credits (Th+Tut) X 15 wks</b>	<b>Marks</b>

PLSACOR03T	<b>Module – 1. Core political concepts:</b>	<b>20</b>	<b>5+1</b>	<b>75</b>
	<ul style="list-style-type: none"> <li>i. Nationalism and nation state</li> <li>ii. Sovereignty: Monism, Pluralism</li> </ul>			
	<b>Module – 2. Core Concepts and Debates:</b>	<b>20</b>		
	<ul style="list-style-type: none"> <li>i. Rights, Liberty, Equality</li> <li>ii. Justice: Plato, Rawls</li> </ul>			
	<b>Module – 3. Theories of State</b>	<b>35</b>		
	<ul style="list-style-type: none"> <li>a) Idealist Theory</li> <li>b) Liberal and Neo-liberal Theories</li> </ul>			
PLSACOR04T	<b>Paper – IV</b>			
	<b>Course Title - Political Process in India</b>			
	<b>Module – 1. Structure and process of election system</b>	<b>25</b>		
	<ul style="list-style-type: none"> <li>a) Party system in India: features and trends; coalition Governments</li> <li>b) Electoral process: Election Commission— Composition and Functions</li> </ul>			
	<b>Module 2. Issues in contemporary politics</b>	<b>25</b>		
<ul style="list-style-type: none"> <li>a) Regionalism in India</li> <li>b) Role of religion, caste, Dalits, Women</li> </ul>				
	<b>Module 3. The concerns</b>	<b>25</b>		
<ul style="list-style-type: none"> <li>a) Corruption and politics: Measures to curb corruption in Indian politics</li> <li>b) Media and politics</li> </ul>				

PLSACOR	Semester III			
Course Code	<b>Paper – V</b> <b>Course Title - Introduction to Comparative Government and Politics</b>	Lectures	Credits (Theory +Tutorial)X 15 weeks	Marks

<b>PLSACOR05T</b>	<b>Module – 1. Understanding Comparative Politics</b>	<b>15</b>	<b>5+1</b>	<b>75</b>
	a. Nature and scope b. Going beyond Eurocentrism			
	<b>Module – 2. Historical context of modern government</b>	<b>35</b>		
	a. Capitalism: meaning and development: globalization b. Socialism: meaning, growth and development c. Colonialism and decolonization: meaning, context, forms of colonialism; anti-colonialism struggles and process of decolonization			
	<b>Module – 3.. Themes for comparative analysis</b> A comparative study of constitutional developments and political economy in the following countries: Britain, Brazil and China.	<b>25</b>		

<b>PLSACOR</b>	<b>Semester III</b>			
Course Code	<b>Paper – VI</b> <b>Course Title - Perspectives on Public Administration</b>	Lectures	Credits (Theo +Tut)X 15	Marks

			weeks	
<b>PLSACOR06T</b>	<p><b>I. Public Administration as a Discipline</b></p> <p>a. Meaning, Dimensions and Significance of the Discipline</p> <p>b. Public and Private Administration</p> <p>c. Evolution of Public Administration</p> <p><b>II. Theoretical Perspectives</b></p> <p>a. CLASSICAL THEORIES</p> <ul style="list-style-type: none"> <li>• Scientific management (F.W. Taylor)</li> <li>• Administrative Management (Gullick, Urwick and Fayol)</li> <li>• Ideal-type bureaucracy (Max Weber)</li> </ul> <p>b. NEO-CLASSICAL THEORIES</p> <ul style="list-style-type: none"> <li>• Human relations theory (Elton Mayo)</li> <li>• Rational decision-making (Herbert Simon)</li> </ul> <p>c. CONTEMPORARY THEORIES</p> <ul style="list-style-type: none"> <li>• Ecological approach (Fred Riggs)</li> <li>• Innovation and Entrepreneurship (Peter Drucker)</li> </ul> <p><b>III. Major Approaches In Public Administration</b></p> <ul style="list-style-type: none"> <li>• New Public Administration</li> <li>• New Public Management</li> <li>• New Public Service Approach</li> <li>• Good Governance</li> <li>• Feminist Perspectives</li> </ul>	15	5+1	75
		40		
		20		

<b>PLSACOR</b>	<b>Semester III</b>			
Course Code	<p><b>Paper – VII</b></p> <p><b>Course Title - Perspectives on International Relations and World History</b></p>	Lectures	Credits (Theo +Tut)X 15 weeks	Marks

<b>PLSACOR07T</b>	<b>I. Studying International Relations</b>	<b>15</b>	<b>5+1</b>	<b>75</b>
	<ul style="list-style-type: none"> <li>a. How do you understand International Relations: Levels of Analysis</li> <li>b. History and IR: Emergence of the International State System</li> <li>c. Pre-Westphalia and Westphalia</li> <li>d. Post-Westphalia</li> </ul>			
	<b>II. Theoretical Perspectives</b>	<b>25</b>		
	<ul style="list-style-type: none"> <li>a. Classical Realism &amp; Neo-Realism</li> <li>b. Liberalism &amp; Neo-liberalism</li> <li>c. Marxist Approaches</li> <li>d. <b>Feminist Perspectives</b></li> <li>e. Eurocentricism and Perspectives from the Global South</li> </ul>			
	<b>III. An Overview of Twentieth Century IR History</b>	<b>35</b>		
	<ul style="list-style-type: none"> <li>a. World War I: Causes and Consequences</li> <li>b. Significance of the Bolshevik Revolution</li> <li>c. Rise of Fascism / Nazism</li> <li>d. World War II : Causes and Consequences</li> <li>e. Cold War: Different Phases</li> <li>f. Emergence of the Third World</li> <li>g. Collapse of the USSR and the End of the Cold War</li> <li>h. Post Cold War Developments and Emergence of other Power Centers of Power</li> </ul>			

<b>PLSACOR</b>	<b>Semester IV</b>			
Course Code	<b>Paper – VIII</b> <b>Course Title - Political Processes and</b>	Lectures	Credits (Theo	Marks

	<b>Institutions in Comparative Perspective</b>		+Tut)X 15 weeks	
<b>PLSACOR08T</b>	<b>Module I. Approaches to Studying Comparative Politics</b>		<b>5+1</b>	<b>75</b>
	<ul style="list-style-type: none"> <li>a. Political Culture</li> <li>b. New Institutionalism</li> </ul>	<b>15</b>		
	<b>Module II.</b>			
	<ul style="list-style-type: none"> <li>a. <b>Nation-state:</b> What is nation–state? Historical evolution in Western Europe and postcolonial contexts ‘Nation’ and ‘State’: debates</li> <li>b. Process of democratization in postcolonial, post- authoritarian and post-communist countries</li> </ul>	<b>25</b>		
	<b>III. Module III</b>			
	<ul style="list-style-type: none"> <li>a. <b>Federalism:</b> Historical context Federation and Confederation: debates around territorial division of power: USA, CANADA, INDIA</li> </ul>	<b>20</b>		
	<ul style="list-style-type: none"> <li>b. <b>Nature of Party System :</b></li> </ul>			
	<ul style="list-style-type: none"> <li>i. Historical contexts of emergence of the party system and types of parties</li> <li>ii. Nature of party System: USA, UK, China</li> </ul>	<b>15</b>		

<b>PLSACOR</b>	<b>Semester IV</b>			
Course Code	<b>Paper – IX</b> <b>Course Title – Public Policy and Administration in India</b>	Lectures	Credits (Theo +Tut)X 15	Marks

			weeks	
<b>PLSACOR09T</b>	<b>Module I. Public Policy</b> a. Concept, relevance and approaches b. Definition, characteristics and models c. Public Policy Process in India d. Formulation, implementation and evaluation e. Social Welfare Policies: Education: Right To Education, National Education Policy, Kothari Commission. Health: National Health Mission . Food: Right To Food Security  a. Employment: JNNURM, MNREGA	<b>35</b>	<b>5+1</b>	<b>75</b>
	<b>Module II.</b> <b>a. Decentralization</b> i. Meaning, significance and approaches and types ii. Local Self Governance: Rural and Urban – With Special Reference to West Bengal  <b>b. Citizen and Administration Interface</b> a. Public Service Delivery b. Redressal of Public Grievances: RTI, Lokpal, Citizens’ Charter and E-Governance	<b>25</b>		
	<b>Module III. Budget</b> a. Concept and Significance of Budget b. Budget Cycle in India c. Various Approaches and Types Of Budgeting, Vote on Account, Zero Base Budgeting, Performance Budgeting	<b>10</b>		

<b>PLSACOR</b>	<b>Semester IV</b>			
Course Code	<b>Paper X</b>	Lectures	Credits (Theo +Tut)X 15	Marks
	<b>Global Politics</b>			



			weeks	
<b>PLSACOR10T</b>	<b>I. Globalization: Conceptions and Perspectives</b>		<b>5+1</b>	<b>75</b>
	<ul style="list-style-type: none"> <li>a. Understanding Globalization and its Alternative Perspectives</li> <li>b. Political: Debates on Sovereignty and Territoriality</li> <li>c. Global Economy: Its Significance and Anchors of Global Political Economy: IMF, World Bank, WTO, TNCs</li> <li>d. Cultural and Technological Dimension</li> <li>e. Global Resistances (Global Social Movements and NGOs)</li> </ul>	<b>35</b>		
	<b>II. Contemporary Global Issues</b>			
	<ul style="list-style-type: none"> <li>a. <b>Ecological Issues: Historical Overview of International Environmental Agreements, Climate Change, Global Commons Debate</b></li> <li>b. Proliferation of Nuclear Weapons</li> <li>c. International Terrorism: Non-State Actors and State Terrorism; Post 9/11 developments</li> <li>d. Migration</li> <li>e. <b>Human Security</b></li> </ul>	<b>30</b>		
	<b>III. Global Shifts: Power and Governance</b>	<b>10</b>		

<b>PLSACOR</b>	<b>Semester V</b>			
Course Code	<b>Paper XI</b>	Lectures	Credits	Marks

	<b>Classical Political Philosophy</b>		(Theo +Tutorial) X 15 weeks	
<b>PLSACOR11T</b>	<p><b>Module I. Antiquity</b></p> <p><b>Plato:</b> Philosophy and Politics, Theory of Forms, Justice, Philosopher King/Queen, Communism; Critique of Democracy; Women and Guardianship, Censorship</p> <p><b>Aristotle:</b> Virtue, Citizenship, Justice, State and Household - Classification of governments; man as zoon politikon</p> <p><b>Module II. Interlude:</b></p> <p><b>Machiavelli:</b> Virtue, Religion, Republicanism, morality and statecraft; vice and virtue</p> <p><b>Module IV. Hobbes , Locke and Rousseau</b></p> <p>a. <b>Hobbes:</b> Human nature, State of Nature, Social Contract, State; Social Contract; Leviathan; atomistic individuals.</p> <p>b. <b>Locke :</b> Laws of Nature, Natural Rights, Property, Natural rights; right to dissent; justification of property</p> <p>c. <b>Rousseau:</b> State of Nature, Social Contract, General Will</p>	<p><b>15</b></p> <p><b>15</b></p> <p><b>10</b></p> <p><b>15</b></p> <p><b>10</b></p> <p><b>10</b></p>	<b>5+1</b>	<b>75</b>

<b>PLSACOR</b>	<b>Semester V</b>	
----------------	-------------------	--

Course Code	<b>Paper XII</b> <b>Indian Political Thought - I</b>	Lectures	Credits (Theo +Tutorial)X <b>15 weeks</b>	Marks
<b>PLSACOR12T</b>	<b>Module I. Traditions of Pre-colonial Indian Political Thought</b> a. Brahmanic and Shramanic b. Islamic and Syncretic.	<b>20</b>	<b>5+1</b>	<b>75</b>
	<b>Module II.</b> <b>Outline of ancient Indian Political Thought</b> a. Ved Vyasa (Shantiparva): Rajadharma b. Manu: Social Laws c. Kautilya: Theory of State , Saptanga, Danda, Law d. Aggannasutta (Digha Nikaya): Theory of kingship	<b>30</b>		
	<b>Module III. Outline of Islamic and Syncretic Thought</b>  a. <b>Barani: Ideal Polity</b>  b. <b>Abul Fazal: Monarchy</b>  c. <b>Kabir: Syncretism</b>	<b>25</b>		

<b>PLSACOR</b>	<b>Semester VI</b>			
Course Code	<b>Paper XIII</b> <b>Modern Political Philosophy</b>	Lectures	Credits (Theory +Tutorial) X 15 weeks	Marks

PLSACOR13T	<p><b>Module I Modernity and its discourse(Two essential readings)</b></p> <p>a. Kant. (1784) ‘What is Enlightenment?,’  b. George Wilhelm Friedrich Hegel: Civil Society and State</p>	25	5+1	75
	<p><b>Module II. Faminist Discourse</b></p> <p>a. Mary Wollstonecraft: ‘Vindication of Rights of Women’  b. Betty Friedan: ‘The Faminique Mistique’</p>	20		
	<p><b>Module III. Liberal socialist and Radicals</b></p> <p>a. <b>John Stuart Mill:</b> Liberty, suffrage and subjection of women, right of minorities; utility principle  b. <b>Karl Marx:</b> Alienation; Dialectical materialism, Historical Materialism, Class and class struggle  c. <b>Antonio Gramsci:</b> Civil Society and Hegemony</p>	30		

PLSACOR

Semester VI

Course Code	<p style="text-align: center;"><b>Paper XIV</b></p> <p style="text-align: center;"><b>Indian Political Thought - II</b></p>	Lectures	Credits (Theo +Tutorial) X 15 weeks	Marks
<b>PLSACOR14T</b>	<b>Module I. Introduction to Modern Indian Political Thought</b>	<b>05</b>	<b>5+1</b>	<b>75</b>
	a. Rammohan Roy: Rights	<b>10</b>		
	b. Pandita Ramabai: Gender	<b>8</b>		
	c. Vivekananda: Ideal Society	<b>10</b>		
	<b>Module - II</b>			
	a. Gandhi: Swaraj	<b>10</b>		
	b. Ambedkar: Social Justice	<b>05</b>		
	c. Tagore: Critique of Nationalism	<b>06</b>		
	<b>Module III</b>			
	a. Iqbal: Community	<b>06</b>		
b. Savarkar: Hindutva	<b>05</b>			
c. Nehru: Secularism	<b>05</b>			
d. Lohia: Socialism	<b>05</b>			

**READING LIST**

**PLSACOR01T**

1. Bhargava, R. (2008) 'What is Political Theory', in Bhargava, R and Acharya, A. (eds.) *Political Theory: An Introduction*. New Delhi: Pearson Longman, pp. 2-16.
2. Bellamy, R. (1993) 'Introduction: The Demise and Rise of Political Theory', in Bellamy, R. (ed.) *Theories and Concepts of Politics*. New York: Manchester University Press, pp. 1-14.
3. Charlesworth(ed)(1967), *Contemporary Political Analysis*, New York , Free Press Glaser, D. (1995) 'Normative Theory', in Marsh, D. and Stoker, G. (eds.) *Theory and Methods in Political Science*. London: Macmillan
4. Hacker Andrew(1961), *Political theory: Philosophy, Ideology, science*. New York, Macmillan
5. Easton, David(1953), *The Political System*, New York, Alfred Knopf.
6. Easton, David(1965), *A Framework for Political Analysis*, New Jersey, Prentice Hall
7. Easton, David(1966), *Varieties of Political Theories*, New Jersey, Prentice Hall
8. Joad C.E.M. (1924), *Introduction to Modern Political Theory*, OUP
9. Sanders, D. (1995) 'Behavioral Analysis', in Marsh, D. and Stoker, G. (eds.) *Theory and Methods in Political Science*. London: Macmillan
10. Chapman, J. (1995) 'The Feminist Perspective', in Marsh, D. and Stoker, G. (eds.) *Theory and Methods in Political Science*. London: Macmillan
11. Bhargava, R, 'Why Do We Need Political Theory', in Bhargava, R. and Acharya, A. (eds.) *Political Theory: An Introduction*. New Delhi: Pearson Longman
- 12.

## PLSACOR02T

1. Constitution of India, Government of India
2. Austin G., (2010) 'The Constituent Assembly: Microcosm in Action', in *The Indian Constitution: Cornerstone of a Nation*, New Delhi: Oxford University Press, 15th print
3. Basu D., (2012) *Introduction to the Constitution of India*, New Delhi: Lexis Nexis.
4. U. Baxi, (2010) 'The Judiciary as a Resource for Indian Democracy', *Seminar*, Issue 615
5. R. Bhargava, (2008) 'Introduction: Outline of a Political Theory of the Indian Constitution', in R. Bhargava (ed.) *Politics and Ethics of the Indian Constitution*, New Delhi: Oxford University Press

6. Chatterjee Sibranjan(1973), *Role of Governor in the Indian Constitution: A New Perspective*, Kolkata, B. Sarkar
7. Chatterjee Sibranjan(1997) , *Restructuring Centre-State Relations: The Sarkaria Commission and Beyond*, Minerva
8. Chaube S., (2009) *The Making and Working of the Indian Constitution*, Delhi: National Book Trust.
9. Dhavan R. and Saxena R., (2006) 'The Republic of India', in K. Roy, C. Saunders and J. Kincaid (eds.) *A Global Dialogue on Federalism*, Volume 3, Montreal: Queen's University Press
10. Ghosh Soma,(2005) *Independence of The Judiciary: A Critical Overview*, Kolkata, Progressive Publishers
11. Khare H., (2003) 'Prime Minister and the Parliament: Redefining Accountability in the Age of Coalition Government', in A. Mehra and G. Kueck (eds.) *The Indian Parliament: A Comparative Perspective*, New Delhi: Konark
12. Manor J., (2005) 'The Presidency', in D. Kapur and P. Mehta P. (eds.) *Public Institutions in India*, New Delhi: Oxford University Press
13. Manor J., (1994) 'The Prime Minister and the President', in B. Dua and J. Manor (eds.) *Nehru to the Nineties: The Changing Office of the Prime Minister in India*, Vancouver: University of British Columbia Press
14. Ray Syamol K and Chatterjee Sibranjan(Eds), (2005) *Governance*, Kolkata, IIPA
15. Ramachandran R., (2006) 'The Supreme Court and the Basic Structure Doctrine' in B. Kirpal et.al (eds.) *Supreme but not Infallible: Essays in Honour of the Supreme Court of India*, New Delhi: Oxford University Press
16. Singh M., and Saxena R. (eds.), (2011) 'Towards Greater Federalization,' in *Indian Politics: Constitutional Foundations and Institutional Functioning*, Delhi: PHI Learning Private Ltd.
17. *The Constitution of India: Bare Act with Short Notes*, (2011) New Delhi: Universal
18. Basu, D.D. , *Bharater Sangbidhan parichay*, Wadha and Co.
19. Kashyap, Subhas C, *Amader Sanbidhan*, National Book Trust
20. Ghosh Soma, Pal Nibedita, Banik Rakhi,(2014) *SANBIDHAN PARIKRAMA' BOOK ON INDIAN CONSTITUTION AND GOVERNMENT(In Bengali)*, Kolkata, Progressive Publishers

1. Srinivasan, J. (2008) 'Democracy', in Bhargava, R. and Acharya, A. (eds.) *Political Theory: An Introduction*. New Delhi: Pearson Longman.
11. Owen, D. (2003) 'Democracy', in Bellamy, R. and Mason, A. (eds.) *Political Concepts*. Manchester and New York: Manchester University Press.
12. Christiano, Th. (2008) 'Democracy', in Mckinnon, C. (ed.) *Issues in Political Theory*, New York: Oxford University Press.
13. Arblaster, A. (1994) *Democracy*. (2nd Edition). Buckingham: Open University Press.
14. Carter, Ian. (2003) 'Liberty', in Bellamy, Richard and Mason, Andrew (eds.). *Political Concepts*. Manchester: Manchester University Press,
15. Menon, Krishna. (2008) 'Justice', in Bhargava, Rajeev and Acharya, Ashok. (eds.) *Political Theory: An Introduction*. New Delhi: Pearson Longman.
16. Wolf, Jonathan. (2008) 'Social Justice', in McKinnon, Catriona. (ed.) *Issues in Political Theory*. New York: Oxford University Press.
17. Swift, Adam. (2001) *Political Philosophy: A Beginners Guide for Student's and Politicians*. Cambridge: Polity Press.
18. Knowles, Dudley. (2001) *Political Philosophy*. London: Routledge.
19. McKinnon, Catriona. (ed.) (2008) *Issues in Political Theory*. New York: Oxford University Press,



1. R. Kothari, (2002) 'The Congress System', in Z. Hasan (ed.) *Parties and Party Politics in India*, New Delhi: Oxford University Press, pp 39-55.
2. E. Sridharan, (2012) 'Introduction: Theorizing Democratic Consolidation, Parties and Coalitions', in *Coalition Politics and Democratic Consolidation in Asia*, New Delhi: Oxford University Press.
3. Y. Yadav and S. Palshikar, (2006) 'Party System and Electoral Politics in the Indian States, 1952-2002: From Hegemony to Convergence', in P. deSouza and E. Sridharan (eds.) *India's Political Parties*, New Delhi: Sage Publications,
4. Y. Yadav, (2000) 'Understanding the Second Democratic Upsurge', in F. Frankel, Z. Hasan, and R. Bhargava (eds.) *Transforming India: Social and Political Dynamics in Democracy*, New Delhi: Oxford University Press
5. C. Jaffrelot, (2008) 'Why Should We Vote? The Indian Middle Class and the Functioning of World's Largest Democracy', in *Religion, Caste and Politics in India*, Delhi: Primus.
6. R. Deshpande, (2004) 'How Gendered was Women's Participation in Elections 2004?', *Economic and Political Weekly*.
7. S. Kumar, (2009) 'Religious Practices Among Indian Hindus,' *Japanese Journal of Political Science*, Vol. 10, No. 3.
8. M. Chadda, (2010) 'Integration through Internal Reorganisation', in S. Baruah (ed.) *Ethnonationalism in India: A Reader*, New Delhi: Oxford University Press
9. P. Brass, (1999) 'Crisis of National Unity: Punjab, the Northeast and Kashmir', in *The Politics of India Since Independence*, New Delhi: Cambridge University Press and Foundation Books.
10. T. Pantham, (2004) 'Understanding Indian Secularism: Learning from its Recent Critics', in R. Vora and S. Palshikar (eds.) *Indian Democracy: Meanings and Practices*, New Delhi: Sage.
11. N. Menon and A. Nigam, (2007) 'Politics of Hindutva and the Minorities', in *Power and*
12. *Contestation: India since 1989*, London: Fernwood Publishing, Halifax and Zed Books.
13. N. Chandhoke, (2010) 'Secularism', in P. Mehta and N. Jayal (eds.) *The Oxford Companion to Politics in India*, New Delhi: Oxford University Press.
14. R. Kothari, (1970) 'Introduction', in *Caste in Indian Politics*, Delhi: Orient Longman, pp.3-25. M. Weiner, (2001) 'The Struggle for Equality: Caste in Indian Politics', in Atul Kohli (ed.) *The Success of India's Democracy*, New Delhi: Cambridge University Press
15. G. Omvedt, (2002) 'Ambedkar and After: The Dalit Movement in India', in G. Shah (ed.) *Social Movements and the State*, New Delhi: Sage Publications

16. M. Galanter, (2002) 'The Long Half-Life of Reservations', in Z. Hasan, E. Sridharan and R. Sudarshan (eds.) *India's Living Constitution: Ideas, Practices, Controversies*, New Delhi: Permanent Black
17. Basu, D.D., *Bharater Sangbidhan Parichay*, (In Bengali), Wadha and co.
18. Kashyap, Subhas c., *Amader Sangbidhan*(In Bengali Translation by Partha Sarkar), National Book Trust
19. Ghosh Soma, Pal Nibedita, Banik Rakhi,(2014) *SANBIDHAN PARIKRAMA' BOOK ON INDIAN CONSTITUTION AND GOVERNMENT*(In Bengali), Kolkata, Progressive Publishers

### **PLSACOR05T**

1. J. Kopstein, and M. Lichbach, (eds), (2005) *Comparative Politics: Interests, Identities, and Institutions in a Changing Global Order*. Cambridge: Cambridge University Press, pp.1-5; 16-36; 253-290.
2. M. Mohanty, (1975) 'Comparative Political Theory and Third World Sensitivity', in *Teaching Politics*, Nos. 1 and 2, pp. 22-38
3. A. Roy, (2001) 'Comparative Method and Strategies of Comparison', in *Punjab Journal of Politics*. Vol. xxv (2), pp. 1-15.
4. J. Blondel, (1996) 'Then and Now: Comparative Politics', in *Political Studies*. Vol. 47 (1), pp. 152-160.
5. N. Chandhoke, (1996) 'Limits of Comparative Political Analysis ', in *Economic and Political Weekly*, Vol. 31 (4), January 27, pp. PE 2-PE2-PE8
6. R. Suresh, (2010) *Economy & Society -Evolution of Capitalism*, New Delhi, Sage Publications, pp. 151-188; 235-268.
7. G. Ritzer, (2002) 'Globalization and Related Process I: Imperialism, Colonialism, Development, Westernization, Easternization', in *Globalization: A Basic Text*. London: Wiley- Blackwell, pp. 63-84.
8. E. Wood, (2002) 'The Agrarian origin of Capitalism', in *Origin of Capitalism: A Long View*. London: Verso, pp. 91-95; 166-181.
9. A. Hoogvelt, (2002) 'History of Capitalism Expansion', in *Globalization and Third World*
10. *Politics*. London: Palgrave, pp. 14-28.

