



Establishment
27/11/1928

SNJB (Jain Gurukul's)

**K.K.H. Abad Arts, S.M.G. Lodha Commerce & S.P.H. Jain Science College
Neminagar, Chandwad-423101, Dist.-Nashik, Maharashtra**

(Affiliated to Savitribai Phule Pune University) Id. No.PU/NS/AC/015/1970

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DST-FIST Funded (2018-19)

UGC-NSQF Courses (B.Voc. & CC)

Best College Award by Savitribai Phule Pune University (2015-16)

1.3.1: Institution integrates cross- cutting issues relevant to Gender, Environment and Sustainability, Human Values and Professional Ethics into the Curriculum.

List and syllabi of courses which integrates cross-cutting issues

Sr.No.	Programme Name	Course Name	Page No.
1.	MA-Part-I (English)	Literary Criticism	03
2.	MA-Part-II (English)	World Literature in English	04
3.	MA-I Geography	Principles of population and Settlements Geography	05
4.	MA-I Geography	Population Geography	07
5.	F.Y.B.A.	Introduction to Indian Constitution	09
6.	S.Y.B.A.	An introduction to the political Ideologies	11
7.	S.Y.B.A.	Western Political thought	13
8.	T.Y.B.A. (Politics)	Political Ideologies	15
9.	M.A. -I (Politics)	Political Institutions in India	17
10.	M.A. -I (Politics)	Political thought in modern Maharashtra	18
11.	M.A.- I (History)	Social background of Dalit Movement in Maharashtra	19
12.	S.Y.B.A . (History)	History of Marathas (1630-1707)	20
13.	F.Y.B.A. (English)	Compulsory English	22
14.	S.Y.B.A. (Geography)	Environmental Geography –I & Environmental Geography –II	25

15.	M.Sc.-II (Physics)	Energy Studies-I & Energy Studies-II	29
16.	S.Y.B. Sc.	Taxonomy of Angiosperms and Plant Ecology	36
17.	T.Y. B.Sc. (Botany)	Plant Ecology	37
18.	M.Sc. (Botany –II)	Plant Ecology	38
19.	M.Sc. (Botany –II)	Advanced Plant Ecology	40
20.	F.Y.B.Sc.	Animal Ecology	44
21.	T.Y.B.Sc. (Zoology)	Environmental Impact Assessment	47
22.	S.Y.B.A./S.Y.B.Com./S.Y.B.Sc.	Environmental Studies	49
23.	T.Y.B.Sc. (Chemistry)	Environmental and Green Chemistry	53
24.	F.Y.B.A. (English)	Optional English	56
25.	S.Y.B.A. (English)	Compulsory English	57
26.	MA-Part-II (English)	World Literature in English	59
27.	F.Y.B.A.	An introduction to Indian Constitution	60
28.	S.Y.B.A.	An introduction to the political Ideologies	62
29.	S.Y.B.A.	Western Political thought	64
30.	S.Y.B.A.	Basic of Indian Constitution	66
31.	T.Y.B.A . (Politics)	Political Ideologies	68
32.	T.Y.B.A . (Politics)	International Politics	70
33.	M.A. -I (Politics)	Political Institutions in India	72
34.	M.A. –I (Politics)	Theory of International Politics	73
35.	M.A. -I (Politics)	Political thought in modern Maharashtra	74
36.	M.A. –II (Politics)	World Politics-New development	75
37.	S.Y.B.A. History	Glimpses of Modern World –Part II	76
38.	All PG Programs	Human Rights	80
39.	All PG programs	Cyber Security and Cyber Crimes	83

ii) Cleanth Brooks- The Language of Paradox

Paper – 2.4: Literary Criticism and Theory

Semester-II

Unit-I: Structuralism and Poststructuralism

- i) Tzvetan Todorov- Structural Analysis of Narrative
- ii) Michel Foucault- What is an Author?

Unit-II: Psychoanalysis and Reader Response Criticism

- i) Lionel Trilling- Freud and Literature
- ii) Wolfgang Iser- Interaction between Text and Reader

Unit-III: Marxist Criticism and Cultural Studies

- i) Terry Eagleton- Marxism and Literary Criticism (Chapters 1&2)
- ii) Stuart Hall- Cultural Studies and Its Theoretical Legacies
- iii) Susan Sontag: Against Interpretation (the title essay)

Unit-IV: Feminist Criticism and Postcolonialism

- i) Simone de Beauvoir: Woman's Situation and Character, Chapter 6 (from The Second Sex)