11. A. Brown, (2009) 'The Idea of Communism', in *Rise and Fall of Communism*, Harpercollins (ebook), pp. 1-25; 587-601.
12. J. McCormick, (2007) 'Communist and Post-Communist States', in *Comparative Politics in Transition*, United Kingdom: Wadsworth, pp. 195-209
13. P. Duara, (2004) 'Introduction: The Decolonization of Asia and Africa in the Twentieth Century', in P. Duara, (ed), *Decolonization: Perspective From Now and Then*. London: Routledge, pp. 1-18.
14. J. Chiryankandath, (2008) 'Colonialism and Post-Colonial Development', in P. Burnell, et. al, *Politics in the Developing World*. New Delhi: Oxford University Press, pp. 31-52.
15. M. Mohanty, (1999) 'Colonialism and Discourse in India and China', Available at [http://www.ignca.nic.in/ks\\_40033.html](http://www.ignca.nic.in/ks_40033.html) http, Accessed: 24.03.2011.
16. L. Barrington et. al (2010) *Comparative Politics - Structures & Choices*, Boston, Wadsworth, pp. 212-13; 71-76; 84-89.
17. M. Grant, (2009) 'United Kingdom Parliamentary System' in *The UK Parliament*. Edinburgh:Edinburgh University Press, pp. 24-43
18. P. Rutland, (2007) 'Britain', in J. Kopstein and M. Lichbach. (eds.) *Comparative Politics: Interest, Identities and Institutions in a Changing Global Order*. Cambridge: Cambridge University Press, pp. 39-79

## PLSACOR06T

1. N. Henry, *Public Administration and Public Affairs*, 12th edition. New Jersey: Pearson, 2013
2. M. Bhattacharya, (2012) *Restructuring Public Administration: A New Look*, New Delhi: Jawahar Publishers,
3. P. Dunleavy and C. Hood, (1994) "From Old Public Administration to New Public Management", *Public Money and Management*, Vol. XIV No-3,
4. M. Bhattacharya, (2011) *New Horizons of Public Administration*, New Delhi: Jawahar Publishers,
5. Basu, Rumki, (2014) *Public Administration: Concepts and Theories* Sterling Publishers, New Delhi
6. F. Taylor, 'Scientific Management', in J. Shafritz, and A. Hyde, (eds.) *Classics of Public Administration*, 5th Edition. Belmont: Wadsworth, 2004

7. P. Mouzelis, 'The Ideal Type of Bureaucracy' in B. Chakrabarty, And M. Bhattacharya, (eds), *Public Administration: A Reader*, New Delhi: Oxford University Press, 2003
8. E. J. Ferreira, A. W. Erasmus and D. Groenewald , *Administrative Management*, Juta Academics, 2010
9. Warren. G. Bennis, *Beyond Bureaucracy*, Mc Graw Hill, 1973
10. B. Miner, 'Elton Mayo and Hawthorne', in *Organisational Behaviour 3: Historical Origins and the Future*. New York: M.E. Sharpe, 2006
11. S. Maheshwari, *Administrative Thinkers*, New Delhi: Macmillan, 2009
12. R. Arora, 'Riggs' Administrative Ecology' in B. Chakrabarty and M. Bhattacharya (eds), *Public Administration: A reader*, New Delhi, Oxford University Press, 2003
13. F. Riggs, *Administration in Developing Countries: The Theory of Prismatic Society*. Boston:Houghton Mifflin,1964
14. Peter Drucker, *Innovation and Entrepreneurship*, Harper Collins,1999
15. Peter F. Drucker , *The Practice of Management*, Harper Collins, 2006
16. T. Dye, (1984) *Understanding Public Policy*, 5th Edition. U.S.A: Prentice Hall, pp. 1-44
17. *The Oxford Handbook of Public Policy* ,OUP,2006
18. R.V. Vaidyanatha Ayyar, *Public Policy Making In India*, Pearson,2009
19. M. Bhattacharya, 'Chapter 2 and 4', in *Social Theory, Development Administration and Development Ethics*, New Delhi: Jawahar Publishers, 2006
20. F. Riggs,*The Ecology of Public Administration, Part 3*, New Delhi: Asia Publishing House, 1961
21. M. Bhattacharya, *Public Administration: Issues and Perspectives*, New Delhi: Jawahar Publishers, 2012
22. U. Medury, *Public administration in the Globalization Era*, New Delhi: Orient Black Swan,2010
23. M. Bhattacharya, 'Contextualizing Governance and Development' in B. Chakrabarty and
24. M. Bhattacharya, (eds.) *The Governance Discourse*. New Delhi: Oxford University Press,1998
25. B. Chakrabarty, *Reinventing Public Administration: The India Experience*. New Delhi: Orient Longman, 2007
26. Camila Stivers, *Gender Images In Public Administration*, California : Sage Publishers,2002
27. Nivedita Menon [ed.], *Gender and Politics*, Delhi: Oxford University Press, 1999
28. Simone De Beauvoir, *The Second Sex*, London: Picador, 1988
29. Soma Ghosh,(2015),Jana Prasasan Tatto O Pryog, Kolkata, Progressive
30. Debasis Chakraborty, GanaPrasasan

31. Pradipta Mukherjee(ed), Prasasanik totto, Kolkata, Mitram

32. 'Do' , Bharatiya Prasasan, Kolkata, Mitram,

## PLSACOR07T

1. M. Nicholson,(2002) *International Relations: A Concise Introduction*,New York: Palgrave, pp. 1-4.
2. R. Jackson and G. Sorensen, (2007) *Introduction to International Relations: Theories and Approches*, 3rd Edition, Oxford: Oxford University Press, pp. 2-7
3. S. Joshua. Goldstein and J. Pevehouse, (2007) *International Relations*, New York: Pearson Longman, 2007, pp. 29-35
4. C. Brown and K. Ainley, (2009) *Understanding International Relations*, Basingstoke: Palgrave,pp. 1-16.
5. J. Baylis and S. Smith (eds), (2008) *The Globalization of World Politics: An Introduction to International Relations*, New York: Oxford University Press, pp. 1-6.
6. Rumki Basu, (ed)(2012) *International Politics: Concepts, Theories and Issues* New Delhi, Sage.
7. R. Mansbach and K. Taylor,(2012)*Introduction to Global Politics*, New York: Routledge, pp.33-68.
8. J. Baylis, S. Smith and P. Owens, (2008) *The Globalization of World Politics: An Introduction to International Relations*, New York: Oxford University Press, pp. 36-89.
9. R. Mansbach and K.Taylor,(2008)*Introduction to Global Politics*,New York: Routledge, pp.70-135.
10. E. Hobsbawm, (1995) *Age of Extremes: The Short Twentieth Century 1914-1991*, Vikings.
11. E. Carr, (1981) *The Twenty Years Crisis, 1919-1939: An Introduction to the Study of International Relations*, London: Macmillan
12. H. Morgenthau, (2007) 'Six Principles of Political Realism', in R. Art and R. Jervis, *International Politics*, 8th Edition, New York: Pearson Longman, pp. 7-14.
13. K. Waltz, (2007) 'The Anarchic Structure of World Politics', in R. Art and R. Jervis, *International Politics*, 8th Edition, New York: Pearson Longman, pp. 29-49.
14. J. Goldstein and J. Pevehouse, (2007) *International Relations*, New York: Pearson Longman
15. Wallerstein, (2000) 'The Rise and Future Demise of World Capitalist System: Concepts for Comparative Analysis', in Michael Smith and Richard Little (eds), *Perspectives on World Politics*, New York: Routledge, pp. 305-317.

16. J. Tickner, (2007) 'A Critique of Morgenthau's Principles of Political Realism', in R. Art and R. Jervis, *International Politics*, 8th Ed., New York: Pearson Longman, pp. 15-28.
17. F. Halliday, (1994) *Rethinking International Relations*, London: Macmillan, pp. 147-166.
18. Acharya and B. Buzan, (2007) 'Why Is There No Non- Western IR Theory: Reflections on and From Asia', *International Relations Of The Asia- Pacific*, Vol 7(3), pp. 285-286.
19. Taylor, A.J.P. (1961) *The Origins of the Second World War*. Harmondsworth: Penguin, pp.29-65.
20. Calvocoressi, P. (2001) *World Politics: 1945—2000*. Essex: Pearson, pp. 3-91.
21. Scott, L. (2005) 'International History, 1945-1990' in Baylis, J. and Smith, S. (eds.) (2008) *The Globalization of World Politics. An Introduction to International Relations*. 4th edn. Oxford: Oxford University Press
22. Brezeznski, Z. (2005) *Choice: Global Dominance or Global Leadership*. New York: Basic Books, pp. 85-127
23. Gill, S. (2005) 'Contradictions of US Supremacy' in Panitch, L. and Leys, C. (eds.) *Socialist Register: The Empire Reloaded*. London: Merlin Press. 2004, London, Merlin Press and New York, Monthly Review Press. *Socialist Register*, pp.24-47.
24. Therborn, G. (2006) 'Poles and Triangles: US Power and Triangles of Americas, Asia and Europe' in Hadiz, V.R. (ed.) *Empire and Neo Liberalism in Asia*. London: Routledge, pp.23-37

## **PLSACOR08T**

1. M. Pennington, (2009) 'Theory, Institutional and Comparative Politics', in J. Bara and Pennington. (eds.) *Comparative Politics: Explaining Democratic System*. Sage Publications, New Delhi, pp. 13-40.
2. M. Howard, (2009) 'Culture in Comparative Political Analysis', in M. Lichback and A. Zuckerman, pp. 134- S. (eds.) *Comparative Political: Rationality, Culture, and Structure*. Cambridge: Cambridge University Press.
3. B. Rosamond, (2005) 'Political Culture', in B. Axford, et al. *Politics*, London: Routledge, pp. 57-81.
4. P. Hall, Taylor and C. Rosemary, (1996) 'Political Science and the Three New Institutionalism', *Political Studies*. XLIV, pp. 936-957.

5. L. Rakner, and R. Vicky, (2011) 'Institutional Perspectives', in P. Burnell, et .al. (eds.) *Political in the Developing World*. Oxford: Oxford University Press, pp. 53-70.
6. Heywood, (2002) 'Representation, Electoral and Voting', in *Politics*. New York: Palgrave, pp. 223-245.
7. Evans, (2009) 'Elections Systems', in J. Bara and M. Pennington, (eds.) *Comparative politics*. New Delhi: Sage Publications, pp. 93-119.
8. R. Moser, and S. Ethan, (2004) 'Mixed Electoral Systems and Electoral System Effects: Controlled Comparison and Cross-national Analysis', in *Electoral Studies*. 23, pp. 575-599.
9. Cole, (2011) 'Comparative Political Parties: Systems and Organizations', in J. Ishiyama, and M. Breuning, (eds) *21st Century Political Science: A Reference Book*. Los Angeles: Sage Publications, pp. 150-158.
10. Heywood, (2002) 'Parties and Party System', in *Politics*. New York : Palgrave, pp. 247-268.
11. B. Criddle, (2003) 'Parties and Party System', in R. Axtmann, (ed.) *Understanding Democratic Politics: An Introduction*. London: Sage Publications, pp. 134-142.
12. T. Landman, (2003) 'Transition to Democracy', in *Issues and Methods of Comparative Methods: An Introduction*. London: Routledge, pp. 185-215.
13. K. Newton, and J. Deth, (2010) 'Democratic Change and Persistence', in *Foundations of Comparative Politics: Democracies of the Modern World*. Cambridge: Cambridge University Press, pp. 53-67.
14. J. Haynes, (1999) 'State and Society', in *The Democratization*. Oxford: Blackwell, pp. 20-38;
15. M. Burgess, (2006) *Comparative Federalism: Theory and Practice*. London: Routledge, pp.135-161.
16. R. Watts, (2008) 'Introduction', in *Comparing Federal Systems*. Montreal and Kingston: McGill Queen's University Press, pp. 1-27
17. R. Saxena, (2011) 'Introduction', in Saxena, R (eds.) *Varieties of Federal Governance: Major Contemporary Models*. New Delhi: Cambridge University Press

## **PLSACOR09T**

1. T. Dye, (1984) *Understanding Public Policy*, 5th Edition. U.S.A: Prentice Hall
2. R.B. Denhardt and J.V. Denhardt, (2009) *Public Administration*, New Delhi: Brooks/Cole

3. J. Anderson, (1975) *Public Policy Making*. New York: Thomas Nelson and sons Ltd.
4. M. Howlett, M. Ramesh, and A. Perl, (2009), *Studying Public Policy: Policy Cycles and Policy subsystems*, 3rd edition, Oxford: Oxford University Press
5. T. Dye, (2002) *Understanding Public Policy*, New Delhi: Pearson
6. Y. Dror, (1989) *Public Policy Making Reexamined*. Oxford: Transaction Publication
7. Satyajit Singh and Pradeep K. Sharma [eds.] *Decentralisation: Institutions And Politics In Rural India*, OUP,2007
8. N.G.Jayal, *Democracy and The State: Welfare, Secular and Development in Contemporary India*, Oxford : Oxford University Press,1999
9. Bidyut Chakrabarty, *Reinventing Public Administration: The Indian Experience*, Orient Longman,2007
10. Gabriel Almond and Sidney Verba, *The Civic Culture*, Boston: Little Brown, 1965 M.P.Lester, *Political Participation- How and Why do People Get Involved in Politics* Chicago: McNally, 1965
11. Henry, N.(1999) *Public Administration and Public Affairs*. New Jersey:Prentice Hall Caiden, N.(2004) ‘ Public Budgeting Amidst Uncertainty and Instability’, in Shafritz, J.M. &
12. Hyde, A.C. (eds.) *Classics of Public Administration*. Belmont: Wadsworth
13. R. Putnam , *Making Democracy Work* , Princeton University Press, 1993 Jenkins, R. and Goetz, A.M. (1999) ‘Accounts and Accountability: Theoretical Implications of the Right to Information Movement in India’, in *Third World Quarterly*. June
14. Sharma, P.K. & Devasher, M. (2007) ‘Right to Information in India’ in Singh, S. and Sharma, P. (eds.) *Decentralization: Institutions and Politics in Rural India*. New Delhi: Oxford University Press
15. Vasu Deva, *E-Governance In India: A Reality*, Commonwealth Publishers, 2005 *World Development Report*, World Bank, Oxford University Press, 1992.
16. Jean Drèze and Amartya Sen, *India, Economic Development and Social Opportunity*, Oxford: Oxford University Press, 1995
17. J.Dreze and Amartya Sen, *Indian Development: Selected Regional Perspectives*, Oxford: Clareland Press, 1997
18. Reetika Khera- Rural Poverty And Public Distribution System, EPW, Vol-XLVIII, No.45-46, Nov 2013
19. Basu Rumki (2015) *Public Administration in India Mandates, Performance and Future Perspectives*, New Delhi, Sterling Publishers



- [www.un.org/millenniumgoals](http://www.un.org/millenniumgoals)
- <http://www.cefsindia.org>
- [www.righttofoodindia.org](http://www.righttofoodindia.org)

## PLSACOR10T

1. G. Ritzer, (2010) *Globalization: A Basic Text*, Sussex: Wiley-Blackwell.
2. M. Strager, (2009) *Globalization: A Very Short Introduction*, London: Oxford University Press, pp. 1-16.
3. R. Keohane and J. Nye Jr, (2000) 'Globalization: What's New? What's Not? (And So What?)', in *Foreign Policy*, No 118, pp. 104-119.
4. McGrew, (2011) 'Globalization and Global Politics', in J. Baylis, S. Smith and P. Owens (eds.) *Globalization of World Politics: An Introduction to International Relations*, New York: Oxford University Press, pp. 14-31.
5. Heywood, (2011) *Global Politics*, New York: Palgrave-McMillan.
6. W. Ellwood, (2005) *The No-nonsense Guide to Globalization*, Jaipur: NI-Rawat Publications, pp. 12-23.
7. T. Cohn, (2009) *Global Political Economy: Theory and Practice*, pp. 130-140 (IMF), 208-218 (WTO).
8. Narlikar, (2005) *The World Trade Organization: A Very Short Introduction*, New York: Oxford University Press, pp. 22-98.
9. J. Goldstein, (2006) *International Relations*, New Delhi: Pearson, pp. 392-405 (MNC).
10. D. Held et al, (1999) *Global Transformations: Politics, Economics and Culture*, California: Stanford University Press, pp. 242-282 (MNC).
11. T. Cohn, (2009) *Global Political Economy*, New Delhi: Pearson, pp. 250-323 (MNC).
12. Appadurai, (2000) 'Grassroots Globalization and the Research Imagination', in *Public Culture*, Vol. 12(1), pp. 1-19.
13. R. O'Brien et al., (2000) *Contesting Global Governance: Multilateral Economic Institutions and Global Social Movements*, Cambridge: Cambridge University Press, pp. 1-23.
14. J. Fisher, (1998) *Non-Governments: NGOs and Political Development in the Third World*, Connecticut: Kumarian Press, pp. 1- 37 (NGO).

15. N. Carter, (2007) *The Politics of Environment: Ideas, Activism, Policy*, Cambridge: Cambridge University Press, pp. 13-81.
16. K. Shimko, (2005) *International Relations Perspectives and Controversies*, New York: Houghton-Mifflin, pp. 317-339.
17. D. Howlett, (2011) 'Nuclear Proliferation', in J. Baylis, S. Smith and P. Owens (eds.) *Globalization of World Politics*, New York: Oxford University Press, pp. 384-397.
18. Acharya, (2011) 'Human Security', in J. Baylis, S. Smith and P. Owens (eds.) *Globalization of World Politics*, New York: Oxford University Press, pp. 480-493.
19. J. Rosenau, (1992) 'Governance, Order, and Change in World Politics', in J. Rosenau, and
20. E. Czempiel (eds.) *Governance without Government: Order and Change in World Politics*, Cambridge: Cambridge University Press, pp. 1-29.

#### **PLSACOR11T**

1. Skoble and T. Machan, (2007) *Political Philosophy: Essential Selections*. New Delhi: Pearson Education
2. R. Kraut, (1996) 'Introduction to the study of Plato', in R. Kraut (ed.) *The Cambridge Companion to Plato*. Cambridge: Cambridge University Press, pp. 1-50.
3. C. Reeve, (2009) 'Plato', in D. Boucher and P. Kelly, (eds) *Political Thinkers: From Socrates to the Present*, Oxford: Oxford University Press, pp. 62-80
4. T. Burns, (2009) 'Aristotle', in D. Boucher, and P. Kelly, (eds) *Political Thinkers: From Socrates to the Present*. Oxford: Oxford University Press, pp.81-99. C. Taylor, (1995) 'Politics', in J. Barnes (ed.), *The Cambridge Companion to Aristotle*. Cambridge: Cambridge University Press, pp. 232-258
5. J. Coleman, (2000) 'Aristotle', in J. Coleman *A History of Political Thought: From Ancient Greece to Early Christianity*, Oxford: Blackwell Publishers, pp.120-186
6. D. Hutchinson, (1995) 'Ethics', in J. Barnes, (ed.), *The Cambridge Companion to Aristotle* Cambridge: Cambridge University Press, pp. 195-232.
7. Q. Skinner, (2000) 'The Adviser to Princes', in *Machiavelli: A Very Short Introduction*, Oxford: Oxford University Press, pp. 23-53

8. J. Femia, (2009) 'Machiavelli', in D. Boucher, and P. Kelly, (eds) *Political Thinkers: From Socrates to the Present*. Oxford: Oxford University Press, pp. 163-184
9. C. Macpherson (1962) *The Political Theory of Possessive Individualism: Hobbes to Locke*. Oxford University Press, Ontario..
10. J. Waldron, (2009) 'John Locke', in D. Boucher and P. Kelly, (eds) *Political Thinkers: From Socrates to the Present*. Oxford: Oxford University Press

#### **PLSACOR12T**

1. B. Parekh, (1986) 'Some Reflections on the Hindu Tradition of Political Thought', in T. Pantham, and K. Deutsch (eds.), *Political Thought in Modern India*, New Delhi: Sage Publications, pp. 17-31.
2. Altekar, (1958) 'The Kingship', in *State and Government in Ancient India*, 3rd edition, Delhi: Motilal Banarsidass, pp. 75-108.
3. M. Shakir, (1986) 'Dynamics of Muslim Political Thought', in T. Pantham, and K. Deutsch (eds.), *Political Thought in Modern India*, New Delhi: Sage Publications, pp. 142- 160
4. G. Pandey, (1978) *Sraman Tradition: Its History and Contribution to Indian Culture*, Ahmedabad: L. D. Institute of Indology, pp. 52-73.
5. S. Saberwal, (2008) 'Medieval Legacy', in *Spirals of Contention*, New Delhi: Routledge, pp.1- 31
6. *The Mahabharata* (2004), Vol. 7 (Book XI and Book XII, Part II), Chicago and London: University of Chicago Press.
7. V. Varma, (1974) *Studies in Hindu Political Thought and Its Metaphysical Foundations*, Delhi: Motilal Banarsidass, pp. 211- 230.

8. B. Chaturvedi, (2006) 'Dharma-The Foundation of Raja-Dharma, Law and Governance', in *The Mahabharata: An Inquiry in the Human Condition*, Delhi: Orient Longman, pp. 418- 464.
9. Manu, (2006) 'Rules for Times of Adversity', in P. Olivelle, (ed. & trans.) *Manu's Code of Law: A Critical Edition and Translation of the Manava- Dharamsastra*, New Delhi: OUP, pp. 208- 213.
10. V. Mehta, (1992) 'The Cosmic Vision: Manu', in *Foundations of Indian Political Thought*, Delhi: Manohar, pp. 23- 39.
11. R. Sharma, ( 1991) 'Varna in Relation to Law and Politics (c 600 BC-AD 500)', in *Aspects of Political Ideas and Institutions in Ancient India*, Delhi: Motilal Banarsidass, pp. 233- 251.
12. Kautilya, (1997) 'The Elements of Sovereignty' in R. Kangle (ed. and trns.), *Arthashastra of Kautilya*, New Delhi: Motilal Publishers, pp. 511- 514.
13. V. Mehta, (1992) 'The Pragmatic Vision: Kautilya and His Successor', in *Foundations of Indian Political Thought*, Delhi: Manohar, pp. 88- 109.
14. R. Kangle, (1997) *Arthashastra of Kautilya-Part-III: A Study*, Delhi: Motilal Banarsidass, rpt., pp. 116- 142.
15. S. Collins, (ed), (2001) *Agganna Sutta: An Annotated Translation*, New Delhi: Sahitya Academy, pp. 44-49.
16. S. Collins, (2001) 'General Introduction', in *Agganna Sutta: The Discussion on What is Primary (An Annotated Translation from Pali)*, Delhi: Sahitya Akademi, pp. 1- 26.
17. B. Gokhale, (1966) 'The Early *Buddhist* View of the State', in *The Journal of Asian Studies*, Vol. XXVI, (1), pp. 15- 22.
18. Habib, (1998) 'Ziya Barni's Vision of the State', in *The Medieval History Journal*, Vol. 2, (1), pp. 19- 36.
19. M. Alam, (2004) 'Sharia Akhlaq', in *The Languages of Political Islam in India 1200- 1800*, Delhi: Permanent Black, pp. 26- 43
20. Fazl, (1873) *The Ain-i Akbari* (translated by H. Blochmann), Calcutta: G. H. Rouse, pp. 47-57.
21. V. Mehta, (1992) 'The Imperial Vision: Barni and Fazal', in *Foundations of Indian Political Thought*, Delhi: Manohar, pp. 134- 156.
22. M. Alam, (2004) 'Sharia in Naserean Akhlaq', in *Languages of Political Islam in India 1200- 1800*, Delhi: Permanent Black, pp. 46- 69.
23. I. Habib, (1998) 'Two Indian Theorist of The State: Barani and Abul Fazal', in *Proceedings of the Indian History Congress*. Patiala, pp. 15- 39.

24. Kabir. (2002) *The Bijak of Kabir*, (translated by L. Hess and S. Singh), Delhi: Oxford University Press, No. 30, 97, pp. 50- 51 & 69- 70.
25. V. Mehta, (1992) *Foundation of Indian Political Thought*, Delhi: Manohar, pp. 157- 183.
26. G. Omvedt, (2008) 'Kabir and Ravidas, Envisioning Begumpura', in *Seeking Begumpura: The Social Vision of Anti Caste Intellectual*, Delhi: Navayana, pp. 91- 107.
27. L. Hess and S. Singh, (2002) 'Introduction', in *The Bijak of Kabir*, New Delhi: Oxford University Press, pp. 3- 35.

### **PLSACOR13T**

1. Kant. (1784) 'What is Enlightenment?,' available at <http://theliterarylink.com/kant.html>, Accessed: 19.04.2013
2. S. Hall (1992) 'Introduction', in *Formations of Modernity* UK: Polity Press pages 1-16
3. B. Nelson, (2008) *Western Political Thought*. New York: Pearson Longman, pp. 221-255.
4. M. Keens-Soper, (2003) 'Jean Jacques Rousseau: The Social Contract', in M. Forsyth and M. Keens-Soper, (eds) *A Guide to the Political Classics: Plato to Rousseau*. New York: Oxford University Press, pp. 171-202.
5. C. Jones, (2002) 'Mary Wollstonecraft's *Vindications* and their Political Tradition' in C.Johnson, (ed.) *The Cambridge Companion to Mary Wollstonecraft*, Cambridge: Cambridge University Press, pp. 42-58.
6. S. Ferguson, (1999) 'The Radical Ideas of Mary Wollstonecraft', in *Canadian Journal of Political Science* XXXII (3), pp. 427-50, Available at
7. <http://digitalcommons.ryerson.ca/politics>, Accessed: 19.04.2013.
8. P. Kelly, (2003) 'J.S. Mill on Liberty', in D. Boucher, and P. Kelly, (eds.) *Political Thinkers: From Socrates to the Present*. New York: OUP, pp. 324-359.

9. V. Bryson, (1992) 'Marxist Feminism in Russia' in *Feminist Political Theory*, London: Palgrave Macmillan, pp. 114-122
10. A. Bloom, (1987) 'Jean-Jacques Rousseau', in Strauss, L. and Cropsey, J. (eds.) *History of Political Philosophy*, 2nd edition. Chicago: Chicago University Press, pp. 559-580.
11. Selections from *A Vindication of the Rights of Woman*, Available at <http://oregonstate.edu/instruct/phl302/texts/wollstonecraft/womana.html#CHAPTER%20II>, Accessed: 19.04.2013.
12. A. Skoble and T. Machan, (2007) *Political Philosophy: Essential Selections*, New Delhi: Pearson Education, pp. 328-354.

#### **PLSACOR14T**

1. V. Mehta and T. Pantham (eds.), (2006) '*A Thematic Introduction to Political Ideas in Modern India: Thematic Explorations, History of Science, Philosophy and Culture in Indian civilization*' Vol. 10, Part: 7, New Delhi: Sage Publications, pp. xxvii-ixi.
2. D. Dalton, (1982) 'Continuity of Innovation', in *Indian Idea of Freedom: Political Thought of Swami Vivekananda, Aurobindo Ghose, Rabindranath Tagore and Mahatma Gandhi*, Academic Press: Gurgaon, pp. 1-28.
3. R. Roy, (1991) 'The Precepts of Jesus, the Guide to Peace and Happiness', S. Hay, (ed.) *Sources of Indian Tradition, Vol. 2*. Second Edition. New Delhi: Penguin, pp. 24-29.
4. C. Bayly, (2010) 'Rammohan and the Advent of Constitutional Liberalism in India 1800-1830', in Sh. Kapila (ed.), *An intellectual History for India*, New Delhi: Cambridge University Press, pp. 18- 34.
5. T. Pantham, (1986) 'The Socio-Religious Thought of Rammohan Roy', in Th. Panthom and K.Deutsch, (eds.) *Political Thought in Modern India*, New Delhi: Sage, pp.32-52
6. S. Sarkar, (1985) 'Rammohan Roy and the break With the Past', in *A Critique on colonial India*, Calcutta: Papyrus, pp. 1-17.

7. P. Ramabai, (2000) 'Woman's Place in Religion and Society', in M. Kosambi (ed.), *Pandita Ramabai Through her Own Words: Selected Works*, New Delhi: Oxford University Press, pp. 150-155.
8. M. Kosambi,(1988)'Women's Emancipation and Equality: Pandita Ramabai's Contribution to Women's Cause', in *Economic and Political Weekly*, Vol. 23(44), pp.38-49.
9. U. Chakravarti, (2007) *Pandita Ramabai - A Life and a Time*, New Delhi: Critical Quest, pp. 1-40.
10. G. Omvedt, (2008) 'Ramabai: Women in the Kingdom of God', in *Seeking Begumpura: The Social Vision of Anti Caste Intellectuals*, New Delhi: Navayana. pp. 205-224.
11. A. Sen, (2003) 'Swami Vivekananda on History and Society', in *Swami Vivekananda*, Delhi:Oxford University Press, pp. 62- 79.
12. M. Gandhi, (1991) 'Satyagraha: Transforming Unjust Relationships through the Power of the Soul', in S. Hay (ed.), *Sources of Indian Tradition*, Vol. 2.Second Edition, New Delhi: Penguin, pp. 265-270.
13. A. Parel, (ed.), (2002) 'Introduction', in *Gandhi, freedom and Self Rule*, Delhi: Vistaar Publication.
14. D. Dalton, (1982) *Indian Idea of Freedom: Political Thought of Swami Vivekananda,Aurobindo Ghose, Mahatma Gandhi and Rabindranath Tagore*, Gurgaon: The Academic Press, pp. 154- 190.
15. B. Ambedkar, (1991) 'Constituent Assembly Debates', S. Hay (ed.), *Sources of Indian Tradition*, Vol. 2, Second Edition, New Delhi: Penguin, pp. 342-347.
16. P. Chatterjee, (2005) 'Ambedkar and the Troubled times of Citizenship', in V. Mehta and Th.Pantham (eds.), *Political ideas in modern India: Thematic Explorations*, New Delhi: Sage, pp.73-92.
17. R. Tagore, (1994) 'The Nation', S. Das (ed.), *The English Writings of Rabindranath Tagore*, Vol. 3, New Delhi: Sahitya Akademi, pp. 548-551.R. Chakravarty, (1986) 'Tagore, Politics and Beyond', in Th. Panthams and K. Deutsch (eds.),*Political Thought in Modern India*, New Delhi: Sage, pp. 177-191.
18. A. Nandy, (1994) 'Rabindranath Tagore & Politics of Self', in *Illegitimacy of Nationalism*,Delhi: Oxford University Press, pp. 1-50.
19. M. Iqbal, (1991) 'Speeches and Statements', in S. Hay (ed.), *Sources of Indian Tradition*, Vol.2, Second Edition, New Delhi: Penguin, pp. 218-222.

20. A. Engineer, (1980) 'Iqbal's Reconstruction of Religious Thought in Islam', in *Social Scientist*, Vol.8 (8), pp. 52-63. Madani, (2005) *Composite Nationalism and Islam*, New Delhi: Manohar, pp. 66-91.
21. V.Savarkar, 'Hindutva is Different from Hinduism', available at <http://www.savarkar.org/en/hindutva-essentials-hindutva/hindutva-different-hinduism>,
22. J. Sharma, (2003) *Hindutva: Exploring the Idea of Hindu Nationalism*, Delhi: Penguin, pp.124-172
23. J. Nehru, (1991) 'Selected Works', in S. Hay (ed.), *Sources of Indian Tradition, Vol. 2*, Second Edition, New Delhi: Penguin, pp. 317-319. R. Pillai, (1986) 'Political thought of Jawaharlal Nehru', in Th. Pantham, and K. Deutsch (eds.), *Political Thought in Modern India*, New Delhi: Sage, pp. 260- 274.
24. P. Chatterjee, (1986) 'The Moment of Arrival: Nehru and the Passive Revolution', in *Nationalist Thought and the Colonial World: A Derivative Discourse?* London: Zed Books, pp.131-166
25. S. Sinha, (2010) 'Lohia's Socialism: An underdog's perspective', in *Economic and Political Weekly*, Vol. XLV (40) pp. 51-55.
26. A. Kumar, (2010) 'Understanding Lohia's Political Sociology: Intersectionality of Caste, Class, Gender and Language Issue', in *Economic and Political Weekly*, Vol. XLV (40), pp. 64-70.



## Interdisciplinary

**For Honours students, other than Political Science**

PLSHGEC	Semester I			
Course Code	Paper – I Introduction to Political Theory	Lectures	Credits (Theory+ Tutorial) X 15 weeks	Marks
PLSHGEC01T	<b>Module I. Introducing the subject</b>			
	a. What is Politics? b. What is Political Theory and what is its relevance?	10	5+1	75
	<b>Module II. Concepts: Democracy, Liberty, Equality, Justice, Rights, Gender, Citizenship, Civil Society and State</b>	30		
	<b>Module III. Debates in Political Theory:</b>			
	a. Is democracy compatible with economic growth? b. On what grounds is censorship justified and what are its limits? c. Does protective discrimination violate principles of fairness? d. Should the State intervene in the institution of the family?	35		

PLSHGEC	Semester II			
Course Code	<u>Paper - II</u> <u>Indian Government and Politics</u>	Lectures	Credits (Theo +Tutorial) X 15 weeks	Marks
PLSHGEC02T	<b>Structure, Process, Behaviour.</b>			
	<b>Module I. Evolution:</b>  Making of the Constitution by the Constitutional Advisor, the Drafting Committee and finally the Constituent assembly  <b>Module II. Constituion of India(Article-wise)</b>  a)Preamble b)Fundamental Rights c)Directive Principles of State Policy d)Federalism  <b>Module III. Constitution of India</b>  a)Union Government: Executive(total as it is in the constitution)Legislature(total, according to the Constitution) Judiciary(total, following the articles of the constitution with two additional dimensions: landmark decisions and PIL b)State Government: Executive, Legislature, Judiciary (In the same way as the Union government is to be studied) c)Public Services: Union Service, State service, All India Services(total that includes recruitment, training, service conditions) c)Public service Commission(UPSC and PSC)	20  20  35	5+1	75

**GENERIC ELECTIVE – 3**

<b>PLSHGEC</b>	<b>Semester III</b>			
Course Code	<b>Paper – III Comparative Government and Politics</b>	Lectures	Credits (Theo +Tutorial )X <b>15</b> weeks	Marks
<b>PLSHGEC03T</b>	<b>Module I. Understanding Comparative Politics</b>  a. Nature and scope b. Going beyond Eurocentrism	<b>15</b>	<b>5+1</b>	<b>75</b>
	<b>Module II. Historical context of Modern Government</b>  a. Capitalism: meaning and development: globalization b. Socialism: meaning, growth and development c. Colonialism and decolonization: meaning, context, forms of colonialism; anti-colonialism struggles and process of decolonization	<b>35</b>		
	<b>Module III. Themes for comparative analysis</b> A comparative study of constitutional developments and political economy in the following countries: Britain, Brazil and China.	<b>25</b>		

PLSHGEC	Semester IV			
Course Code	Paper – IV Introduction to International Relations	Lectures	Credits (Theo +Tutorial )X 15 weeks	Marks
PLSHGEC04T	<p><b>I. Studying International Relations</b></p> <p>a. How do you understand International Relations: Levels of Analysis</p> <p>b. History and IR: Emergence of the International State System</p> <p><b>II. Theoretical Perspectives</b></p> <p>a. Classical Realism &amp; Neo-Realism</p> <p>b. Liberalism &amp; Neo-liberalism</p> <p>c. Marxist Approaches</p> <p>d. <b>Feminist Perspectives</b></p> <p><b>III. An Overview of Twentieth Century IR History</b></p> <p>a. World War I: Causes and Consequences</p> <p>b. Significance of the Bolshevik Revolution</p> <p>c. Rise of Fascism / Nazism</p> <p>d. World War II : Causes and Consequences</p> <p>e. Cold War: Different Phases</p> <p>f. Emergence of the Third World</p> <p>g. Collapse of the USSR and the End of the Cold War</p> <p><b>h.</b> Post Cold War Developments and Emergence of Other Power Centers of Power</p> <p><b>i.</b> Indian as an Emerging Power Indian Foreign Policy</p>	<p>15</p> <p>25</p> <p>35</p>	<p>5+1</p>	<p>75</p>

**READING LIST**

## PLSHGEC01T - Paper I- Introduction to Political Theory

Bhargava, R. (2008) 'What is Political Theory', in Bhargava, R. and Acharya, A. (eds.) *Political Theory: An Introduction*. New Delhi: Pearson Longman, pp. 2-17.

Bhargava, R. (2008) 'Why Do We Need Political Theory', in Bhargava, R. and Acharya, A. (eds.) *Political Theory: An Introduction*. New Delhi: Pearson Longman, pp. 18-37.

Sriranjani, V. (2008) 'Liberty', in Bhargava, R. and Acharya, A. (eds.) *Political Theory: An Introduction*. New Delhi: Pearson Longman, pp. 40-57.

Acharya, A. (2008) 'Equality', in Bhargava, R. and Acharya, A. (eds.) *Political Theory: An Introduction*. New Delhi: Pearson Longman, pp. 58-73.

Menon, K. (2008) 'Justice', in Bhargava, R. and Acharya, A. (eds.) *Political Theory: An Introduction*. New Delhi: Pearson Longman, pp. 74-82.

Talukdar, P.S. (2008) 'Rights', in Bhargava, R. and Acharya, A. (eds.) *Political Theory: An Introduction*. New Delhi: Pearson Longman, pp. 88-105.

Srinivasan, J. (2008) 'Democracy', in Bhargava, R. and Acharya, A. (eds.) *Political Theory: An Introduction*. New Delhi: Pearson Longman, pp. 106-128.

Roy, A. 'Citizenship', in Bhargava, R. and Acharya, A. (eds.) *Political Theory: An Introduction*. New Delhi: Pearson Longman, pp. 130-147.

Das, S. (2008) 'State', in Bhargava, R. and Acharya, A. (eds.) *Political Theory: An Introduction*. New Delhi: Pearson Longman, pp. 170-187.

Singh, M. (2008) 'Civil Society', in Bhargava, R. and Acharya, A. (eds.) *Political Theory: An Introduction*. New Delhi: Pearson Longman, pp. 188-205.

Menon, N. (2008) 'Gender', in Bhargava, R. and Acharya, A. (eds.) *Political Theory: An Introduction*. New Delhi: Pearson Longman, pp. 224-235.

Sen, A. (2003) 'Freedom Favours Development,' in Dahl, R., Shapiro, I. and Cheibub, A. J. (eds.) *The Democracy Sourcebook*. Cambridge, Massachusetts: MIT Press, pp. 444-446.

Prezowrski, A., et al. (2003) 'Political Regimes and Economic Growth,' in Dahl, R., Shapiro, I. and Cheibub, A. J. (eds.) *The Democracy Sourcebook*. Cambridge, Massachusetts: MIT Press, pp. 447-454.

Sethi, A. (2008) 'Freedom of Speech and the Question of Censorship', in Bhargava, R. and Acharya, A. (eds.) *Political Theory: An Introduction*. New Delhi: Pearson Longman, pp. 308-319.

Acharya, A. (2008) 'Affirmative Action', in Bhargava, R. and Acharya, A. (eds.) *Political Theory: An Introduction*. New Delhi: Pearson Longman, pp. 298-307.

Jha, M. (2001) 'Ramabai: Gender and Caste', in Singh, M.P. and Roy, H. (eds.) *Indian Political Thought: Themes and Thinkers*, New Delhi: Pearson

### **PLSHGEC02T - Paper-II - Indian Government and Politics**

Abbas, H., Kumar, R. & Alam, M. A. (2011) *Indian Government and Politics*. New Delhi: Pearson, 2011.

Chandhoke, N. & Priyadarshi, P. (eds.) (2009) *Contemporary India: Economy, Society, Politics*. New Delhi: Pearson.

Chakravarty, B. & Pandey, K. P. (2006) *Indian Government and Politics*. New Delhi: Sage.

Chandra, B., Mukherjee, A. & Mukherjee, M. (2010) *India After Independence*. New Delhi: Penguin.

Singh, M.P. & Saxena, R. (2008) *Indian Politics: Contemporary Issues and Concerns*. New Delhi: PHI Learning.

Vanaik, A. & Bhargava, R. (eds.) (2010) *Understanding Contemporary India: Critical Perspectives*. New Delhi: Orient Blackswan.

Menon, N. and Nigam, A. (2007) *Power and Contestation: India Since 1989*. London: Zed Book.

Austin, G. (1999) *Indian Constitution: Corner Stone of a Nation*. New Delhi: Oxford University Press.

Austin, G. (2004) *Working of a Democratic Constitution of India*. New Delhi: Oxford University Press.

Jayal, N. G. & Maheta, P. B. (eds.) (2010) *Oxford Companion to Indian Politics*. New Delhi: Oxford University Press.

### **PLSHGEC03T - Paper-III- Comparative Government and Politics**

Bara, J & Pennington, M. (eds.). (2009) *Comparative Politics*. New Delhi: Sage.

Caramani, D. (ed.). (2008) *Comparative Politics*. Oxford: Oxford University Press.

Hague, R. and Harrop, M. (2010) *Comparative Government and Politics: An Introduction*. (Eight Edition). London: Palgrave MacMillan.

Ishiyama, J.T. and Breuning, M. (eds.). (2011) *21st Century Political Science: A Reference Book*. Los Angeles: Sage.

Newton, K. and Deth, Jan W. V. (2010) *Foundations of Comparative Politics: Democracies of The Modern World*. Cambridge: Cambridge University Press.

O'Neil, P. (2009) *Essentials of Comparative Politics*. (Third Edition). New York: WW. Norton & Company, Inc.

Palekar, S.A. (2009) *Comparative Government and Politics*. New Delhi: PHI Learning Pvt. Ltd

Blondel, J. (1996) 'Then and Now: Comparative Politics', *Political Studies*. Vol. 47, Issue 1, pp. 152-160

Chandhoke, N. (1996) 'Limits of Comparative Political Analysis', *Economic and Political Weekly*. vol. 31, No. 4, (January 27), pp. PE 2-PE8.