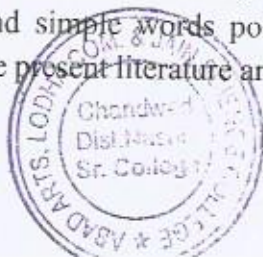
ii) Postcolonialism (Chapter no. 10 from Literary Criticism: An Introduction to Theory and Practice by Charles E. Bressler, 5th Edition, Pearson, 2011)

** (Vincent B. Leitch (General Editor). The Norton's Anthology of Theory & Criticism, W. W. Norton & Company, New York, 2001)

*Gender issues
Human values*

4) SUGGESTIONS FOR TEACHERS

Though not thoroughly representative, the course content strives to cover the mammoth range of major critical approaches from the ancient to the poststructural period. Given the vast range and profundity of literary theory, it is advisable that teachers introduce the characteristics and basics of all major approaches along with brief summary of the contexts that necessitated their emergence and made them relevant. The explanation of the broad differences between the traditional and the modern criticism and between criticism and theory can greatly help students know views in larger perspectives. The critical terms generally used as the critical short hands need to be introduced in clear and simple words possible. It is important to explain the relevance of these approaches to the present literature and language study and this can be done



Nadine Gordimer- *My Son's Story*

Unit-IV: Biography

15 clock hours

Anne Frank- *The Diary of a Young Girl*

Human Values

Paper-4.8: World Literature in English

Semester-IV

Unit-I: Drama

15 clock hours

Bertolt Brecht, *The Good Woman of Setzuan*

Gender issues

Unit-II: Poetry

15 clock hours

Bian Zhilin, "Long is"

Dennis Brutus, "A Common Hate Enriched Our Love and Us"

Gabriel Okara , i) "You Laughed and Laughed and Laughed", ii) "The Mystic Drum"

NgugiwaThiongo, "The Dawn of Darkness"

ParveenShakir, "A Special Laborer of Steel Mills"

Unit-III: Fiction

15 clock hours

V. S. Naipaul 'A House for MrBiswas'

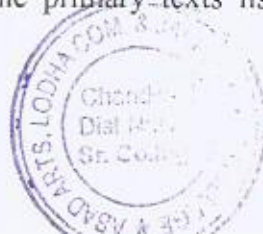
Unit-IV: Autobiography

15 clock hours

Maxine Hong Kingston, *The Woman Warrior: Memoirs of a Girlhood Among Ghosts*

Suggestions for teachers:

Teachers are expected to briefly discuss the literary background, movements, important writers and their works while teaching each of the texts listed in the course. There will be a separate question on the socio-cultural and literary background of the period during which the texts were written. The questions may include the cultural and literary influences on the author, the authors' distinct contribution to the literary world, the social background of a region as it is reflected in a particular work, etc. These topics for questions are suggested as examples only; teachers may discuss other relevant topics as well. Needless to say, every teacher should briefly introduce their class to the socio-political, historical and literary conditions that prevailed in each of the countries to which the writers belonged. The dominant literary tendencies and trends, the stylistic features of the authors prescribed for study, the major thematic concerns in the texts, etc. are also issues that can be discussed. Students are expected to read all the primary-texts listed in the paper. Teachers should



- Saptarshi, P.G., More, J.C. Ugale, V.R. and Musmade, A.H. (2009): India A Geographical Analysis Diamond, Pune.
- Saxena, H.M. (2013): Economic Geography, Rawat publication, Jaipur.
- Siddhartha, K. (2000): Economic Geography: Theories, Process and Patterns, Kisalaya Publications, New Delhi
- Smith, D.M. (1971): Industrial Location: An Economic Geographical Analysis, John Wiley and Sons, New York
- Pagar, Thorat & More (2015): Agriculture Geography; (Marathi), Atharv Publication, Pune
- More J. (2014): Geography & Agriculture For MPSC Examination, (Marathi), Atharv Publication, Pune

Semester I

Course: GGDT-114 :Principles of Population and Settlements Geography

No. of Credits: 04 No. of Periods: 60

Topic No.	Topic	Sub topics	No. of Periods
1	Introduction to Population and Settlement Geography	i. Definition, Nature and scope of Population Geography ii. Development of Population Geography as discipline iii. Approaches to the study of population Geography iv. Definition, subject matter and scope of Settlement Geography v. Development of Settlement Geography vi. Approaches: genetic, spatial and ecological	08
2	Population Distribution	i. Population distribution and factors affecting distribution of population ii. Density : definition and types iii. Factors affecting density of population iv. Population density in India v. Urbanization: definition and stages vi. Trend and level of urbanization in India	08
3	Population Growth and trend	i. Concept of population growth ii. Component of population growth (Fertility, Mortality, and Migration) iii. Theory of Demographic Transition iv. Malthus Theory v. Population growth and trend in India vi. Migration: concept of migrant and migration, immigration and emigration	08