#### **PLSHGEC04T - Paper-IV- Introduction to International Relations**

William, P., Goldstein, D. M. and Shafritz, J. M. (eds.) (1999) *Classic Readings of International Relations*. Belmont: Wadsworth Publishing Co, pp. 30-58; 92-126.

Art, R. J. and Jervis, R. (eds.) (1999) *International Political Enduring: Concepts and Contemporary Issues*. 5th Edition. New York: Longman, pp. 7-14; 29-49; 119-126.

Jackson, R. and Sorenson, G. (2008) *Introduction to International Relations: Theories and Approaches*. New York: Oxford University Press, pp. 59-96.

Goldstein, J. and Pevehouse, J.C. (2009) *International Relations*. New Delhi: Pearson, pp. 81-111.

Tickner, J. A. (2001) *Gendering World Politics: Issues and Approaches in the Post-Cold War Era*. Columbia University Press.

Baylis, J. and Smith, S. (eds.) (2011) *The Globalization of World Politics: An Introduction to International Relations*. Fifth Edition. Oxford: Oxford University Press, pp. 90-123; 142-159; 262-277.

Wenger, A. and Zimmermann, D. (eds.) (2003) *International Relations: From the Cold World War to the Globalized World*. London: Lynne Rienner, pp. 54-89.

Appadorai and Rajan, M. S. (eds.) (1985) *India's Foreign Policy and Relations*. New Delhi:

South Asian Publishers.

Mewmillians, W.C. and Piotrowski, H. (2001) *The World Since 1945: A History of International Relations*. Fifth edition. London: Lynne Rienner Publishers.

Smith, M., Little, R. and Shackleton, M. (eds.) (1981) *Perspectives on World Politics*. London: Croom Helm.

Indian Foreign Service Institute. (1997, 1998) *India's Foreign Policy: An Agenda for the 21st Century* Vols. 1 & 2, New Delhi: Konark Publishers, pp. 3-41; 102-119.

Ganguly, S. (ed.) (2009) *India's Foreign Policy: Retrospect and Prospect*. New Delhi: Oxford University Press.

Vanaik, A. (1995) *India in a Changing World: Problems, Limits and Successes of Its Foreign Policy*. New Delhi: Orient Longman. pp. 19-41; 63-67; 102-114; 118-124; 132-134.

Basu, Rumki (ed)(2012) *International Politics: Concepts theories and Issues*, New Delhi, Sage Publications India Pvt Ltd.

**DISCIPLINE SPECIFIC ELECTIVE – 1(Interdisciplinary) for Honours students**

**(Any two in Semester - V)**



<b>PLSADSE</b>	<b>Semester V</b>			
Course Code	<b>Paper I</b> <b>Reading Gandhi</b>	Lectures	Credits (Theo +Tutorial) X 15 weeks	Marks
<b>PLSADSE01T</b>	<b>Module I.</b> Gandhi on Modern Civilization and Modern Industrialisation based on Large and Heavy Industries and Alternative Modernity ; critique of development	<b>25</b>	<b>5+1</b>	<b>75</b>
	<b>Module II.</b> Gandhian Thought: Theory and Action: a. Theory of Satyagraha b. Satyagraha in Action : Peasant Satyagraha: Kheda and the Idea of Trusteeship c. Gandhi on all-inclusive Development Sarvodaya – on Untouchability and Dalit emancipation	<b>30</b>		
	<b>Module III.</b> a. <b>Gandhi on Women’s Development and on Women’s Movement</b> b. <b>Gandhi on peace and Preservation of Nature</b>	<b>20</b>		

**READING LIST**

1. B. Parekh, (1997) 'The Critique of Modernity', in Gandhi: A Brief Insight, Delhi: Sterling Publishing Company, pp. 63-74.
2. K. Ishii, (2001) 'The Socio-economic Thoughts of Mahatma Gandhi: As an Origin of Alternative Development', Review of Social Economy. Vol. 59 (3), pp. 297-312.
3. R. Iyer, (ed) (1993) 'Chapter 4' in The Essential Writings of Mahatma Gandhi, New Delhi: Oxford University Press.
4. R. Iyer, (1993) The Essential Writings of Mahatma Gandhi, New Delhi: Oxford University Press, pp. 299-344; 347-373.
5. R. Ramashray, (1984) 'Liberty Versus Liberation', in Self and Society: A Study in Gandhian Thought, New Delhi: Sage Publication.
6. P. Chatterjee, (1986) 'The Moment of Maneuver', in Nationalist Thought and the Colonial World: A derivative discourse?, Delhi: Zed Books.
7. S. Sarkar, (1982) Modern India 1885-1947, New Delhi: Macmillan, pp. 432-39.
8. R. Iyer, (2001) The Moral and Political Thought of Mahatma Gandhi, New Delhi: Oxford University Press. pp. 344-358.
9. R. Mukharjee, (ed) (1995), The Penguin Gandhi Reader, New Delhi: Penguin.
10. Reading of primary texts:- M K Gandhi Chapter VI and XIII "Hind Swaraj" Navjeevan Trust, Ahmedabad, 1910

**DISCIPLINE SPECIFIC ELECTIVE – 2(Any two in Semester - V)**

<b>PLSADSE</b>	<b>Semester V</b>			
<b>Course Code</b>	<b>Paper II</b> <b>Women, Power and Politics</b>	<b>Lectures</b>	<b>Credits (Theo +Tutorial) X 15 weeks</b>	<b>Marks</b>
<b>PLSADSE02T</b>	<b>Module 1. Approaches to understanding Patriarchy</b>  <ul style="list-style-type: none"> <li>• Feminist theorising of the sex/gender distinction. Biologism versus social constructivism</li> <li>• Understanding Patriarchy and Feminism</li> </ul>	<b>25</b>	<b>5+1</b>	<b>75</b>
	<b>Module 2. Schools of Feminism</b>  Liberal, Socialist, Marxist, Radical feminism, New Feminist Schools/Traditions	<b>30</b>		
	<b>Module 3. The Indian Experience</b>  <ul style="list-style-type: none"> <li>• Traditional Historiography and Feminist critiques. Social Reforms Movement and position of women in India. History of Women’s struggle in India</li> <li>• Family in contemporary India - patrilineal and matrilineal practices. Gender Relations in the Family, Patterns of Consumption: Intra Household Divisions, entitlements and bargaining, Property Rights</li> <li>• Understanding Woman’s Work and Labour</li> </ul>	<b>20</b>		

**READING LIST**

## PLSADSE02T - Women, Power and Politics

1. T. Shinde, (1993) 'Stree Purusha Tulna', in K. Lalitha and Susie Tharu (eds), *Women Writing in India*, New Delhi, Oxford University Press, pp. 221-234
2. U. Chakravarti, (2001) 'Pitrasatta Par ek Note', in S. Arya, N. Menon & J. Lokneeta (eds.) *Naarivaadi Rajneeti: Sangharsh evam Muddey*, University of Delhi: Hindi Medium Implementation Board, pp.1-7
3. V Geetha, (2002) *Gender*, Kolkata, Stree, pp. 1-20
4. M. Kosambi, (2007) *Crossing the Threshold*, New Delhi, Permanent Black, pp. 3-10; 40-46
5. N. Menon, (2008) 'Power', in R. Bhargava and A. Acharya (eds), *Political Theory: An Introduction*, Delhi: Pearson, pp.148-157
6. B. Hooks, (2010) 'Feminism: A Movement to End Sexism', in C. Mc Cann and S. Kim (eds), *The Feminist Reader: Local and Global Perspectives*, New York: Routledge
7. K. Millet, (1968) *Sexual Politics*, Available at <http://www.marxists.org/subject/women/authors/millett-kate/sexual-politics.htm>
8. S. de Beauvoir (1997) *Second Sex*, London: Vintage
9. Agnihotri and V. Mazumdar, (1997) 'Changing the Terms of Political Discourse: Women's Movement in India, 1970s-1990s', *Economic and Political Weekly*, 30 (29), pp. 1869-1878.
10. R. Kapur, (2012) 'Hecklers to Power? The Waning of Liberal Rights and Challenges to Feminism in India', in A. Loomba *South Asian Feminisms*, Durham and London: Duke University Press, pp. 333-355
11. P. Swaminathan,(2012)'Introduction', in *Women and Work*, Hyderabad: Orient Blackswan, pp.1-17

**DISCIPLINE SPECIFIC ELECTIVE – 3 (Any two in Semester - V)**

<b>PLSADSE</b>	<b>Semester V</b>				
Course Code	<b>Paper III</b> <b>Understanding Global Politics</b>		Lectures	Credits (Theo +Tutorial) <b>X 15 weeks</b>	Marks
<b>PLSADSE03T</b>	<b>Module I. Globalization: Conceptions and Perspectives</b>		<b>25</b>	5+1	75
	<ul style="list-style-type: none"> <li>a. Understanding Globalization and its Alternative Perspectives</li> <li>b. Political: Debates on Sovereignty and Territoriality</li> <li>c. Global Economy: Its Significance and Anchors of Global Political Economy: IMF, World Bank, WTO, TNCs</li> </ul>				
	<b>Module II. Identity and Culture : Crisis of Coexistence</b>				
	<ul style="list-style-type: none"> <li>a. Global Inequalities</li> <li>b. Violence: Conflict, War and Terrorism</li> <li>c. Global Civil Society : Proliferation of Nuclear Weapons ; International Terrorism: Non-State Actors and State Terrorism; Post 9/11 developments ; Migration ; Human Security</li> </ul>		<b>25</b>		
	<b>Module III. Global Environment</b>		<b>25</b>		
	Ecological Issues: Historical Overview of International Environmental Agreements, Climate Change, Global Commons Debate				

## READING LIST

### **PLSADSE03T - Understanding Global Politics**

- 1.** S. Elden, (2009) ‘Why Is The World Divided Territorially?’, in J. Edkins and M. Zehfuss (eds.) *Global Politics: A New Introduction*, New York: Routledge, pp. 192-219.
- 2.** M. Shapiro, (2009) ‘How Does The Nation- State Work?’, in J. Edkins and M. Zehfuss (eds.) *Global Politics: A New Introduction*, New York: Routledge, pp. 220-243.
- 3.** A. Narlikar, (2005) *The World Trade Organization: A Very Short Introduction*, New Delhi: Oxford University Press.
- 4.** J. Goldstein, (2006) *International Relations*, New Delhi: Pearson, pp. 327-368.
- 5.** Y. Isar, (2012) ‘Global Culture’, in B. Chimni and S. Mallavarapu (ed.) *International Relations: Perspectives For the Global South*, New Delhi: Pearson, pp. 272-285.
- 6.** M. Duffield, (2011) *Development and Security the Unending War: Governing the World of Peoples*, Cambridge: Polity Press.
- 7.** N. Adams, (1993) *World Apart: The North-South Divide and the International System*, London: Zed.
- 8.** M. Dillon, (2009) ‘What Makes The World Dangerous?’ in J. Edkins And M. Zehfuss (eds.) *Global Politics: A New Introduction*, New York: Routledge, pp. 397-426.
- 9.** A. Heywood, (2011) ‘Global Environmental Issues’, in *Global Politics*, London: Palgrave, 2011, pp. 383-411.
- 10.** N. Carter, (2007) *The Politics of Environment: Ideas, Activism, Policy*, 2nd edition, Cambridge: Cambridge University Press, pp 13-81
- 11.** N. Chandhoke, (2011) ‘The Limits of Global Civil Society,’ Available at [www.gcsknowledgebase.org/wp-content/uploads/2002chapter2.pdf](http://www.gcsknowledgebase.org/wp-content/uploads/2002chapter2.pdf)
- 12.** G. Lexter and S. Halperin (eds.), (2003) *Global Civil Society And Its Limits*, New York: Palgrave, pp. 1-21.



## READING LIST

### PLSADSE04T- PUBLIC POLICY IN INDIA

1. Jenkins, B. (1997) 'Policy Analysis: Models and Approaches' in Hill, M. (1997) *The Policy Process: A Reader* (2nd Edition). London: Prentice Hall, pp. 30-40.
2. Dye, T.R. (2002) *Understanding Public Policy*. Tenth Edition. Delhi: Pearson, pp.1-9, 32-56 and 312-329.
3. Sapru, R.K.(1996) *Public Policy : Formulation, Implementation and Evaluation*. New Delhi: Sterling Publishers, pp. 26-46.
4. Dunleavy, P. and O'Leary, B. (1987) *Theories of the State*. London: Routledge.McClennan, G. (1997) 'The Evolution of Pluralist Theory' in Hill, M. (ed.) *The Policy Process: A Reader*. 2nd Edition. London: Prentice Hall, pp. 53-61.
5. Dye, T.R. (2002) *Understanding Public Policy*. 10th Edition. Delhi: Pearson, pp.11-31.
6. Lukes, S. (1986) *Power*. Basil: Oxford , pp. 28-36.
7. Lukes, S. (1997) 'Three Distinctive Views of Power Compared', in Hill, M. (ed.), *The PolicyProcess: A Reader*. 2nd Edition. London: Prentice Hall, pp. 45-52.
8. Giddens, A. (1998) *The Third Way: The Renewal of Social Democracy*. Cambridge: Polity Press, pp. 27-64 and 99-118.
9. Hogwood, B. & Gunn, L. (1984) *Policy Analysis for the Real World*. U.K: Oxford University Press, pp. 42-62.
10. Sabatier, P.L. & Mazmanian, D. (1979) 'The Conditions of Effective Policy Implementation', in *Policy Analysis*, vol. 5, pp. 481-504.
11. Basu Rumki (2015) *Public Administration in India Handates, Performance and Future Perspectives*, New Delhi, Sterling Publishers
12. Self, P. (1993) *Government by the Market? The Politics of Public Choice*. Basingstoke: MacMillan, pp. 1-20,70-105,113-146,198-231 and 262-277.
13. Girde, E.J.(1987) 'Economic Liberalisation in India: The New Electronics Policy' in *Asian Survey*. California University Press. Volume 27, No.11. Available at - [www.jstor.org/stable/2644722](http://www.jstor.org/stable/2644722).



**DISCIPLINE SPECIFIC ELECTIVE 5(Any two in Semester - VI)**

PLSADSE	Semester VI			
Course Code	<p align="center"><b>Paper - V</b></p> <p align="center"><b>Human Rights in a Comparative Perspective</b></p>	Lectures	Credits (Theo +Tutorial) X 15 weeks	Marks
PLSADSE05T	<p><b>I. Human Rights: Theory and Institutionalization</b></p> <p>a. Understanding Human Rights: Three Generations of Rights</p> <p>b. Institutionalization: Universal Declaration of Human Rights</p> <p>c. Rights in National Constitutions: South Africa and India</p> <p><b>II. Issues</b></p> <p>a. Torture: USA and India</p> <p>b. Surveillance and Censorship: China and India</p> <p>c. Terrorism and Insecurity of Minorities: USA and India</p> <p><b>III. Structural Violence</b></p> <p>a. Caste and Race: South Africa and India</p> <p>b. <b>Gender and Violence: India and Pakistan</b></p> <p>c. Adivasis/Aboriginals and the Land Question: Australia and India</p>	25	5+1	75
		25		
		25		

## READING LIST

### **PLSADSE05T - HUMAN RIGHTS IN A COMPARATIVE PERSPECTIVE**

1. J. Hoffman and P. Graham, (2006) 'Human Rights', *Introduction to Political Theory*, Delhi, Pearson, pp. 436-458.
2. SAHRDC (2006) 'Introduction to Human Rights'; 'Classification of Human Rights: An Overview of the First, Second, and Third Generational Rights', in *Introducing Human Rights*, New Delhi: Oxford University Press.
3. The Constitution of the Republic of South Africa, Chapter 2: Bill of Rights.
4. The Constitution of India, Chapter 3: Fundamental Rights
5. M. Lippman, (1979) 'The Protection of Universal Human Rights: The Problem of Torture' *Universal Human Rights*, Vol. 1(4), pp. 25-55
6. J. Lokaneeta, (2011) 'Torture in the TV Show 24: Circulation of Meanings'; 'Jurisprudence on Torture and Interrogations in India', in *Transnational Torture Law, Violence, and State Power in the United States and India*, Delhi: Orient Blackswan,
7. D. O'Byrne, (2007) 'Torture', in *Human Rights: An Introduction*, Delhi: Pearson, pp. 164-197.
8. E. Scarry, (2010) 'Resolving to Resist', in *Rule of Law, Misrule of Men*, Cambridge: Boston Review Books, MIT, pp.1-53.
9. U. Singh, (2007) 'The Unfolding of Extraordinariness: POTA and the Construction of Suspect Communities', in *The State, Democracy and Anti-terror Laws in India*, Delhi: Sage Publications, pp.165-219
10. A. Pinto, (2001) 'UN Conference against Racism: Is Caste Race?', in *Economic and Political Weekly*, Vol. 36(30)
11. A. Khan and R. Hussain, (2008), 'Violence Against Women in Pakistan: Perceptions and Experiences of Domestic Violence', *Asian Studies Review*, Vol. 32, pp. 239 – 253
12. K. Kannabiran (2012) 'Rethinking the Constitutional Category of Sex', in *Tools of Justice: Non-Discrimination and the Indian Constitution*, New Delhi, Routledge, pp.425-443
13. N. Menon (2012) 'Desire', *Seeing Like a Feminist*, New Delhi: Zubaan/Penguin, pp. 91-146
14. M. Ishay, (2004) *The History of Human Rights: From Ancient Times to the Globalization Era*, Delhi: Orient Blackswan.
15. Text of UDHR available at <http://www.un.org/en/documents/udhr/index.shtml>

16. U. Baxi, (1989) 'From Human Rights to the Right to be Human: Some Heresies', in S. Kothari and H. Sethi (eds.), *Rethinking Human Rights*, Delhi: Lokayan, pp.181-166

**DISCIPLINE SPECIFIC ELECTIVE 6 (Any two in Semester - Vi)**

<b>PLSADSE</b>	<b>Semester VI</b>			
Course Code	<b>Paper VI</b>	Lectures	Credits (Theo +Tutorial) X 15 weeks	Marks
<b>PLSADSE06T</b>	<b>Module 1. GOVERNMENT AND GOVERNANCE: CONCEPTS</b> Role of State In the era of Globalisation State, Market and Civil Society	<b>20</b>	5+1	75
	<b>Module 2. ENVIRONMENTAL GOVERNANCE</b> Human-Environment Interaction Green Governance: Sustainable Human Development	<b>20</b>		
	<b>Module -3. GOOD GOVERNANCE INITIATIVES IN INDIA: BEST PRACTICES</b> <ul style="list-style-type: none"> <li>• Public Service Guarantee Acts</li> <li>• Electronic Governance</li> <li>• Citizens Charter &amp; Right to Information</li> <li>• Corporate Social Responsibility</li> </ul>	<b>35</b>		

## READING LIST

### PLSADSE06T - GOVERNANCE: ISSUES AND CHALLENGES

1. B. Chakrabarty and M. Bhattacharya, (eds.) *The Governance Discourse*. New Delhi: Oxford University Press, 1998
2. Surendra Munshi and Biju Paul Abraham [eds.] , *Good Governance, Democratic Societies And Globalisation*, Sage Publishers, 2004
3. United Nation Development Programme , *Reconceptualising Governance*, New York, 1997
4. Carlos Santiso, *Good Governance and Aid Effectiveness: The World Bank and Conditionality* Johns Hopkins University, The Georgetown Public Policy Review ,Volume VII, No.1, 2001
5. Vasudha Chotray and Gery Stroker , *Governance Theory: A Cross Disciplinary Approach* , Palgrave Macmillan ,2008
6. J. Rosenau, ‘Governance, Order, and Change in World Politics’, in J. Rosenau, and E. Czempiel (eds.) *Governance without Government: Order and Change in World Politics*, Cambridge: Cambridge University Press ,1992
7. B. Nayar (ed.), *Globalization and Politics in India*. Delhi: Oxford University Press, 2007 pp. 218-240.
8. P. Bardhan, ‘Epilogue on the Political Economy of Reform in India’, in *The Political Economy of Development in India*. 6th edition, Delhi: Oxford University Press, 2005
9. J. Dreze and A. Sen, *India: Economic Development and Social Opportunity*. New Delhi: Oxford University Press, 1995
10. Niraja Gopal Jayal[ed.], *Democracy in India*, Oxford University Press, 2007
11. Ramachandra Guha, *Environmentalism: A Global History*, Longman Publishers, 1999 J.P. Evans, *Environmental Governance*, Routledge , 2012
12. Emilio F. Moran, *Environmental Social Science: Human - Environment interactions and Sustainability*, Wiley-Blackwell, 2010
13. Burns H Weston and David Bollier, *Green Governance: Ecological Survival, Human Rights, and the Law of the Commons*, Cambridge University Press, 2013
14. A. Heywood, *Global Politics*, New York: Palgrave, 2011, pp. 383-411.
15. N. Carter, *The Politics of Environment: Ideas, Activism, Policy*, Cambridge: Cambridge University Press, 2007, pp. 13-81.

16. Pranab Bardhan and Dilip Mookherjee, *Decentralization And Local Governance In Developing Countries: A Comparative Perspective*, MIT Press, 2006
17. Niraja Gopal Jayal , *Democracy and the State: Welfare, Secularism, and Development in Contemporary India*, Oxford University Press, 1999
18. K. Vijaya Kumar, *Right to Education Act 2009: Its Implementation as to Social Development in India*, Akansha Publishers, 2012
19. Amartya Sen and Jean Dreze, *Omnibus: Poverty and Famines, Hunger and Public Action, India-Economic Development and Social Opportunity*, Oxford University Press, 1998
20. Jean Dreze and Amartya Sen, *An Uncertain Glory: India And Its Contradictions*, Princeton University Press, 2013

#### **(D) PLSSEEC - Skill Enhancement Courses – Two**

**Semester – 3**

**Credit – 2**

**Class – 2Hours/week**

##### **1. PLSSEEC01M Democratic Awareness with Legal Literacy**

**Course Objective:** The Proposed course aims to acquaint student with the structure and manner of functioning of the legal system in India.

#### **Course Content:**

##### **Unit I**

- Outline of the Legal system in India
- System of courts/tribunals and their jurisdiction in India - criminal and civil courts, Writ jurisdiction, specialized courts such as juvenile courts, Mahila courts and Tribunals.
- Role of the police and executive in criminal law administration.
- Alternate dispute mechanisms such as Lok Adalats, non- formal mechanisms.