4	Population Structure and Characteristics	i. Age and sex structure ii. Concept of aging of populations, iii. Dependency ratio iv. Sex Ratio: definition and affecting factors of sex ratio v. Sex ration in India vi. Population Composition: religious, linguistics, ethnic, marital and educational vii. Literacy: definition and measures of literacy viii. Literacy in India	06
5	Fertility and Mortality	i. Concepts: fertility, fecundity, sterility, cohort ii. Crude birth rate, Total fertility rate iii. Concept of baby boom iv. Concepts: mortality and morbidity v. Death rate and its measures vi. Level and trends of mortality in India	06
6	Human Settlement	i. Classification: urban and rural ii. Rural-urban dichotomy iii. Site and situation aspect in settlement iv. Types: compact, semi-compact, hamleted and dispersed v. Patterns of settlement	08
7	Rural Settlements	i. Definition, classification of villages ii. Size and spacing of villages iii. Nearest neighbor analysis iv. Concepts of dispersion and nucleation v. Factors affecting dispersion and nucleation	08
8	Urban Settlements	i. Concept: urban place, urban agglomeration, urban sprawl ii. Urban settlement hierarchy iii. Urban-rural fringe iv. Rank-size rule v. Central Business District (CBD)	08

Reference Books:

- **Bhende, A. and Kanitkar, T. (2011):** Principles of Population Studies, Himalaya Publishing House, Bombay.
- **Beaujeu, G. J. (1966):** Geography of Population, Longman Group Ltd.
- **Chandna, R.C. (Rep.2010):** Geography of Population, Concepts, Determinants and Patterns, Kalyani Publishers, New Delhi.
- **Clark, J. I. (1973):** Population Geography, Pergamon Press Ltd., Oxford.
- **Clark, J.I. (1984):** Geography and Population: Approaches and Applications, Pergamon Press Ltd., Oxford.
- **Hudson, (1970):** Geography of Settlement, Macdonald & Evans Ltd., London.
- **Khullar, D. R. (2011):** India A Comprehensive Geography, Kalyani Publication, New Delhi.
- **Michel Chisholm (1973):** Studies in Human Geography, London.
- **Mishra, R.S.(1975):** Economics of Growth and Development, Somaiya Publication Pvt. Ltd.



- **Patil S. G., Suryawanshi R. S., Pacharne S. and Choudhar A. H. (2014):** Economic Geography, AtharavPrakashan, Pune.
- **Pagar S. D., More J. C. & Thorat A. M. (2015):** Agricultural Geography, Atharva Publication, Pune.
- **Randhawa, M.S. (1980):** An History of Agriculture in India Vols. I, II, III, IV, ICAR, New Delhi.
- **Saptarshi P.G., More J.C., Ugale V.R., Musmade A.H. (2009):** India A Geographical Analysis, Diamond, Pune.
- **Sauer, C.O. (1969):** Agricultural Origins and Dispersals. M.I.T. Press, Mass, U.S.A.
- **Singh, J. and Dhillon, S.S. (1988):** Agricultural Geography, 2nd edition, Tata McGraw-Hill, New Delhi.
- **Singh, J. and Dhillon, S.S. (1994):** Agricultural Geography, Tata McGraw Hill, Publishing Co.
- **Symons, Leslie (1970):** Agricultural Geography, G. Belt and Sons Ltd., London.
- **Tarrent, J.R. (1970):** Agricultural Geography, David and Charles, Newton Abbot.
- **Wigley, G. (1981):** Tropical Agriculture: The Development of Production, 4th edition, Arnold, London

Semester II

Course: Gg. 213: Population Geography

No. of Credits: 04 No. of Periods: 60

Topic No.	Topic	Sub topics	No. of Periods
1.	Introduction	i. Definitions, nature and scope of Population Geography ii. Sources of population data: census, national sample survey, sample registration survey, NFHS, DLHS data	08
2.	Population Dynamics	i. Population distribution in the world ii. Density of population in the world iii. Determinates of population growth	06
3.	Population Theory	i. Malthus Theory ii. Optimum Population Theory iii. Demographic Transition Model	08
4.	Fertility	i. Concepts and measures of Nuptiality and fertility ii. Levels and trends of fertility in India iii. Determinants of fertility iv. Theories of fertility	08
5.	Mortality	i. Concept of mortality & morbidity ii. Measures of mortality iii. Recent mortality levels in world iv. Mortality trends in India	08
6.	Migration	i. Definition, types (Internal and International) ii. Concept: refugee, brain-drain migration iii. Determinants and consequences of migration.	06