##### **Unit II**

- Brief understanding of the laws applicable in India

- Constitution - fundamental rights, fundamental duties, other constitutional rights and their manner of enforcement, with emphasis on public interest litigation and the expansion of certain rights under Article 21 of the Constitution.
- Laws relating to criminal jurisdiction- provision relating to filing an FIR, arrest, bail search and seizure and some understanding of the questions of evidence and procedure in Cr. P.C. and related laws, important offences under the Indian PenalCode, offences against women, juvenile justice, prevention of atrocities on Scheduled Castes and Scheduled Tribes.
- Concepts like Burden of Proof, Presumption of Innocence, Principles of Natural Justice, Fair comment under Contempt laws.
- Personal laws in India : Pluralism and Democracy
- Laws relating to contract, property and tenancy laws.
- Laws relating to dowry, sexual harassment and violence against women
- Laws relating to consumer rights
- Laws relating to cyber crimes
- Antiterrorist laws: implications for security and human rights
- Practical application: Visit to either a (I) court or (ii) a legal aid centre set up by the
- Legal Services Authority or an NGO or (iii) a Lok Adalat, and to interview a litigant or person being counselled. Preparation of a case history.

### **Unit III**

#### **Access to courts and enforcement of rights**

- Critical Understanding of the Functioning of the Legal System
- Legal Services Authorities Act and right to legal aid, ADRsystems

#### **Practical application :**

What to do if you are arrested ; if you are a consumer with a grievance; if you are a victim of sexual harassment; domestic violence, child abuse, caste, ethnic and religious discrimination; filing a public interest litigation. How can you challenge administrative orders that violate rights, judicial and administrative remedies

Using a hypothetical case of (for example) child abuse or sexual harassment or any other violation of a right, preparation of an FIR or writing a complaint addressed to the appropriate authority.

## □ Suggested exercises for students

1. Discuss the debates around any recent Ordinance, Bill or Act in Parliament.
2. How to file an FIR? In case there has been a theft in the neighbourhood how would you file the first Hand Information Report?
3. Under what circumstances can detention and arrest become illegal?
4. Discuss any contemporary practice or event that violates the equality and protection against discrimination laws.
- 5.. Your friend has shared with you an incident of unwelcome verbal remarks on her by a person of higher authority in your college, what would you do?
6. You have seen a lady in your neighbourhood being beaten up by her husband. Identify the concerned Protection Officer in case you want to provide information about this incident.
7. Read the Vishakha Guidelines as laid down by the Supreme Court and the Act against sexual harassment at the workplace. Discuss what constitutes sexual harassment and the mechanisms available for its redressal in your institution. Use and Abuse of the mechanism.
8. What is the procedure to file an RTI? Use and Abuse of RTI. Exemptions to RTI
10. You bought a product from a nearby shop which was expired, the shop keeper refused to return it. Use your knowledge of Consumer Protection Act to decide what you do next?
11. What must you keep in mind as a consumer while making a purchase that may later help you make use of Consumer Protection Act? (Hint- Should you ask for a Bill?)
12. In your surroundings have you witnessed any incident that would be considered offensive under the SC and ST Act? Make a class- room presentation on it.

**Semester – 4**

**Credit – 2**

**Class – 2Hours/week**

## **PLSSSEC02M - 2. Public Opinion and Survey Research**

**Course Objective:** this course will introduce the students to the debates, principles and practices of public opinion polling in the context of democracies, with special reference to India. It will familiarize the students with how to conceptualize and measure public opinion using quantitative methods, with particular attention being paid to developing basic skills pertaining to the collection, analysis and utilization of quantitative data.

### **I. Introduction to the course**

Definition and characteristics of public opinion, conceptions and characteristics, debates about its role in a democratic political system, uses for opinion poll

### **II. Measuring Public Opinion with Surveys: Representation and sampling (6 lectures)**

- a. What is sampling? Why do we need to sample? Sample design.
- b. Sampling error and non-response

- c. Types of sampling: Non random sampling (quota, purposive and snowball sampling); random sampling: simple and stratified
- d. Interviewing: Interview techniques pitfalls, different types of and forms of interview
- e. Questionnaire: Question wording; fairness and clarity.

### **III. Quantitative Data Analysis**

- a. Introduction to quantitative data analysis
- b. Basic concepts: correlational research, causation and prediction, descriptive and Inferential Statistics









**West Bengal State University**

**Department of Sociology**

**B.A. (Honours)**

<b>Semester</b>	<b>Core Courses (14 Courses)</b>	<b>Ability Enhancement Courses (AECC) (2 Courses)</b>	<b>Skill Enhancement Courses (SEC) (2 Courses)</b>	<b>Elective: Discipline Specific (DSE) (4 Courses)</b>	<b>Elective: Generic Elective (GE) (4 Courses)</b>
I	Introduction to Sociology I (SOCACOR01T) Sociology of India I (SOCACOR02T)	Environmental Science			Introduction to Sociology (SOCHGEC01T)
II	Introduction to Sociology II (SOCACOR03T) Sociology of India II (SOCACOR04T)	English/MIL Communication			Sociology of India (SOCHGEC02T)
III	Political Sociology (SOCACOR05T) Sociology of Religion (SOCACOR06T) Sociology of Gender (SOCACOR07T)		Theory and Practice of Development (SOCSSSEC01M)		Sociological Theories (SOCHGEC03T)
IV	Economic Sociology (SOCACOR08T) Sociology of Kinship (SOCACOR09T) Social Stratification (SOCACOR10T)		Gender Sensitization (SOCSSSEC02M)		Methods of Sociological Inquiry (SOCHGEC04T)
V	Sociological Thinkers I (SOCACOR11T) Sociological Research Methods I (SOCACOR12T)			(Any two courses from the 3 courses given below) Urban Sociology (SOCADSE01T) Agrarian Sociology (SOCADSE02T) Environmental Sociology (SOCADSE03T)	
VI	Sociological Thinkers II (SOCACOR13T) Sociological Research Methods II (SOCACOR14T)			(Any two courses from the 3 courses given below) Sociology of Work (SOCADSE04T) Sociology of Health and Medicine (SOCADSE05T) Indian Sociological Traditions (SOCADSE06T)	

**B.A. (Honours) Sociology**  
**Syllabus**

**Under Choice Based Credit System (CBCS)**

**West Bengal State University**  
**June 2018**

**Semester I**  
**CORE COURSE 1**  
**(SOCACOR01T)**

**INTRODUCTION TO SOCIOLOGY – I**

**Outline: 1. Sociology: Discipline and Concepts (33 hrs.)**

- 1.1 Thinking Sociologically: Sociology and Common Sense, Sociological Imagination
- 1.2 Emergence of Sociology
- 1.3 Some Basic Concepts: Social Institution; Social System; Association; Aggregates, Categories; Groups and its forms; Status and Role; **Norms & Values; Social Structure;** Social Processes: Associative and Dissociative
- 1.4 Individual, Culture and Society: Meaning of Culture; Humans in Society, Society in Humans; Culture and Personality; Socialization: Concept, Processes, and Agencies

**2. Sociology and Other Social Sciences (12 hrs.)**

- 2.1 Sociology and Social Anthropology
- 2.2 Sociology & Psychology
- 2.3 Sociology & History

**3. Human Society (30 hrs.)**

- 3.1 Individual and Group
- 3.2 Social Institutions
- 3.3 **Social Structure and Social Control**
- 3.4 Social Processes
- 3.5 Social Change and Mobility

**Reading Reference:**

1. Alex, Inkeles. 1975. Sociology. London: Prentice Hall.
2. Anthony Giddens. 2013. Sociology (Seventh Edition).
3. Bottomore, T.B. 1962. Sociology. London: George Allen and Unwin.
4. Fulcher, James and John Scott. 2007. Sociology. Third Ed. OUP.
5. Haralambos, M. 1998. Sociology: Themes and Perspectives, OUP, New Delhi.
6. Henslin, James M., et al. Sociology: A down to earth approach. Pearson Higher Education AU, 2015.
7. Jayaram, N. 1987. Introductory Sociology. Macmillan Press Limited.
8. Macionis, John. 1996. Sociology. New Jersey: Prentice Hall.
9. McIntyre, Lisa J. The practical skeptic: Core concepts in sociology. McGraw-Hill, 2011.

**Semester I**  
**Core Course 02**  
**(SOCACOR02T)**

**Sociology of India – I**

**Outline:**

- 1. India: An Object of Knowledge (25 hrs.)**
  - 1.1 The Colonial Discourse
  - 1.2 The Nationalist Discourse
  - 1.3 The Subaltern Critique
- 2. Indian Society: Concepts and Institutions (50 hrs.)**
  - 2.1. Caste: concept and critique
  - 2.2. Agrarian Classes
  - 2.3. Industry and Labour
  - 2.4. Tribe: Profile and Location
  - 2.5. Village: Structure and Change
  - 2.6. Kinship: Principle and Pattern
  - 2.7. Religion and Society**

**Reading Reference:**

1. A. R. Desai. BharatiyaJatiatabaderSamajikPatabhumi (Social Background of Indian Nationalism).
2. Bernard Cohn, Colonialism and its forms of knowledge, Princeton University Press
3. David Mandelbaum – Society in India
4. K. L. Sharma – Social Stratification and Mobility
5. K. L. Sharma – Social Stratification in India
6. M. N. Srinivas – Caste – Its Twentieth Century Avatar
7. M. N. Srinivas – Social Change in Modern India
8. P. Oberoi (ed) - Family, Kinship and Marriage in India
9. Rajni Kothari (ed.) – Caste in Indian Politics
10. Ram Ahuja – Indian Social System
11. S. C. Dube – Indian Society
12. T. K. Oommen – Social Structure and Politics
13. Yogendra Singh – Culture Change in India
14. Yogendra Singh – Essays on Modernization in India
15. Yogendra Singh – Social Change in India
16. Yogendra Singh – The Modernization of Indian Tradition

**Semester II**  
**Core Course 03**  
**(SOCACOR03T)**

**Introduction to Sociology II**

**Outline:**

- 1. Understanding Sociological Theory: (7 hrs.)**
  - 1.1 Building blocks of Sociological Theory
  - 1.2 Functions and types of theories
- 2. Functionalism (17 hrs.)**
  - 2.1 Roots of Functionalism (Auguste Comte and Emile Durkheim)
  - 2.2 Contributions of Social Anthropologist (Radcliffe Brown and Bronislaw Malinowski)
  - 2.3 Analytical Functionalism of Talcott Parsons
  - 2.4 Empirical Functionalism of Robert K. Merton
  - 2.5 Critique of Functionalism
- 3. Interpretive Sociology (17 hrs.)**
  - 3.1 Critique of Structural Functionalism
  - 3.2 George Herbert Mead
  - 3.3 Herbert Blumer and Thomas Kuhn
  - 3.4 Erving Goffman
- 4. Conflict Perspective (17 hrs.)**
  - 4.1 Karl Marx
  - 4.2 Ralf Dahrendorf
  - 4.3 Georg Simmel and Lewis Coser
- 5. Feminist Perspective (17 hrs.)**
  - 5.1 Liberal Feminist Thought
  - 5.2 Radical Feminist Thought
  - 5.3 Socialist Feminist Thought
  - 5.4 Eco Feminism

**Reading Reference:**

1. Baert, Patrick. 1998. Social Theory in the Twentieth Century. New York. NYU Press.
2. Bottomore, Tom and Nisbet, Robert. 2004. A History of Sociological Analysis. Jaipur: Rawat
3. Bottomore, Tom. 2002. The Frankfurt School. London: Routledge
4. Collins, Randall. 1994. Four Sociological Traditions. New York. OUP
5. Ritzer, George. 1996. Modern Sociological Theory. New Delhi: McGraw Hill.
6. Seidman, Steven. 2011. Contested Knowledge: Social Theory Today. Singapore: Wiley-Blackwell
7. Thompson, Kenneth and Jeremy Tunstall, Sociological Perspectives, New York:



Penguin Books Ltd

8. Turner, Jonathan. 1995. *The Structure of Sociological Theory*. Jaipur: Rawat
9. Wallace, A. Ruth and Wolf, Alison. 1990. *Contemporary Sociological Theory*. New Delhi: PHI Learning
10. Humm, Maggie. 1995. *The Dictionary of Feminist Theory* the University of Michigan: Ohio State University Press
11. Tong, Rosemarie. 2009. *Feminist Thought: A Comprehensive Introduction* Westview Press

**Semester II**  
**Core Course 04**  
**(SOCACOR04T)**

**Sociology of India – II**

- Outline:**
- 1. Ideas on Indian Society (33 hrs.)**
    - 1.1. Tagore, Gandhi and Ambedkar
    - 1.2. Indological (G. S. Ghurye) and Ethnographic Approaches (M. N. Srinivas, A. Béteille)
    - 1.3 Benoy Kumar Sarkar, Radhakamal Mukherjee
    - 1.4 D. P. Mukherji, A. R Desai
  - 2. Resistance, Mobilization, Change (30 hrs.)**
    - 2.1. Dalit Movements
    - 2.2 Women's Movement
    - 2.3 Peasant Movements
    - 2.4 Ethnic Movements
    - 2.5 Middle Class Phenomenon
  - 3. Challenges to Civilization, State and Society (12 hrs.)**
    - 3.1. Communalism
    - 3.2. Secularism
    - 3.3. Nationalism**

**Reading References:**

1. AmalMukhopadhyay (ed.). Bengali Intellectual Tradition
2. B. K. Nagla. 2008. Indian Sociological Thought. Jaipur: Rawat Publications.
3. Bela Dutta Gupta. 1972. Sociology in India. Calcutta: Centre for sociological Research.
4. Deshpande, S., 2003, Contemporary India: A Sociological View, New Delhi: Penguin Books
5. Dhanagare, D. N. (1993). Themes and Perspectives in Indian Sociology. Rawat Publication, Jaipur.
6. DiskhitSinha. 2010. RabindranatherPalliPunargatherPrayas. Paschimbanga Bangla Academy.
7. M.N.Srinivas 1996. Village, Caste, Gender and Method, OUP.
8. M.N.Srinivas. 1986. Caste in Modern India, Media Promoters & Pub.
9. M.N.Srinivas. 1996. Caste- Its Twentieth Century Avatar, Penguin.
10. Madan, T.N., 1997, Modern Myths, Locked Minds, Delhi: Oxford University Press
11. Menon, N., (ed) 1999, Gender and Politics in India, Oxford University Press
12. P. Uberoi, NandiniSundar and SatishDeshpande (ed). 2007. Anthropology in the East.
13. P.K. Mishra et al (eds). 2007. M.N. Srinivas: The Man and his Works. Rawat.
14. Radcliffe Brown, A.R., 1976, Structure and Function in Primitive Society, Free Press.
15. Ramkrishna Mukherjee. 1979. Sociology of Indian Sociology. Bombay: Allied Publishers.
16. Ritzer, George, 1996, Modern Sociological Theory, McGraw Hill.
17. Robey, David, 1973, Structuralism: An Introduction, Oxford: Clarendon Press
18. Shah, G., 2001, Dalit Identity and Politics, New Delhi: Sage
19. Swapan Kumar Bhattacharyya. 1990. Indian Sociology – The Role of Benoy Kumar Sarkar. The University of Burdwan.
20. SwapanPramanick. 1994. Sociology of G. S. Ghurye. Jaipur: Rawat Publications.
21. Ganguly, Ramanuj. Ambedkar: EktiSamajtattikPorjalochona. New Delhi: Pearson.
22. Y. Singh. 1986. Indian Sociology, VistarPub.B. K. Nagla. 2008. Indian Sociological Thought. Jaipur: Rawat Publications.

**Semester III**  
**Core Course 05**  
**(SOCACOR05T)**  
**POLITICAL SOCIOLOGY**

**Outline:**

- 1. Political Culture and Political Socialization (10 hrs.)**
  - 1.1 Meaning and Dimensions of Political Culture
  - 1.2 Meaning and types of Political Socialization
  - 1.3 Agencies of Political Socialization and their role
- 2. Basic Concepts (25 hrs.)**
  - 2.1 Power and Authority
  - 2.2 State, Governance and Citizenship
  - 2.3 Elites and the Ruling Classes
- 3. Political Systems: Segmentary, Totalitarian and Democratic (20 hrs.)**
- 4. Political Parties, Pressure Groups, and Local Structures of Power (20 hrs.)**
  - 4.1 Political Parties: Structure and Functions
  - 4.2 Types of Pressure Groups and their relationship with Political Parties
  - 4.3 Local Governance: Panchayat System

**Reading References:**

1. Ali Ashraf. and L.N. Sharma, Political Sociology: A New Grammar of Politics, 1983 University Press
2. Anthony M. Orum and John G. Dale Political Sociology. Power and Participation in the Modern World. Fifth Edition 2009 OUP
3. Bottomore, T.B. 1975, Political Sociology, Blackie and Sons, Bombay.
4. Bottomore, T.B. 1993, Elites and Society, 2 Edition, Routledge
5. Burchell, Graham et al (Eds),1991, The Foucault Effect: Studies in Governmentality, The University of Chicago Press
6. DavitaGlasberg and Deric Shannon Political Sociology: Oppression, Resistance, and the State, 2010, Pine Forge
7. Fuller, C.J. and V. Benei (Eds.), 2000. The Everyday State and Society in Modern India. Social Science Press
8. Lukes, Steven. 2005, Power: A Radical View, 2 Ed., Hampshire: Palgrave
9. Mills, C. Wright, 1956. The Power Elite, New Edition, OUP
10. MukhopadhyayAmal Kumar, Political Sociology, 1994, K.P. Bagchi Kolkata
11. Robbins, Paul. Political ecology: A critical introduction. Vol. 16. 2011, John Wiley & Sons.
12. S. N. Eisenstadt, Political Sociology: A Reader, 1971, New York: Basic Books

**Semester III**  
**Core Course 06**  
**(SOCACOR06T)**  
**Sociology of Religion**

**Outline:**

**1. Approaches to the Study of Religion (30 hrs.)**

- 1.1 Formulating Religion
- 1.2 Emile Durkheim: Society as Sacred
- 1.3 Karl Marx: Religion as Alienation
- 1.4 Max Weber: Religion as 'Social Action'

**2. Elements of Religiosity (20 hrs.)**

- 2.1 Sacred, Myth, Ritual and Prayer
- 2.2 Time-Space
- 2.3 Rationality

**3. Contemporary Directions in the Sociology of Religion (25 hrs.)**

- 3.1 Religious Fundamentalism
- 3.2 The Secularization Debate
- 3.3 Religious Individualism and the Boundaries of Religion
- 3.4 Religion and Identity: Class, Gender, Sexuality

**Reading References:**

1. Berger, Peter L. "Reflections on the sociology of religion today." *Sociology of Religion* 62.4 (2001): 443-454.
2. Berger, Peter L. *The sacred canopy: Elements of a sociological theory of religion*. Anchor/Open Road Media, 2011.
3. Berger, Peter, Thomas Luckmann. "Sociology of religion and sociology of Knowledge" *Sociology and Social Research* 47.4 (1963): 417-427
4. Casanova, José. *Public religions in the modern world*. University of Chicago Press, 1994
5. Dawson, Andrew. *Sociology of religion*. Hymns Ancient and Modern Ltd, 2011.
6. Dillon, Michele, ed. *Handbook of the Sociology of Religion*. Cambridge University Press, 2003.
7. E. E. Evans-Pritchard. 1963 (1940). *The Nuer*. Oxford: Clarendon Press
8. Emile Durkheim. 1995. *The elementary forms of religious life*. Translated by Karen E. Fields. New York: The Free Press
9. Johnstone, Ronald L. *Religion and society in interaction: The sociology of religion*. Prentice Hall, 1975.
10. Johnstone, Ronald L. *Religion in society: A sociology of religion*. Routledge, 2015.

11. Malinowski, Bronislaw. 1948. Magic, science and religion and other essays. Selected, and with an introduction by Robert Redfield. Boston: The Free Press
12. Pickering, William Stuart Frederick. Durkheim's sociology of religion: Themes and theories. Casemate Publishers, 2009.
13. Robbins, Thomas. Cults, converts and charisma: The sociology of new religious movements. Sage Publications, Inc, 1988.
14. Smith, Christian, and Robert D. Woodberry. Sociology of religion. Blackwell Publishing Ltd, 2001.
15. Tambiah, Stanley Jeyaraja. 1990. Magic, science, religion and the scope of rationality. Cambridge: Cambridge University Press
16. Turner, Bryan S., ed. The new Blackwell companion to the sociology of religion. John Wiley & Sons, 2016. Davie, Grace. The sociology of religion: A critical agenda. Sage, 2013.
17. Weber, Max. The sociology of religion. Beacon Press, 1993.
18. Yinger, J. Milton. "Religion, society and the individual; an introduction to the sociology of religion." (1957).

**Semester III**  
**Core Course 07**  
**(SOCACOR07T)**  
**Sociology of Gender**

**Outline:**

**1. Gender as a Patriarchal / Social Construct (25 hrs.)**

- 1.1 Gender, Sex, Sexuality
- 1.2 Production of Masculinity and Femininity
- 1.3 Gender Socialization, Gender Roles and Stereotyping
- 1.4 Sexual Identities: Heterosexual, Bisexual, Lesbian and Homosexual, Transgender, Transvestite, Hijra, Koti

**2. Gender: Discrimination and Inequalities (25 hrs.)**

- 2.1. Class, Caste
- 2.2. Family, Work
- 2.3. Religion, Ethnicity

**3. Gender, Power and Resistance (25 hrs.)**

- 3.1 Social Subordination
- 3.2 Violence against Women
- 3.3 Women's and LGBTQ Movements in India

**Reading References:**

1. Abbott, Pamela, Claire Wallace and Melissa Tyler. 2005. An Introduction to Sociology: Feminist Perspectives. London: Routledge.
2. AbuLughod, Lila. 2002. 'Do Muslim Women Really Need Saving? Anthropological Reflections on Cultural Relativism and its Others', American Anthropologist, Vol. 104, No. 3.
3. Agarwal, B. 1994, A Field of one's Own, Gender and Land Rights in South Asia, Cambridge, Cambridge University Press
4. Altekar, A.S. 1983, The Position of Women in Hindu Civilization. Delhi, Motilal Banarasi Dass, Second Edition: P Fifth Reprint.
5. Bhasin, Kamala. 1993. What is Patriarchy? New Delhi: Kali for Women.
6. Bilton, Tony et al. 1996. Introductory Sociology. New York: Palgrave.
7. Chanana, Karuna, 1988, Socialization, Women and Education, Explorations in Gender Identity, New Delhi
8. Chodrow, Nancy, 1978, The Reproduction of Mothering, Berkeley, University of California Press
9. Desai, Neera and M. Krishnaraj, 1987, Women and Society in India, Delhi, Aghanta
10. Eagleton, Mary. (ed). 2003. A Concise Companion to Feminist Theory. London: Blackwell.
11. Fernandes, Leela. (ed). 2014. Routledge Handbook of Gender in South Asia. London: Routledge

12. Forbes,G.1998,Women in Modern India ,New Delhi,Cambridge University press
13. Furr,L, Allen. 2018. Women, Violence and Social Stigma. Jaipur: Rawat Publications.
14. Gandhi, N. And N. Shah ,1992,The issues at Stake, Theory and Practice in the Contemporary Women's Movement in India,NewDelhi,Kali for Women.
15. Ghadially , Rehana (ed) ,1988,Women in India Society,NewDelhi,Sage
16. Halberstam, Judith. 1998. Female Masculinity. Durham: Duke University Press (Also New Delhi: Zubaan 2012 Reprint).
17. Holmes, Mary. 2009. Gender and Everyday Life. London: Routledge.
18. Jackson, Stevi and Sue Scott (eds.) 2002. Gender: A Sociological Reader. London: Routledge.
19. Jayawardene,Kumari,1991,Feminism and Nationalism in the third World, New Delhi, Kali For Women
20. Kalaramadam,S. 2016. Gender, Governance and Empowerment in India. London: Routledge
21. Lorber, Judith and Susan A. Farrell (eds.). 1991. The Social Construction of Gender. Newbury Park, Calif: Sage Publications.
22. McCormack ,C. And M. Strathern (ed), 1980, Nature, Culture and Gender, Cambridge: Cambridge University Press
23. Menon, Nivedita (ed.).1999. Gender and Politics in India. New Delhi: Oxford University Press.
24. Mies Maria ,1980,Indian Women and Patriarchy,Conflicts and Dilemmas of Students and Working Women,NewDelhi,Concept
25. Newton, Esther. 2000. Margaret Mead Made Me Gay: Personal Essays, Public Ideas. Durham: Duke University Press.
26. Oakley, Ann,1972,Sex, Gender and Society, New York, Harper and Row
27. Palriwala, Rajni and Carla Risseuw (eds.). 1996. Shifting Circles of Support: Contextualising Kinship and Gender in South Asia and Sub-Saharan Africa. New Delhi: Sage Publications.
28. Rege, Sharmila. (ed). 2003. Sociology of Gender: The Challenge of Feminist Sociological Knowledge. New Delhi: Sage.
29. Rosaldo, M. Z. and L. Lamphere (eds.). 1974. Woman, Culture and Society. Stanford: Stanford University Press.
30. Sarkar, Siuli. 2016. Gender Disparity in India: Unheard Whimpers. Delhi: PHI Learning.
31. Smith, Bonnie, G. 2013. Women's Studies: The Basics. London: Routledge
32. Tong, Rosemarie. 2009. Feminist Thought. Westview Press.
33. Tong,Rosemarie,1989,Feminist Thought, A Comprehensive Introduction, Colarodo, Westview Press
34. Uberoi, Patricia. 1990. 'Feminine Identity and National Ethos in Indian Calendar Art', in Economic and Political Weekly, Vol. 25, No. 17 (Apr. 28, 1990).
35. Vaid ,S.& K. Sangari,1989,Recasting Women, Essays in Colonial History, New Delhi, Kali For Women
36. Vance, Carole (ed.). 1984. Pleasure and Danger: Exploring Female Sexuality. London: Routledge &Kegan Paul
37. Whelham,Imelda,1997,Modern Feminist Thought, Edinburgh University Press
38. Young, Kate et al. (eds.). 1984. Of Marriage and the Market: Women's Subordination Internationally and Its Lessons. London: Routledge &Kegan Paul

**Semester IV**  
**Core Course 08**  
**(SOCACOR08T)**

**ECONOMIC SOCIOLOGY**

- Outline:**
- 1. Perspectives in Economic Sociology (18 hrs.)**
    - 1.1 Formalism and Substantivism
    - 1.2 New Economic Sociology
  - 2. Forms of Exchange (14 hrs.)**
    - 2.1 Reciprocity and Gift
    - 2.2 Exchange and Money
  - 3. Systems of Production, Circulation and Consumption(25 hrs.)**
    - 3.1 Hunting and Gathering
    - 3.2 Domestic Mode of Production
    - 3.3 Peasant
    - 3.4 Capitalism
    - 3.5 Socialism
  - 4. Some Contemporary Issues in Economic Sociology(18 hrs.)**
    - 4.1 Development
    - 4.2 Globalization

**Reading References:**

1. Appadurai, Arjun. 1986. The Social Life of Things: Commodities in Cultural Perspective. Cambridge: Cambridge University Press.
2. Carrier, James G. 1995. Gifts and Commodities: Exchange and Western Capitalism since 1700. London: Routledge.
3. Bourdieu, Pierre. The social structures of the economy. Polity, 2005.
4. Dodd, Nigel. 1994 The sociology of money: economics, reason & contemporary society. Continuum Intl Pub Group.
5. Giddens, Anthony. 2009. Sociology. Cambridge: Polity (Or Updated Edition)/ New Delhi: Wiley India Pvt. Ltd. 2009 Edition
6. Hann, Chris and Keith Hart. 2011. Economic Anthropology. Cambridge, UK: Polity Press.
7. Howes, D. (ed). 1996. Cross-Cultural Consumption: Global Markets and Local Realities. London: Routledge.
8. Mair, Lucy. 1972. An Introduction to Social Anthropology. New Delhi: Oxford University Press.



9. Mauss, Marcel. 1990. *The Gift: Forms and Functions of Exchange in Archaic Societies*. London: Routledge.
10. Pramanick&Ganguly (Ed), 2010, *Globalization in India*, New Delhi: PHI Learning
11. Sahlins, Marshall David. 1974. *Stone Age Economics*. London: Tavistock.
12. Sassen, Saskia. 2007. *A Sociology of Globalization*. New York: W.W. Norton & Co.
13. Simmel, Georg. (David Frisby-Editor, T.B. Bottomore-Translator) *The Philosophy of Money*, 2004. Routledge (first published 1900)
14. Smelser, Neil J. 1976. *The Sociology of Economic Life*. New Delhi: Prentice-Hall of India.
15. Smelser, Neil. J. and Richard Swedberg (eds). 1994. 1994. *The Handbook of Economic Sociology*. Princeton: Princeton University Press.
16. Tonkiss, Fran. 2006. *Contemporary Economic Sociology*. London: Routledge.
17. Verdery, Katherine. 1996. *What Was Socialism, And What Comes Next?* Princeton, N. J.: Princeton University Press.
18. Wallerstein, Immanuel Maurice. 1983. *Historical Capitalism*. London: Verso.
19. Wolf, Eric R. 1966. *Peasants*. New Jersey: Prentice-Hall.
20. Zelizer, Viviana A. 1989. 'The Social Meaning of Money: "Special Monies"', *The American Journal of Sociology*, Vol. 95, No.2.

**Semester IV**  
**Core Course 09**  
**(SOCACOR09T)**

**SOCIOLOGY OF KINSHIP**

**Outline:**

**1. Introduction: (30 hrs.)**

1.1 **Key Terms:** Descent, Consanguinity, Filiations, Incest Taboo, Affinity, Family, Residence

**1.2 Approaches:**

1.2.1 Descent

1.2.2 Alliance

1.2.3 Indological

**2. Family, Household and Marriage (15 hrs.)**

2.1 Changing Structure and Functions of Marriage, Family and Household

2.2 Meaning, Characteristics and household dimensions of joint family – Disintegration Debate

**3. Re-casting Kinship (30 hrs.)**

3.1 Power and Discrimination in Family, Kinship and Marriage

3.2 Marriage Migration

3.3 New Reproductive Technologies

3.4 Re-imagining Families: Debates around lesbian, gay, bisexual, transgender and queer (LGBTQ) and Live-in Relationships.

**Reading References:**

1. Allan, Graham. A sociology of friendship and kinship. G. Allen &Unwin, 1979.
2. Barnard, Alan and Jonathan Spencer (eds.). 2002. Encyclopedia of Social and Cultural Anthropology. London: Routledge.
3. Beattie, John. 1964. Other Cultures. London: Routledge &Kegan Paul.
4. Dube, Leela. "Sociology of kinship." A Survey of Research in Sociology and Social Anthropology 2 (1974): 233.
5. Dumont, Louis. 1968. 'Marriage Alliance', in D. Shills (ed.), International Encyclopaedia of the Social Sciences, Vol.10. New York: Macmillan and Free Press.
6. Fortes, Meyer. 1970. Time and Social Structure and Other Essays. London: The Athlone Press.
7. Goody, Jack (ed.). 1958. The Developmental Cycle in Domestic Groups. Cambridge: Cambridge University Press.

8. Graburn, Nelson HH. Readings in kinship and social structure. Harper & Row, 1971.
9. Leach, E. R. 1961. Rethinking Anthropology. London: The Athlone Press. (Particularly the Essay, 'Polyandry, Inheritance and the Definition of Marriage with Particular Reference to Sinhalese Customary Law').
10. Leach, E. R. 1962. 'On Certain Unconsidered Aspects of Double Descent Systems', *Man*, Vol. 62.
11. Lévi-Strauss, Claude. 1969, *The Elementary Structures of Kinship*. London: Tavistock.
12. Mair, Lucy. 1972. *An Introduction to Social Anthropology*. New Delhi: Oxford University Press.
13. Parkin, Robert and Linda Stone. (eds.). 2004. *Kinship and Family: An Anthropological Reader*. Malden, U.S.A.: Blackwell
14. Radcliffe-Brown, A. R. and Daryll Forde (eds.). 1950. *African Systems of Kinship and Marriage*. London: Oxford University Press.
15. Raheja, Gloria Goodwin and Ann Grodzins Gold. 1994. *Listen to the Heron's Words: Re-imagining Gender and Kinship in North India*. Berkeley: University of California Press.
16. Sahlins, Marshall. "What kinship is (part one)." *Journal of the Royal Anthropological Institute* 17.1 (2011): 2-19.
17. Shah, A. M. 1998. *The Family in India: Critical Essays*. New Delhi: Orient Longman.
18. Uberoi, Patricia (ed.). 1994. *Family, Kinship and Marriage in India*. New Delhi: Oxford University Press.
19. Uberoi, Patricia. 1995. 'When is a Marriage Not a Marriage? Sex, Sacrament and Contract in Hindu Marriage', *Contributions to Indian Sociology* (n.s.), Vol. 29, No.1&2.
20. Uberoi, Patricia. 2006. 'The Family in India', in Veena Das (ed.). *Oxford Handbook of Indian Sociology*. New Delhi: Oxford University Press.
21. Weston, Kath. 1991. *Families We Choose: Lesbians, Gays, Kinship*. New York: Columbia University Press.

**Semester IV**  
**Core Course 10**  
**(SOCACOR10T)**  
**Social Stratification**

**Outline:**

- 1. Introducing Social Stratification:** Forms and Consequences  
(5 hrs.)
- 2. Theories of Stratification** (30 hrs.)
  - 2.1. Marx: Class
  - 2.2. Functionalism: Talcott Parsons and Robert K. Merton
  - 2.3. Max Weber: Class, Status and Power
  - 2.4. Pierre Bourdieu: Forms of Capital
  - 2.5. **Feminist Theory: Patriarchy**
- 3. Identities and Inequalities** (30 hrs.)
  - 3.1. **Caste**
  - 3.2. **Race and Ethnicity**
  - 3.3. **Gendered Stratification: LGBTQ Identities**
- 4. Political Economy of Inequality** (10 hrs.)
  - 4.1 Economic Inequality and Democracy
  - 4.2 Globalization and the Third World

**Reading References:**

1. Acker, Joan. 1973. 'Women and Social Stratification: A Case of Intellectual Sexism', in *The American Journal of Sociology*, Vol. 78, No. 4.
2. Ahmad, Imtiaz, ed. *Caste and social stratification among Muslims in India*. South Asia Books, 1978.
3. Arum, Richard, Irene R. Beattie and Karly Ford (eds.). 2011. *The Structure of Schooling: Readings in the Sociology of Education*. London: Sage.
4. Bailey, F. G. 1963. 'Closed Social Stratification in India', in *European Journal of Sociology*, Vol. 4, No. 1.
5. Barber, Bernard. *Social stratification: A comparative analysis of structure and process*. Harcourt, Brace, 1957.
11. Bendix, Reinhard and Seymour Martin Lipset (eds.). 1967. *Class, Status and Power*. London: Routledge & Kegan Paul.
6. Beteille, Andre. 1977. *Inequality among Men*. London: Blackwell.
7. Bottero, Wendy. 2005. *Stratification*. London: Routledge.
8. Bottomore, T. B. 1971. *Sociology: A Guide to Problems and Literature*. London: George Allen & Unwin Ltd.
9. Bourdieu, Pierre, and Jean-Claude Passeron. *Reproduction in education, society and culture*. Vol. 4. Sage, 1990.
10. Bourdieu, Pierre, and Loïc JD Wacquant. *An invitation to reflexive sociology*. University of Chicago press, 1992.
11. Bourdieu, Pierre. "Social space and symbolic power." *Sociological theory* 7.1 (1989): 14-25.
12. Bourdieu, Pierre. "What makes a social class? On the theoretical and practical existence of groups." *Berkeley journal of sociology* 32 (1987): 1-17.

13. Bourdieu, Pierre. *The social structures of the economy*. Polity, 2005.
14. De Vos, George A. *Ethnic pluralism: Conflict and accommodation: The role of ethnicity in social history*. AltaMira Press, 1995.
15. Eriksen, Thomas Hylland. *Ethnicity and nationalism: Anthropological perspectives*. Pluto Press, 2002.
16. Gupta, Dipankar (ed.). 1992. *Social Stratification*. New Delhi: Oxford University Press.
17. H. H. and C. Wright Mills. 1946. *From Max Weber*. New York: Oxford University Press
18. Haralambos, Michael and Martin Holborn. 2008. *Sociology: Themes & Perspectives*. London: HarperCollins Publishers Ltd.
19. Isajiw, Wsevolod W. "Definitions of ethnicity." *Ethnicity* 1.2 (1974): 111-124.
20. Jain, Ravindra K. 1996. 'Hierarchy, Hegemony and Dominance: Politics of Ethnicity in Uttar Pradesh, 1995', in *Economic and Political Weekly*, Vol. 31, No. 4.
21. Juliet. 1971. *Woman's Estate*. Harmondsworth: Penguin
22. Kerbo, Harold R. *Social stratification and inequality: Class conflict in historical and comparative perspective*. McGraw-Hill College, 1996.
23. Lenski, Gerhard E. *Power and privilege: A theory of social stratification*. UNC Press Books, 2013.
24. Lin, Nan. *Social capital: A theory of social structure and action*. Vol. 19. Cambridge university press, 2002.
25. McLellan, David. 1980. *The Thought of Karl Marx*. London: Papermac, MacMillan.
26. Moore, Wilbert Ellis. *Social change*. Prentice Hall, 1974.
27. Omi, Michael, and Howard Winant. 2015. *Racial Formation in the United States*. New York: Routledge
28. Parsons, Talcott. "A revised analytical approach to the theory of social stratification." *New York* (1953).
29. Parsons, Talcott. "An analytical approach to the theory of social stratification." *American Journal of Sociology* 45.6 (1940): 841-862.
30. Parsons, Talcott. "Equality and inequality in modern society, or social stratification revisited." *Sociological Inquiry* 40.2 (1970): 13-72.
31. Reinhard. 1974. 'Inequality and Social Structure: A Comparison of Marx and Weber', in *American Sociological Review*, Vol. 39, No. 2.
32. Sharma, Kanhaiya Lal. *Social Stratification and Mobility*. Rawat Publications, 1994.
33. Sharma, Kanhaiyalal. *Social stratification in India: issues and themes*. Sage Publications, 1997.
34. Sharma, Kanhaiya Lal, and Yogendra Singh. *Social inequality in India: Profiles of caste, class, power, and social mobility*. South Asia Books, 1995.
35. Sharma, Kanhaiyalal. *Essays on Social Stratification*. Jaipur: Rawat, 1980.
12. Stinchcombe, Arthur L. 1963. 'Some Empirical Consequences of Davis-Moore Theory of Stratification', in *American Sociological Review*. Vol. 28, No. 5.
36. T. Bottomore. 1966. *Classes in Modern Society*. New York: Pantheon Books.
37. Tawney, R. H. 1964. *Equality*. London: George Allen & Unwin Inc
38. 'The Continuing Debate on Equality' that contains the papers: by Kingsley Davis and Wilbert E. Moore, 'Some Principles of Stratification' (earlier published in *American Sociological Review*, Vol. 10, No. 2 (1945)); by Melvin M. Tumin, 'Some Principles of Stratification: A Critical Analysis' (earlier published in *American Sociological Review*, Vol. 18 (August, 1953)); and by Kingsley Davis and then by Wilbert E. Moore, 'Reply to Tumin' and 'Comment', respectively (earlier published in *American Sociological Review*, Vol. 18 (August 1953))
39. Tumin, Melvin M. 1994. *Social Stratification: The Forms and Functions of Inequality*. New Delhi: Prentice-Hall of India.
40. Worsley, Peter et al. 1970. *Introducing Sociology*. Harmondsworth: Penguin Books.

**Semester V**  
**Core Course 11**  
**(SOCACOR11T)**  
**Sociological Thinkers I**

**Outline: 1. Karl Marx (25 hrs.)**

- 1.1. **Materialist Conception of History**
- 1.2. Capitalist Mode of Production

**2. Emile Durkheim (25 hrs.)**

- 2.1. Social Fact
- 2.2. **Individual and Society**

**3. Max Weber (25 hrs.)**

- 3.1. Social Action and Ideal Types
- 3.2. **Religion and Economy**

**Reading References:**

1. Allan, Kenneth. 2013. The Social Lens: An Invitation to Social and Sociological Theory (Part I: Modernity and the Sociological Response) Third Edition, Sage.
2. Aron, Raymond. 1986. Main Currents in Sociological Thought, Vol. I & II, Penguin Books, Harmondsworth, Middlesex, 1986.
3. Bannerji, A., Historical Materialism and Political Analysis : K.P. Baghi
4. Barnes , H.E. – (1959) Introduction to the History of Sociology
5. Coser, L.A. – (1979) Masters of Sociological Thought . Oxford University Press
6. Coser, Lewis A. Masters of Sociological Thought: Ideas in Social and Historical Context, Second Edition, New York, Harcourt Brace Jovanovitch, 1977
7. Durkheim, E. 1951. Suicide: A Study in Sociology. New York: The Free Press.
8. Durkheim, E. 1958. The Rules of Sociological Method. New York: The Free Press.
9. Frisby, David. 2002. Georg Simmel (Revised Edition) (Key Sociologists Series). Routledge.
10. Frisby, David. George Simmel. Ellis Horwood Limited.
11. Gane, Mike. 1992. The Radical Sociology of Durkheim and Mauss. London: Routledge.
12. Giddens, A. 1971. Capitalism and Modern Social Theory: An Analysis of the Writings of Marx, Durkheim and Max Weber. Cambridge: Cambridge University Press
13. Hughes, J.A, W, Sharrock and P.J. Martin. 2003. Understanding Classical Sociology: Marx, Weber, Durkheim (2<sup>nd</sup> edition), Sage.
14. Kon, Igor S. 1989. A History of Classical Sociology, Trans. M. Campbell Creighton,

- Progress Publishers, Moscow, 1989.
15. Marx, K. and F. Engels. 1969. Selected Works Vol. 1. Moscow: Progress Publishers.
  16. McLellan, David. 1975. Marx. London: Fontana Press.
  17. Nisbet, R. A. 1967. The Sociological Tradition. London: Heinemann.
  18. Poggi, Gianfranco. 2006. Weber. Cambridge, UK: Polity. Ransome, Paul. 2010. Social Theory. Rawat Publication.
  19. Ritzer, George. 1996. Classical Sociological Theory, McGraw-Hill
  20. Timasheff, N. S. Sociological Theory. Random House. 1967.
  21. Turner Jonathan H. 2003, The Structure of Sociological Theory , Thomson Wadsworth, Chennai
  22. Turner, Bryan S. 1999. Classical Sociology, Sage Publications, New Delhi.
  23. Weber, Max. 1947. The Theory of Social and Economic Organization. New York: The Free Press.
  24. Wolff, Kurt H. (ed.). 1950. The Sociology of Georg Simmel (Tr. Kurt H. Wolff). The Free Press of Glencoe.
  25. Zeitlin , Irving – Ideology and the Development of Sociological Theory

**Semester V**  
**Core Course 12**  
**(SOCACOR12T)**

**Sociological Research Methods – I**

- Outline:**
- 1. What is Sociological Research? (25 hrs.)**
    - 1.1 Objectivity and Reflexivity in Sociology
    - 1.2 Theory and Research
    - 1.3 Concepts and Hypothesis
    - 1.4 Field (Issues and Context)
  
  - 2. Perspectives towards study of social phenomenon(25 hrs.)**
    - 2.1 The Scientific Method: Positivism and Empiricism in sociology; Objectivity and Subjectivity; Deductive and Inductive
    - 2.2 Critique of the Scientific Method: Qualitative, Quantitative and Triangulation
    - 2.3 **Types of Research: Basic and Applied, Historical, Empirical, Descriptive, Exploratory, Comparative, Feminist**
  
  - 3. Modes of Enquiry (25 hrs.)**
    - 3.1 Field Research and Survey Research
    - 3.2 Case Study
    - 3.3 Content Analysis

**Reading References:**

1. A. L. Epstein (ed.), The Craft of Social Anthropology, Delhi: Hindustan Publishing Corporation
2. Babbie, Earl. The practice of social research. Wadsworth Cengage, 2009.
3. Bentz, Valerie Malhotra, and Jeremy J. Shapiro. Mindful inquiry in social research. Sage Publications, 1998
4. Beteille Andre- (2002) Sociology : Essays on Approach and Method, OUP, Delhi
5. Bryman, Alan. 2004, Quantity and Quality in Social Research, New York: Routledge
6. Bryman, Alan. Social research methods. Oxford university press, 2015.
7. Bose, Pradip Kumar. 1995. Research Methodology, New Delhi: ICSSR
8. Denscombe, Martyn. The good research guide: for small-scale social research projects. McGraw-Hill Education (UK), 2014.
9. Goode, W.J. and P. Hall – (1952) Methods in social Research , New York , Mac Graw Hill
10. Mills, C. W. 1959, The Sociological Imagination, London: OUP
11. Mouton, Johann, and Hendrik Christoffel Marais. Basic concepts in the methodology of the social sciences. HSRC Press, 1988.



12. Morgan, Gareth, Ed. *Beyond Method: Strategies for social research*. Sage, 1983
13. Mouton, Johann. *Understanding social research*. Van Schaik Publishers, 1996.
14. Neuman, William Lawrence, and Karen Robson. *Basics of social research*. Pearson Canada, 2014.
15. Ram Ahuja 2007, *Research Methods*, Rawat Publications, Jaipur
16. Sandra Harding (ed.) *Feminism & Methodology: Social Science Issues*, Bloomington: Indiana University Press.
17. Sarantakos, Sotirios. *Social research*. Palgrave Macmillan, 2012.
18. Smith, Herman W. *Strategies of social research: The methodological imagination*. Prentice Hall, 1981.
19. Stinchcombe, Arthur L. *The logic of social research*. University of Chicago Press, 2005.
20. Young, P.V.-(1966) *Scientific Social Survey and Research*, Prentice Hall, New Delhi
21. Bailey, K. (1994). *The Research Process in Methods of social research*. Simon and Schuster, 4th ed. The Free Press, New York NY
22. Baker, Therese L. *Doing social research*. McGraw-Hill College, 1988.
23. Blalock, H. M. 1979. *Social Statistics*. McGraw-Hill Book Company.
24. Burns, Robert Bounds. *Introduction to research methods*. Addison Wesley Longman, 1997.
25. Creswell, John W. *Research design: Qualitative & quantitative approaches*. Sage Publications, Inc, 1994.
26. Denzin, Norman K., and Yvonna S. Lincoln. *Handbook of qualitative research*. Sage publications, inc, 1994.
27. Elifson, K.W. 1990. *Fundamentals of Social Statistics*. McGraw-Hill Book Company
28. Goode, W. E. and P. K. Hatt. 1952. *Methods in Social Research*. New York: McGraw Hill.
29. Gupta, S. P. (2007). *Elementary Statistical Methods*. Sultan Chand & Sons.
30. Neuman, W. Lawrence. *Social research methods: Qualitative and quantitative approaches*. Pearson education, 2013.
31. Reaves, Celia C. *Quantitative research for the behavioral sciences*. John Wiley & Sons, 1992.
32. Young, P.V. 1964. *Scientific Social Surveys and Research*. Prentice Hall

**Semester VI**  
**Core Course 13**  
**(SOCACOR13T)**

**Sociological Thinkers II**

**Outline:**

- 1. Talcott Parsons (11 hrs.)**
  - 1.1. Action Systems
  
- 2. Claude LeviStrauss (8 hrs.)**
  - 2.1. Structuralism
  
- 3. G. H. Mead and Erving Goffman (15 hrs.)**
  - 3.1. Interactional Self
  
- 4. Peter L. Berger and Thomas Luckmann (8 hrs.)**
  - 4.1. Social Construction of Reality
  
- 5. Max Horkheimer, T.W. Adorno and Herbert Marcuse (25 hrs.)**
  - 5.1. Critical Social Theory
  
- 6. Pierre Bourdieu (8 hrs.)**
  - 6.1. A Theory of Practice

**Reading References:**

1. Berger, Peter. "Luckmann. T. (1966). The social construction of reality: A treatise in the sociology of knowledge." New York: Double and Company (1967).
2. Berger, Peter. "Thomas Luckmann 1966 The Social Construction of Reality." Garden City: Doubleday (1977).
3. Bourdieu, Pierre, and Loïc JD Wacquant. An invitation to reflexive sociology. University of Chicago press, 1992.
4. Bourdieu, Pierre, Craig Calhoun, Edward LiPuma, and Moishe Postone, eds. Bourdieu: critical perspectives. University of Chicago Press, 1993.
5. Bourdieu, Pierre. Outline of a Theory of Practice. Vol. 16. Cambridge university press, 1977.
6. Burns, Tom. Erving Goffman. Routledge, 2002.
7. Cahill, Spencer. "Erving Goffman." Symbolic Interactionism: An introduction, An interpretation, An intergration New Jersey, Nancy Roberts, Pearson Education Inc. Pearson Prentice Hall(2004).
8. Calhoun, Craig. Critical social theory: Culture, history, and the challenge of difference.

- Wiley-Blackwell, 1995.
9. Collins, Randall. *Four sociological traditions*. Oxford University Press, USA, 1994.
  10. Culler, Jonathan. *On deconstruction: Theory and criticism after structuralism*. Cornell University Press, 2007.
  11. Glaser, Barney G., and Anselm L. Strauss. "Awareness contexts and social interaction." *American sociological review* (1964): 669-679.
  12. Goffman, E. 1956. *The Presentation of Self in Everyday life*. Edinburgh: University of Edinburgh
  13. Horkheimer, M and Adorno, T.W. *The Dialectic of Enlightenment*. 2002. Stanford University Press. Stanford: California.
  14. Lechte, John, ed. *Fifty key contemporary thinkers: From structuralism to postmodernity*. Routledge, 2006.
  15. LeviStrauss, C. 1993. "Structure and Dialectics", in *Structural Anthropology Volume I*. Harmondsworth: Penguin.
  16. Manis, Jerome G., Bernard N. Meltzer, and Jerome G. Manis. *Symbolic interaction: A reader in social psychology*. Boston: Allyn and Bacon, 1972.
  17. Marcuse, H. 1964. *One Dimensional Man: Studies in the Ideology of Advanced Industrial Society*. Boston: Boston Press
  18. Parsons, T. and E. Shils (eds). 1951. *Towards a General Theory of Action*. New York: Harper and Row Publishers.
  19. Potter, Jonathan. *Representing reality: Discourse, rhetoric and social construction*. Sage, 1996.
  20. Ritzer, G. 1996. *Sociological Theory*. New York: McGraw Hill Companies
  21. Sarup, Madan. *An introductory guide to post-structuralism and postmodernism*. Pearson Education, 1993.
  22. Sturrock, John. *Structuralism and since: from Lévi-Strauss to Derrida.*, OUP, 1979
  23. Thompson, John B. *Ideology and modern culture: Critical social theory in the era of mass communication*. John Wiley & Sons, 2013.
  24. Willcocks, Leslie P., and John Mingers. *Social theory and philosophy for information systems*. John Wiley & Sons Ltd, 2004.
  25. Zeitlin, Irving M. *Rethinking sociology: A critique of contemporary theory*. Appleton-Century-Crofts, 1973.

**Semester VI**  
**Core Course 14**  
**(SOCACOR14T)**

**Sociological Research Methods II**

**Outline:**

**1. Sampling : (12 hrs.)**

1.1 Probability and Non-probability

**2. Data Collection : (12 hrs.)**

2.1 Interview

2.2 Questionnaire

2.3 Observation

**3. Data Analysis: (15 hrs.)**

3.1 Quantitative

3.2 Qualitative

**4. Statistical Methods : (36 hrs.)**

4.1 Graphical and Diagrammatic Representation – Bar Diagrams, Pie Chart, Histogram, Frequency Polygon, Smoothed Frequency Curve and Ogive

4.2 Measures of Central Tendency: Mean, Median, Mode

4.3 Measures of Dispersion: Range, Variance, Standard Deviation

**Reading References:**

1. Bailey, K. (1994). *Methods of social research*. Simon and Schuster, 4th ed. The Free Press, New York NY 10020.
2. Elifson, K.W., Audrey Haber, & Richard Runyon (1982) *Fundamentals of Social Statistics*, Addison Wesley
3. Frankfort-Nachmias, Chava, and Anna Leon-Guerrero. *Social statistics for a diverse society*. Sage Publications, 2017.
4. Goode, W. E. and P. K. Hatt. 1952. *Methods in Social Research*. New York: McGraw Hill.
5. Goon, A.M., M.K. Gupta and B. Dasgupta- (1978) *Basic Statistics*, Kolkata World Press Pvt. Ltd
6. Gupta, S. P. (2007). *Elementary Statistical Methods*. Sultan Chand & Sons.
7. Irvine, John, Ian Miles, and Jeff Evans, (Eds). *Demystifying social statistics*. London: Pluto Press, 1979.
8. Kothari, C R, 2004, *Research Methodology*, New Delhi: New Age International
9. Morgan, Gareth, Ed. *Beyond Method: Strategies for social research*. Sage, 1983

# **B.A. (Honours) Sociology**

## **Syllabus**

### **Discipline Specific Elective Papers**

#### **Under Choice Based Credit System (CBCS)**

**West Bengal State University**

**June 2018**

**Semester V**  
**Urban Sociology**  
**(SOCADSE01T)**

**Outline:**

**1.4 Introducing Urban Sociology:** What is Urban, Urbanism and the City  
(10 hrs.)

**1.5 Perspectives in Urban Sociology**(20 hrs).

- 2.1. Ecological
- 2.2. Political Economy
- 2.3. Network
- 2.4. City as Culture

**1.6 Movements and Settlements** (20 hrs.)

- 3.1. Migration
- 3.2. Community

**1.7 Politics of Urban Space** (25 hrs.)

- 4.1. Culture and Leisure
- 4.2. Caste, Class and Gender

**Reading Reference**

1. Abraham, M.-(1976) Urban Sociology, Prentice Hall
2. Bose Ashish –(1974) Studies in India's Urbanization 1961-1971, Tata McGraw Hill
3. Bridge and Sophie Watson, (eds.) The Blackwell City Reader. Oxford and Malden, MA: Wiley Blackwell
4. Desai, A.R. & Pillai(ed)-(1970) Slums and Urbanization, Popular Publications
5. Gilbert, S.J.-(1985) Fundamentals of Industrial Sociology, Tata Mac Graw Hill Publishing Co. Ltd., New Delhi
6. Harvey, David 1985 The Urban Experience, Baltimore: Johns Hopkins University Press
7. I. Susser (ed.) The Castells Reader on Cities and Social Theory, Blackwell
8. Miller and Form-(1964) Industrial Sociology, Harper and Row, New York
9. Miller, D.C. & Form, W.H.- (1980) Industrial Sociology, Harper and Row

- 2 Mumford, Lewis 1961. The City in History: its origins and transformations and its prospects, Mariner Books
- 3 N. Joyaram& D. Raja Shekhar(ed) 2012 Vulnerability& Globalization , Rawat Publications
- 4 NandkarniLaxmi –(1998) Sociology of Industrial workers, Jaipur, Rawat Publications
- 5 Parker, Simon. Urban Theory and Urban Experience: Encountering the City, London: Routledge
- 6 PrakasaRao VLS-(1983), Urbanization in India, Concept Publishing Co.
- 7 Ramachandran, R.-(1991) Urbanization and Urban Systems in India, OUP ,Delhi
- 8 Ramaswamy& Uma Rawaswamy – (1981) Industry and Labour, OUP
- 9 Ramaswamy, E.A,- (1988) Industry and Labour , New Delhi ,OUP
- 10 Ramaswamy, E.A.- (1978) Industrial Revolution in India, New Delhi
- 11 Rao, M.S.A., C.Bhatt&Kadekar, L.N.(Eds)-(1991): A reader in Urban Sociology, Orient Longman ,New Delhi
- 12 Robin Cohem& Paul Kenedy, Global Sociology, Palgrave, Maclinan
- 13 RonnanPaddison -(2001), Handbook of Urban Studies ,Sage India
- 14 Srivastava, A.K. 1989 Urbanization: Concept and Growth , D.K. Publishers & Distributors, New Delhi

**Semester V**  
**Agrarian Sociology**  
**(SOCADSE02T)**

**Outline:**

**1. Agrarian Societies and Agrarian Studies(10 hrs.)**

- 1.1 Agrarian Societies
- 1.2 Agrarian Studies

**2. Key Issues in Agrarian Sociology(20 hrs.)**

- 2.1 The Agrarian Question
- 2.2 The Moral Economy
- 2.3 Agrarian Commodity Systems

**3. Themes in Agrarian Sociology of India (30 hrs.)**

- 3.1 Labour and Agrarian Class Structure
- 3.2 Markets, Land Reforms and Green Revolution
- 3.3 Agrarian Movements
- 3.4 Caste, Gender and Agrarian Realities

**4. Agrarian Futures (15 hrs.)**

- 4.1 Agrarian Crisis
- 4.2 The Global Agrarian Order

**Reading Reference**

1. Abrol, Yash P., Satpal Sangwan, and Mithilesh K. Tiwari, eds. Land Use--Historical Perspectives: Focus on Indo-Gangetic Plains. Allied Publishers, 2002.
2. Beteille, Andre. 2007 'The Study of Agrarian Systems: An Anthropological Approach', from Marxism and Class Analysis, New Delhi: Oxford
3. David Mandelbaum, 1983, Sociology in India Bombay: Popular Publication
4. Desai A R 1994, Rural Sociology, Bombay: Popular Prakshan,
5. Doshi S L & P.C Jain, 1999 Rural Sociology, Jaipur: Rawat Publications
6. Ghuye, 1969, Caste & Race in India, Bombay Popular Prakasan
7. Hans Raj 2000 Rural Sociology, Surjeet Publications
8. Harriss, J o h n. Capitalism and Peasant Farming: Agrarian Structure and Ideology in North Tamil Nadu, Delhi: Oxford University Press, 1982
9. Jodhka Surinder(Ed) 2012, Village Society: Essays from the EPW, New Delhi, Orient Blackswan



4. Joshi, 1975 Land Problem in India Trends and perspectives, Calcutta: Allied Publishers
5. Lieten, 1992, Continuity & Change in Rural West Bengal, New Delhi: Sage
6. Madan, G. R., India's Developing Villages, Bombay: Allied Publications
7. Madan, Vandana (ed) 2002, The Village in India, Oxford India Reading in Sociology and Anthropology, Delhi, OUP
8. Nadkarni, MangeshVenktesh. Farmers' movements in India. Vol. 58. Ahmedabad: Allied Publishers, 1987.
9. Scott, James C. 1976 The Moral Economy of the Peasant: Rebellion and Subsistence in South East Asia, New Haven: Yale University Press
10. Singh, Katar. 2009, Rural Development: Principles, Policies and Management, New Delhi: Sage
11. T. V. Satyamurthy (Ed.) Industry and Agriculture in India Since Independence, Delhi: Oxford University Press
12. Varshney, Ashutosh. Democracy, development, and the countryside: Urban-rural struggles in India. Cambridge University Press, 1998.

**Semester V**  
**Environmental Sociology**  
**(SOCADSE03T)**

**Outline:**

**1. Envisioning Environmental Sociology (15 hrs.)**

- 1.1. What is Environmental Sociology?
- 1.2. Realist Constructionist Debate.

**2. Approaches (30 hrs.)**

- 2.1 Treadmill of Production
- 2.2 Ecological Modernization
- 2.3 Risk
- 2.4 Ecofeminism and Feminist Environmentalism
- 2.5 Political Ecology

**3. Environmental Movements in India (30 hrs.)**

- 3.1 Forest based movement – Chipko
- 3.2 Water based movement – Narmada
- 3.3 Land based movements – Anti-mining and Seed (Beej Bachao Andolan)

**Reading Reference**

1. Barry, Jhon, 2007, Environment and Social Theory, Routledge
2. Becker, E & Thomas J (ed), 1999, Sustainability and the Social Sciences, Zed Books
3. Bell, M.M., 2004, Invitation to Environmental Sociology, Pine & Forge
4. Bell, Michael Mayerfeld. An invitation to environmental sociology. Sage Publications, 2011.
5. Buttel, Frederick H. "Ecological modernization as social theory." *Geoforum* 31.1 (2000): 57-65.
6. Buttel, Frederick H. "Reflections on the potentials of ecological modernization as a social theory." *Natures sciences sociétés* 8.1 (2000): 5-12.
7. Gadgil, Madhav & Ramachandra Guha, Ecology and Equity: The Use and Abuse of Nature in Contemporary India, OUP New Delhi
8. Guha, Ramachandra, 1994, Social Ecology, OUP New Delhi
9. Guha, Ramachandra, 2000, Environmentalism, OUP New Delhi
10. Hannigan, J. A. "Environmental sociology: A social constructionist approach. London: Routledge." (1995).
11. Hannigan, John, 1995, Environmental Sociology, Routledge, London
12. Mol, Arthur P.J. "Ecological modernization and the global economy." *Global Environmental Politics* 2.2 (2002): 92-115.
13. Padel, Felix, and Samarendra Das. "Orissa's highland clearances: The reality gap in R & R." *Social Change* 38.4 (2008): 576-608.
14. Rangarajan, Mahesh, ed. Environmental Issues in India: A Reader. Pearson Education India, 2007.
15. Shiva, Vandana, 1991, Ecology and Politics of Survival, Sage New Delhi

**Semester V**  
**SOCIOLOGY OF WORK**  
**(SOCADSE04T)**

- Outline:**
- 1. Interlinking Work and Industry(10 hrs.)**
  - 2. Forms of Industrial Culture and Organisation (20 hrs.)**
    - 2.1 Industrialism
    - 2.2 Post-industrial Society
    - 2.3 Information Society
  - 3. Dimensions of Work (20 hrs.)**
    - 3.1 Alienation
    - 3.2 Gender
    - 3.3 Unpaid Work and Forced Labour
  - 2 Work in the Informal Sector (10 hrs.)**
    - 4.1 Nature and Types
    - 4.2 Social, Political and Economic Consequences
  - 3 Risk, Hazard and Disaster (15 hrs.)**
    - 5.1 Socio-Environmental Risk – The case of Tehri Dam
    - 5.2 Health Hazards – Silicosis Intervention
    - 5.3 Industrial Disaster – The case of Bhopal Gas Tragedy

**Reading Reference**

1. Bhowmik, Sharit. 2012. Industry, Labour and Society, Orient Blackswan
2. Edgell, Stephen. The sociology of work: Continuity and change in paid and unpaid work. Sage, 2011.
3. Erikson, Kai, and Steven Peter Vallas, eds. The nature of work: Sociological perspectives. Yale University Press, 1990.
4. Gilbert, S.J.-(1985) Fundamentals of Industrial Sociology, Tata Mac Graw Hill Publishing Co. Ltd., New Delhi
5. Grint, Keith. The sociology of work: introduction. Polity, 2005.
6. Kumar, Krishan. From post-industrial to post-modern society: New theories of the contemporary world. John Wiley & Sons, 2009.
7. Miller and form-(1964) Industrial Sociology, Harper and Row, New York
8. Miller, D.C. &Form,W.H. (1980) Industrial Sociology, Harper and Row
9. NandkarniLaxmi (1998) Sociology of Industrial Workers, Jaipur, Rawat
10. Parker, Stanley Robert. The sociology of industry. Vol. 1. Allen &Unwin Australia, 1977.
11. Ramaswamy, E.A,-(1978)Industrial Revolution in India, New Delhi
12. Ramaswamy, E.A,-(1988)Industry and Labour, New Delhi, OUP
13. Schneider Eugene-(1979) Industrial Sociology, New Delhi, Tata Mac Graw Hills
14. Seth, N.R.(ed)- (1982)Industrial Sociology in India, Kolkata, Allied Publishers
15. Volti, Rudi. An introduction to the sociology of work and occupations. Sage Publications, 2011.
16. Watson, Tony. Sociology, Work and Organisation. Taylor & Francis, 2017.

**Semester VI**  
**Sociology of Health and Medicine**  
**(SOCADSE5T)**

**Outline:**

- 1. Introduction to the Sociology of Health and Medicine (20 hrs.)**
  - 1.1 Origins and Development
  - 1.2 Conceptualizing Disease, Sickness and Illness
  - 1.3 Social and Cultural Dimensions of Illness and Medicine
  
- 2. Theoretical Orientations in Health and Illness (30 hrs.)**
  - 2.1 Political Economy
  - 2.2 Systems Approach
  - 2.3 Discourse and Power
  - 2.4 Feminist Approach
  
- 3. Negotiating Health and Illness (25 hrs.)**
  - 3.1 Medical Practices
  - 3.2 Health Policies in India

**Reading Reference**

10. Annandale, Ellen. The sociology of health and medicine: a critical introduction. Polity, 1998.
11. Foucault, Michel. "The Birth of the Clinic: An Archaeology of Medical Perception (1963), trans." AM Sheridan Smith (New York: Vintage, 1994) 19
12. Freund, Peter ES, Meredith B. McGuire, and Linda S. Podhurst. Health, illness, and the social body: A critical sociology. Prentice Hall, 2003.
13. Good, Byron J. Medicine, rationality and experience: an anthropological perspective. Cambridge University Press, 1993.
14. John M c K i n l a y, 1984 Issues i n t h e P o l i t i c a l Economy of Healthcare. New York: Tavistock
15. Kleinman, Arthur. The illness narratives: suffering, healing, and the human condition. Basic books, 1988.
16. Leslie, Charles M., ed. Asian medical systems: A comparative study. Vol. 3. MotilalBanarsidass Publisher, 1998.
17. Nelson, James Lindemann, and Hilde Lindemann Nelson, eds. meaning and medicine: a reader in the philosophy of health care. Psychology Press, 1999.
18. Turner, Bryan S. Medical power and social knowledge. Sage, 1995.

**Semester VI**  
**Indian Sociological Traditions**  
**(SOCADSE06T)**

**Outline:**

**1. G S Ghurye (15 hrs.)**

- 1.1 Caste and Race
- 1.2 City and Civilization

**2. Radhakamal Mukerjee (15 hrs.)**

- 2.1 Personality, Society, Values
- 2.2 Social Ecology

**3. D. P. Mukerji (15 hrs.)**

- 3.1 Tradition and Modernity
- 3.2 Middle Class

**4. Verrier Elwin (5 hrs.)**

- 3. Tribes in India

**5. M.N. Srinivas (10 hrs.)**

- 5.1. Social Change

**6. Irawati Karve (10 hrs.)**

- 2 Gender and Kinship

**7. Leela Dube (5 hrs.)**

- 7.1 Caste and Gender

**Reading Reference**

1. Chakraborty, D 2010, D P Mukerji and the Middle Class in India, Sociological Bulletin 59(2), May-August 235-255
2. Dhanagare, D.N (1999), Themes and Perspectives in Indian Sociology, Delhi: Rawat Publications Chp 7
3. Dube, Leela 2001, Anthropological Explorations in Gender: Intersecting Fields, New Delhi: Sage Chp 3,5& 6
4. Dube, Leela 1967, Caste, Class and Power: Eastern Anthropologist Lucknow 20(2)

215-225

5. East: Founders of Indian Sociology and Anthropology, New Delhi: Permanent Black
6. Elwin, Verrier 1952, Bondo Highlander, Bombay: OUP
7. Elwin, Verrier 1955, The Religion of an Indian Tribe, Bombay: OUP Chp 11, 15, 16, 17
8. Ghurye, G.S. 1969, Caste and Race in India, Delhi: Popular Prakashan Pp 114-140, 404-460 (82 pages)
9. Ghurye, G.S. 1962, Cities and Civilization, Delhi: Popular Prakashan
10. Guha, Ramchandra 2010, „Between Anthropology and Literature: The Ethnographies of Verrier Elwin“ in Patricia Uberoi, Satish Deshpande and Nandini Sundar (eds) Anthropology in the East: Founders of Indian Sociology and Anthropology, New Delhi: Permanent Black
11. Karve, Irawati 1961, Hindu Society — an interpretation, Pune: Deshmukh Prakashan
12. Karve, Irawati 1965, Kinship Organization in India, Bombay and New York: Asia Publishing House
13. Madan T N 2011, Sociological Traditions: Methods and Perspectives in the Sociology of India, New Delhi: Sage
14. Madan, T.N. 2010, „Search for Synthesis: The Sociology of D.P Mukerji“ in Patricia Uberoi, Satish Deshpande and Nandini Sundar (ed) Anthropology in the East: Founders of Indian Sociology and Anthropology, New Delhi: Permanent Black
15. Mukerjee, Radhakamal 1932, (reproduced in 1994) „An Ecological Approach to Sociology“ in Ramchandra Guha (ed) Social Ecology Delhi: OUP
16. Mukerjee, Radhakamal 1932, The concepts of balance and organization in Social Ecology Sociology and Social Research 16 (July-August 1932) 503-516
17. Mukerjee, Radhakamal 1950, The Social Structure of Values, London: George Allen and Unwin Chp 2, 3, 5, 6 & 9
18. Mukerjee, Radhakamal 1951, The Dynamics of Morals, London: Macmillan & Co
19. Mukerji D.P. (1942 republished 2002), Modern Indian Culture: A Sociological Study, New

Delhi: Rupa& Co.

20. Mukerji D.P. (1958 second edition 2002), *Diversities: Essays in Economics, Sociology and Other Social Problems*, Delhi: Manak Publications Pg 177-225, 261-276
21. Munshi, Indra 2004, „Verrier Elwin and Tribal Development“ in T.B. Subba and SujitSom (eds) *Between Ethnography and Fiction: Verrier Elwin and the Tribal Question in India*, New Delhi: Orient Longman
22. Srinivas, M. N.1992, *On Living in a Revolution and Other Essays*, Delhi: OUP Chp 1,2,3,5&7
23. Srinivas, M.N. 1971, *Social Change in Modern India* University of California Press Berkeley Chp 4-5
24. Srinivas, M.N. 1996, *Indian Anthropologists and the study of Indian Society* EPW 31(11) 656-657
25. Sundar, Nandini 2010 „In the Cause of Anthropology: The Life and Work of IrawatiKarve“ in Patricia Uberoi, SatishDespande and NandiniSundar (ed) *Anthropology in the East: Founders of Indian Sociology and Anthropology* Permanent Black New Delhi
26. Uberoi, Patricia DespandeSatish and SundarNandini (ed) 2010, *Anthropology in the*
27. Upadhya, Carol 2010, „The Idea of an Indian Society: G.S. Ghurye and the Making of Indian Sociology“ in Patricia Uberoi, SatishDespande and NandiniSundar (ed) *Anthropology in the East: Founders of Indian Sociology and Anthropology* New Delhi: Permanent Black
28. Venugopal, C.N. 1988, *Ideology and Society in India: Sociological Essays*, New Delhi: Criterion Publications Chp 7

**Generic Elective (GE)**

**Semester I**

**Generic Elective01**

**(SOCHGEC01T)**

**Introduction to Sociology**

**Outline:**

1. **Sociology-The Discipline**: Sociology as a science and as an interpretative discipline; Study of Social Phenomena (8 hrs.)
  
2. **Basic Concepts**: Society, Community, Association, Institution; Culture-Components, Culture change, Diffusion, Cultural-lag, Cultural universals and Relativism, Ethnocentrism, Acculturation; Social Groups - primary, secondary, formal-informal, in group-out group, and Reference groups; Social structure, Social system, Social action; Status and Role, Role Conflict, **Role Set; Norms and Values-Conformity and Deviance; law and customs; socialization – theories and agencies; nature-nurture debate, social interaction** (25 hrs.)
  
3. **Marriage and Family**: **Types and forms of marriage; family-structure and function; personality and socialization; Social control; family, changing structure of family marriage and sex roles in modern society; divorce and its implications; gender issues; role conflicts.** (12 hrs.)
  
4. **Social Stratification**: Concepts-hierarchy, inequality and stratification; forms and functions; class- different conceptions of class: class-in-itself and class-for-itself; caste and class; caste as a class, social mobility (15 hrs.)
  
5. **Social Institutions**: Economy, Polity, Education and Religion (5 hrs.)
  
6. **Social Movements**: Concepts of social movements; genesis of social movements; ideology and social movement (5 hrs.)
  - a. **Social change**: **Continuity and change as fact, and as value; directed social**



change; social movement and social change; social policy  
(5 hrs.)

### **Reading Reference**

5. Alex Inkeles: What Is Sociology, PHI Learning, 1964
6. An Introduction to Sociology: Ken Browne, 3<sup>rd</sup> edition, Polity, 2005
7. Contemporary Sociology: An Introduction to Concepts and Theory, M. Francis Abraham, OUP India, 2006
8. SamakalinSamajtatwa: Ganguly&Moinuddin, 2<sup>nd</sup> Edition, Reena Books: Kolkata, 2013
9. Sociology: A Down-to-Earth Approach: James M. Henslin, Pearson; 11<sup>th</sup> edition 2011
10. Sociology: Essays on Approach and Method: A. Beteille, OUP India 2002
11. The Concise Encyclopedia of Sociology: George Ritzer and J. Michael Ryan (Edits), Blackwell Publishing, 2011

**Semester II**  
**Generic Elective 02**  
**(SOCHGEC02T)**  
**Sociology of India**

**Outline:**

- 1. India as a Plural Society** (10 hrs.)
- 2. Social Institutions and Practices**(25 hrs.)
  - 2.1 Caste
  - 2.2 Tribe
  - 2.3 Class
  - 2.4 Village
  - 2.5 Family and Kinship
- 3. Identities and Change**(20 hrs.)
  - 3.1 **Dalit Movement**
  - 3.2 **Women's Movement**
- 4. Challenges to State and Society**(20 hrs.)
  - 4.1 **Communalism**
  - 4.2 **Secularism**

**Reading Reference**

1. Contemporary India: Economy, Society, Politics: NeeraChandhoke& Praveen Priyadarshi, Pearson Education India, 2009
2. Dalit identity and Politics. Shah, Ghanshyam. Delhi: Sage 2001
3. Development and Civil Society: BiswajitGhosh (Ed), Rawat, 2012
4. Family and Social Change in Modern India: Giri Raj Gupta, Vikas Publishing House, 1976
5. Family, Kinship and Marriage in India: Patricia Uberoi, OUP India, 1994
6. Handbook of Indian Sociology: Veena Das, OUP India, 2006
7. Indian Society: Institutions and Change: Rajendra K Sharma, Atlantic

- Publishers &Dist, 2004
8. India's Agony over Religion: Gerald James Larson, Suny Press, 1995
  9. On Civil Society: Issues and Perspectives: N.Jayaram, Sage, 2005
  10. Religion in India: T. N. Madan, OUP India, 1992
  11. Samakalin Bharatiya Samaj: Ganguly & Moinuddin, PHI Learning 2008 (in Bengali)
  12. Social Background of Indian Nationalism (6Th-Edn): A. R. Desai, Popular Prakashan, 2005
  13. Social Change in India: B Kuppuswamy, Vikas Publications, 1972
  14. Social Stratification: Dipankar Gupta, OUP India 1991
  15. Society in India: Change & Continuity: D.G Mandelbaum, University of California Press, 1970
  16. The everyday state and society in modern India: C.J. Fuller and Veronique Benei (eds), C. Hurst & Co. Publishers, 2001
  17. The Furies of Indian Communalism: Religion, Modernity, and Secularization: Achin Vanaik, Verso, 1997
  18. Tradition, Rationality, and Change: Essays in Sociology of Economic Development and Social Change: M.S.A Rao, Popular Prakashan, 1972
  19. Tribal India today: Nadeem Hashain, (2<sup>nd</sup> Ed.), Harnam Publications, New Delhi, 1991
  20. Tribe, Caste and Religion: R. Thaper (ed.), New Delhi: Macmillan 1977
  21. Understanding Contemporary India: Critical Perspectives: Achin Vanaik & Rajeev Bhargava, Orient Black Swan, 2010
  23. Bharatiya Samaj Prasangey: Aniruddha Choudhury, Chatterjee Publishers, 2016

**Semester III**  
**Generic Elective 03**  
**(SOCHGEC03T)**  
**Sociological Theories**

**Outline:**

**1. Karl Marx(25 hrs.)**

- 1.1 Materialist Conception of History
- 1.2 Class and Class Struggle

**2. Emile Durkheim(25 hrs.)**

- 2.1 Social Fact
- 2.2 Forms of Solidarity

**3 Max Weber(25 hrs.)**

- 3.1 Ideal Types and Social Action
- 3.2 Types of Authority

**Reading Reference**

1. A Short History of Sociological Thought: Alan Swingewood, PHI Learning, 1991
2. Classical Sociological Theory: George Ritzer, McGraw Hill, 1996
3. How to Read Karl Marx: Ernest Fischer, Aakar: New Delhi 2008
4. Masters of Sociological Thought: Lewis A. Coser, Rawat: Jaipur, 1977
5. Tatwo O Chintadarshe Samokalin Samajtatwa: RamanujGanguly, 2<sup>nd</sup> Ed, Reena Books: Kolkata 2013 (in Bengali)
6. The Communist Manifesto (21 February 1848), Karl Marx & Friedrich Engels, Echo Library, 2009

**Semester IV**  
**Generic Elective 04**  
**(SOCHGEC04T)**  
**Methods of Sociological Enquiry**

**Outline:**

**1. The Logic of Social Research**(25 hrs.)

- 1.1 What is Sociological Research?
- 1.2 Objectivity in the Social Sciences
- 1.3 Reflexivity

**2. Methodological Perspectives**(25 hrs.)

- 2.1 The Comparative Method
- 2.2 The Ethnographic Method

**3. Modes of Enquiry**(25 hrs.)

- 3.1 Theory and Research
- 3.2 Analysing Data: Quantitative and Qualitative

**Reading Reference**

1. Doing Social Research: T L Baker, 3<sup>rd</sup> Edition, Mcgraw-hill Book Company, 1999
2. Fundamentals of Social Statistics: Kirk W. Elifson, Richard P. Runyon, & Audrey Haber, McGraw-Hill Higher Education, 1998
3. Methods in Social Research: William Josiah Goode & Paul K. Hatt, McGraw-Hill, 1952
4. Methods of Social Research: K D Bailey, 4<sup>th</sup> Edition, Simon and Schuster, 1994
5. Scientific Social Surveys and Research: P.V. Young, PHI-Learning, New Delhi
6. The Practice of Social Research: Earl Babbie, 12th Edition, Wadsworth Publishing Company/ Cengage Learning, 2010
7. The Practice of Social Research: Guided Activities: Earl R. Babbie& Theodore C. Wagaenaar, Cengage Learning, 2006

## **SKILL ENHANCEMENT COURSES**

### **Semester III**

#### **Skill Enhancement Course 01**

**(SOCSSSEC01M)**

#### **Theory and Practice of Development**

#### **Outline:**

#### **1. What is development? (10 hrs.)**

#### **2. Recent trends in Development (20 hrs.)**

##### **2.1 Neo-liberalism: Growth as Development**

##### **2.1a. Re-emergence of Neo-classical perspective**

##### **2.1b. SAP and its Critique**

#### **2.2 Post development Theory (20 hrs.)**

##### **2.2a. Knowledge as Power**

##### **2.2b. Participatory Development**

##### **2.2c. GAD**

#### **2.3 Sustainable Development Theory: UN Earth Charter 1992 (25 hrs.)**

##### **2.3a. Hegemonic approach: PPP**

##### **2.3b. Environmental discourse**

#### **3. Human Development Theory: Growth vs. Development (10 hrs.)**

#### **Reading References**

- 1) Colclough, Christopher, and James Manor, eds. States or Markets? Neo-liberalism and the development policy debate. Oxford University Press, 1993.
- 2) Dreze, Jean, and Amartya Sen. "India: Economic development and social opportunity." OUP (1999).
- 3) Dreze, Jean, and Amartya Sen. India: Development and participation. Oxford University Press, USA, 2002.

- 4) Eade, Deborah, and Suzanne Williams. The Oxfam handbook of development and relief. Vol. 2. Oxfam, 1995.
- 5) Escobar, A. 2011. (paperback ed.) Encountering development: The making and unmaking of the Third World Princeton: Princeton Press
- 6) Ferguson, Iain. Reclaiming social work: Challenging neo-liberalism and promoting social justice. Sage, 2007.
- 7) Friere, Paulo. 1972. Pedagogy of the Oppressed. New York: Herder & Herder
- 8) Kirkpatrick, Colin H., Ron Clarke, and Charles Polidano, eds. Handbook on development policy and management. Edward Elgar Publishing, 2002.
- 9) MacEwan, Arthur. Neo-liberalism or democracy? economic strategy, markets, and alternatives for the 21st century. Zed Books, 1999.
- 10) Nussbaum, Martha, and Amartya Sen, eds. The quality of life. Oxford University Press, 1993.
- 11) Sachs, Wolfgang. 2007. The Development Dictionary: A guide to Knowledge as Power. London: Zed Books
- 12) Schultz, T. Paul, and John Strauss, eds. Handbook of development economics. Vol. 4. Elsevier, 2008.
- 13) Sen, Amartya. Resources, values, and development. Harvard University Press, 1997.

**Skill Enhancement Course 02**  
**Semester IV**  
**(SOCSEEC02M)**  
**Gender Sensitization**

**Outline:**

**1. Sex, Gender and Sexuality (20 hrs.)**

- 1.1 Introduction to debates on the social construction of sex and gender
- 1.2 Cultural construction of masculinity and femininity
- 1.3 Understanding sexual preference as a right

**2. Gender, Family, Community and the State (10 hrs.)**

**3. Gender Rights and the Law (20 hrs.)**

- 3.1 Women's Rights in Indian Constitution: Fundamental rights and Directive Principles
- 3.2 Right to property
- 3.3 Personal laws
- 3.4 Violence against women
- 3.5 Sexual harassment
- 3.6 Rape
- 3.7 Domestic violence

**4. Women's Rights as Human Rights: U.N. Conventions, Convention on the Elimination of all forms of Discrimination against Women (CEDAW), Millennium Development Goals (MDGs) (25 hrs.)**

**Reading References**

1. Altekar, A.S. 1983, The Position of Women in Hindu Civilization. Delhi, Motilal Banarasi Das, Second Edition: P Fifth Reprint.
2. Bhasin, Kamala. 1993. What is Patriarchy? New Delhi: Kali for Women.
3. Bilton, Tony et al. 1996. Introductory Sociology. New York: Palgrave.
4. Box, Steven. Power, Crime, and Mystification. London: Routledge, 1989



5. Butalia, Urvashi. *The Other Side of Silence*. Durham, NC: Duke University Press, 2000
6. Buzawa, Eva Schlesinger, and Carl G. Buzawa. *Domestic violence: The criminal justice response*. Sage, 2003.
7. Chanana, Karuna, 1988, *Socialization, Women and Education, Explorations in Gender Identity*, New Delhi
8. Chappell, Duncan, and Vittorio Di Martino. *Violence at work*. ILO, 2006.
9. Desai, Neera and M. Krishnaraj, 1987, *Women and Society in India*, Delhi, Ajanta
10. Fernandes, Leela.(ed). 2014. *Routledge Handbook of Gender in South Asia*. London:Routledge
11. Forbes, G. 1998, *Women in Modern India*, New Delhi, Cambridge University press
12. Furr, L. Allen. 2018. *Women, Violence and Social Stigma*. Jaipur: Rawat Publications.
13. Gandhi, N. And N. Shah, 1992, *The issues at Stake, Theory and Practice in the Contemporary Women's Movement in India*, New Delhi, Kali for Women.
14. Gangoli, Geetanjali. *Indian feminisms: Law, patriarchies and violence in India*. Routledge, 2016.
15. Ghadially, Rehana (ed), 1988, *Women in India Society*, New Delhi, Sage
16. Ghadially, Rehana, ed. *Urban women in contemporary India: a reader*. Sage, 2007.
17. Hatty, Suzanne E. *Masculinities, violence and culture*. Sage Publications, 2000.
18. Jackson, Stevi and Sue Scott (eds.) 2002. *Gender: A Sociological Reader*. London: Routledge.
19. Jayawardene, Kumari, 1991, *Feminism and Nationalism in the third World*, New Delhi, Kali For Women

20. Kalaramadam, S. 2016. Gender, Governance and Empowerment in India. London: Routledge
21. Kalia, H.L. 2005. Work and the Family. Jaipur: Rawat Publications.
22. Kimmel, Michael S. The Gendered Society. New York: Oxford University Press, 2011.
23. Kolaskar, A and Dash, Motilal (ed) .2012. Women and Society: The Road to Change. New Delhi: OUP
24. Lorber, Judith and Susan A. Farrell (eds.). 1991. The Social Construction of Gender. Newbury Park, Calif: Sage Publications.
25. MacKinnon, Catharine A. Only Words. Cambridge, Mass.: Harvard University Press, 1993
26. Mangubhai, Jayshree P., and Joel G. Lee. Dalit women speak out: Caste, class and gender violence in India. Zubaan, 2012.
27. Menon, Nivedita (ed.).1999. Gender and Politics in India. New Delhi: Oxford University Press.
28. Mies Maria ,1980, Indian Women and Patriarchy, Conflicts and Dilemmas of Students and Working Women, New Delhi, Concept
29. Oakley, Ann, 1972, Sex, Gender and Society, New York, Harper and Row
30. Rege, Sharmila. (ed). 2003. Sociology of Gender: The Challenge of Feminist Sociological Knowledge. New Delhi: Sage.
31. Rosaldo, M. Z. and L. Lamphere (eds.). 1974. Woman, Culture and Society. Stanford: Stanford University Press.
32. Sarkar, Siuli. 2016. Gender Disparity in India: Unheard Whimpers. Delhi: PHI Learning.
33. Smith, Bonnie, G. 2013. Women's Studies: The Basics. London: Routledge
34. Tong, Rosemarie. 2009. Feminist Thought. Westview Press.

35. UNDP Human Development Report 2000. OUP, New Delhi, 2000
36. Agnes, Flavia et al. Women and Law in India. New Delhi: OUP, 2004
37. Sahai, Shailly. Social Legislation and Status of Hindu Women. Jaipur: Rawat, 1986
38. Singh, Alka. Women in Muslim Personal Law. Jaipur: Rawat, 1991
39. Omvedt, Gail. Violence Against Women: New Movements and New Theories in India. New Delhi: 1990.

## Topic related to sustainability:

Zoology Hons. Paper: CC-II

### Unit 5: Applied Ecology

5 classes

Wildlife Conservation (in-situ and ex-situ conservation).

Management strategies for tiger conservation; Wild life protection act (1972)

Zoology Hons. Paper: DSE 06

### ZOONADSE06T (Theory, 4 Credits = 60 classes): Wildlife and Conservation

#### Unit 1: Introduction to Wild Life

5

Values of wild life; Importance of conservation;  
Causes of depletion of Wildlife in India;

#### Unit 2: Evaluation and management of wild life

12

Forest habitats: major forest types of India and West Bengal  
Forest covers estimation: remote sensing and GIS

#### Unit 3: Management of habitats

8

Management of Successional wild habitats

Forest fire

Restoration of degraded wild habitats

(The above topics should be learnt mostly in reference to the protected areas in West Bengal)

#### Unit 4: Population estimation

10

Population and population density estimations: different methods in practice

Sex Ratio computation and Fertility status

#### Unit 5: Wildlife conservation practices in India

5

Traditional Conservation ethics and practices in India

Conservation strategies and Practices: Wildlife Acts (IUCN, WPA of India, CITES etc)

#### Unit 6: Management planning of wild life in protected areas

5

Estimation of carrying capacity; Eco tourism / wild life tourism in forests;

Concept of climax persistence; Ecology of perturbation.

#### Unit 7: Man and Wildlife

5

Causes and consequences of human-wildlife conflicts;

Mitigation of conflict – an overview;

Wildlife/Ecotourism advantages and disadvantages

#### Unit 8: Protected areas

10

Major wildlife areas in India (all from West Bengal): Sanctuaries, National Parks, Tiger and other Wildlife Reserves, Biosphere reserves, etc.

Community reserve: concepts and examples

Management challenges in Tiger reserve

**Topic related to pollution:**

Zoology GE, Paper 04

<b>ZOOHGEC04T, Environment and Public Health</b>	
<b>Theory (Credits 4)</b>	<b>Class</b>
<b>Unit 1: Introduction</b>	
Sources of Environmental hazards, Hazard identification and accounting, Fate of toxic and persistent substances in the environment, Dose response evaluation, Exposure assessment	10
<b>Unit 2: Climate Change</b>	
Greenhouse gases and global warming, Acid rain, Ozone layer destruction, Effect of climate change on public health	10
<b>Unit 3: Pollution</b>	
Air, water, noise pollution sources and effects, Pollution control	5
<b>Unit 4: Waste Management Technologies</b>	
Sources of waste, types and characteristics, Sewage disposal and its management, Solid waste disposal, Biomedical waste handling and disposal, Nuclear waste handling and disposal, Waste from thermal power plants.	15
<b>Unit 5: Diseases</b>	
Causes, symptoms and control of tuberculosis, Asthma, Cholera, Minamata disease, typhoid, filariasis	10
<b>Suggested Readings [Consult Latest Editions]</b>	
1. Cutter, S.L., Environmental Risk and Hazards, Prentice-Hall of India Pvt. Ltd., New Delhi, 1999.	
2. Kolluru Rao, Bartell Steven, Pitblado R and Stricoff "Risk Assessment and Management Handbook", McGraw Hill Inc., New York, 1996.	
3. Kofi Asante Duah "Risk Assessment in Environmental management", John Wiley and sons, Singapore, 1998.	
4. Kasperson, J.X. and Kasperson, R.E. and Kasperson, R.E., Global Environmental Risks, V. N. University Press, New York, 2003.	
5. Joseph F Louvar and B Diane Louver Health and Environmental Risk Analysis fundamentals with applications, Prentice Hall, New Jersey 1997.	
<b>ZOOHGEC03P: Environment and Public Health Lab (Credits 2)</b>	
1. To determine pH, Cl, SO <sub>4</sub> , NO <sub>3</sub> in soil and water samples from different locations.	