		iv. Lee's Theory of Migration	
		v. Ravenstein's laws of migration	
		vi. Push-pull factors of migration	
7	Population Composition	Population Composition:	
		i. Demographic	08
		ii. Social	
		iii. Economic	
		iv. Cultural	
8	Population Development and Policies	Concept of Population Index:	
		i. Human Development Index (HDI)	08
		ii. Gender Development Index (GDI)	
		iii. Relation between population and development	
		iv. Population policy of India	
		v. New Population policy of China	

Reference Books:

- Agarwala, S.N. (1977): India's population Problems, Tata McGraw Hill publishing Co. Ltd. , New Delhi.
- Bose Ashis et.al. (1974): Population in India's Development Vikas Publishing House, New Delhi, 1974.
- Chaudna R.C. (1986) :Geography of Population concepts, Determinants and Patterns, Kalyani Publishers, New Delhi
- Clarke J.I : Population Geography, Pergamon Press, Oxford, 1973.
- Clarke J.I. (Ed)(1984):Geography and Population, Approaches and Applications, Pergamon Press, Oxford
- Crook Nigel :Principles of Population and Development, Pergamon Press New York, 1997.
- Garnier B.J. (1970) :Geography of Population, Longman, London
- Pathak, K.B. and F.Ram, (1992) : Techniques of Demographic analysis. Bombay: Himalaya Publishing house
- Sundaram K.V. and Sudesh Nangia (Ed) (1986): Population Geography, Heritage Publications, Delhi
- U N D P (2002) : Human Development Report, Oxford, 2002.
- Woods R. (1970) : Population Analysis in Geography, Longman, London
- Zelinsky Wilbur (1966) : A Prologue to Population Geography Prentice Hall
- Musmade Arjun, Sonawane Amit and Jyotiram More, (2015): Population & Settlement Geography (Marathi) -Diamond Publication Pune.



Savitribai Phule Pune University
F. Y. B. A. Political Science
(CBCS pattern to be implemented from 2019-2020)
G-1 General Paper
INTRODUCTION TO INDIAN CONSTITUTION
Total Credits : 03

Objectives

The contents of this course are designed with the following objectives:

1. To acquaint students with the important features of the Constitution of India and with the basic framework of Indian government.
2. To familiarize students with the working of the Constitution of India.

Semester-I	Period
Unit 1: Making of the Indian Constitution	12
a) Historical Background	
b) Constituent Assembly	
c) Preamble	
d) Salient Features	
Unit 2: Fundamental Rights, Duties and Directive Principles	12
a) Fundamental Rights	
b) Fundamental Duties	
c) Directive Principles of State Policy	
Unit 3: Federalism	12
a) Salient Features of Indian Federalism	
b) Centre –State Relations	
c) Issues of Conflict (Water and Border Issues)	
Unit 4: Constitutional Amendments: Scope and Limitations	12
a) Constitutional Provisions	
b) Major Constitutional Amendments (42, 44 & 86)	
c) Basic Structure of the Indian Constitution	
Semester- II	
Unit 5: Legislature	12
a) Union Legislature – Structure, Powers and Role	
b) State Legislature – Structure, Powers and Role	
Unit 6: Executive	12
a) Union Executive – i) President and Vice President– Powers, Functions and Role	
ii) Prime Minister - Powers, Functions and Role	
iii) Council of Minister – Powers and Functions and Role	
b) State Executive- i) Governor - Powers, Functions and Role	
ii) Chief Minister – Powers, Functions and Role	
iii) Council of Minister – Powers and Functions and Role	



Unit7: Judiciary

12

- a) Supreme Court : Powers and Functions
- b) High Court : Powers and Functions
- c) Judicial Review and Judicial Activism

Unit8: Electoral System

12

- a) Election Commission:Composition, Functions and Role
- b) Chief Election Commissioner
- c) Electoral reforms

References:

- 1) Austin Granville, 1999, *The Indian Constitution: Cornerstone of a Nation*. Oxford, Oxford University Press.
- 2) Austin Granville, 2003, *Working a Democratic Constitution: The Indian Experience*, Delhi, Oxford University Press.
- 3) आवटे श्रीरज्ज्वर राही श्रुती गणेश, 2019, *आपलं आयकार्ड*, पुणे, द युनिक अँकॅडमी पब्लिकेशन.
- 4) Basu D.D., 2018, *Introduction to the Constitution of India*, New York, LexisNexis.
- 5) Brass Paul., 1994, *The Politics of Indian Since Independence*, Cambridge, Cambridge University Press.
- 6) बाचल वि. म., 2004, *भारतीय राज्यघटना आणि राजकीय व्यवहार*, पुणे, के सागर पब्लिकेशन.
- 7) भोळे भा.ल., 2015, *भारतीय गणराज्याचे शासन आणि राजकारण*, नागपूर, पिंपळापुरे प्रकाशन.
- 8) चपळगावकर नरेंद्र, 2002, *राज्यघटनेचे अर्धशतक*, मुंबई, मौज प्रकाशन.
- 9) जाधव तुकारामशिरापुरकर महेश, 2012, *भारतीय राज्यघटना व घटनात्मक प्रक्रिया*, पुणे, द युनिक अँकॅडमी पब्लिकेशन.
- 10) पांजरेकरचिं. ग . 1997, *भारतीयराज्यघटना*, नागपूर, मंगेश प्रकाशन.
- 11) Jha Rajesh, 2012, *Fundamentals of Indian Political System*. Delhi, Dorling Kindersley (India) Pvt Ltd, Pearson Education Society.
- 12) कांबळे बाळ, वकील अलिम वदेवरे पी. डी., 2012, *भारताची राज्यघटना, राजकारण व कायदा*, पुणे, डायमंड प्रकाशन.
- 13) कश्यप सुभाष. (अनुवाद न. ब. पाटील), 2001, *आपली संसद*, नॅशनल बुक ट्रस्ट इंडिया.
- 14) नांदेडकर च. गो., 2011, *भारतीय राज्यघटना आणि राज्यव्यवहार*, पुणे, डायमंड प्रकाशन.
- 15) पाटील बी.बी., 2016, *भारतीय शासन आणि राजकारण*, कोल्हापूर, फडके प्रकाशन.
- 16) साठे सत्यरंजन, 1998, *भारताच्या राज्यघटनेची ५० वर्षे*, पुणे, कॉन्टिनेन्टल प्रकाशन.
- 17) व्होरा राजेंद्र व पळशीकर सुहास, 2010, *भारतीय लोकशाही: अर्थ आणि व्यवहार*, पुणे, डायमंड प्रकाशन.



Savitribai Phule Pune University, Pune
S. Y. B. A. Political Science
(CBCS pattern to be implemented from 2020-2021)
Core Course (C.C.)
AN INTRODUCTION TO POLITICAL IDEOLOGIES

Objectives:

This course is designed to acquaint students with the –

1. Role of different political ideologies and their impact in politics
2. Close link between an idea and its actual realization in public policy
3. Legacy of all the major ideologies

SEMESTER III CC-1 C (3)	PERIOD
Unit 1: Ideology	12
a) Origin, Meaning, Definition	
b) Nature	
c) Scope	
Unit 2: Nationalism	11
a) Meaning, Definitions and Elements	
b) Progressive and Reactionary	
c) Internationalism	
Unit 3: Democratic Socialism	11
a) Meaning and Nature	
b) Features	
c) Achievements and Limitations	
Unit 4: Fascism	11
a) Principles	
b) Factors responsible for the rise of Fascism	
c) Evaluation	
SEMESTER IV CC-1 D (3)	
Unit 5: Marxism	12
a) Historical Materialism	
b) Marxian State	
c) Neo Marxism	



Unit 6: Phule-Ambekarism	11
a) Equality	
b) Cast & Religion	
c) Democracy	
Unit 7: Gandhism	11
a) Truth and Non-Violence	
b) Theory of Gram Swaraj	
c) Satyagraha	
Unit 8: Feminism	11
a) Meaning and Nature	
b) Liberal Feminism	
c) Feminism in India : Caste and Patriarchy	

Readings:

1. D. Bell, 1960, *The End of Ideology*, New York, The Free Press.
2. देवरे सुरेश, २०२०, राजकीय विचार प्रणाली, (Semester 3, e-Book), Amazon Asia Pacific Hoardings Pvt. Ltd.
3. देवरे सुरेश, २०२०, राजकीय विचार प्रणाली, (Semester 4, e-Book), Amazon Asia Pacific Hoardings Pvt. Ltd.
4. E. Gellner, 1983, *Nations and Nationalism*, Oxford, Blackwell.
5. मायकबाड संजय, २०१९, मार्क्स अंबेडकर परिप्रेक्ष्यातून शिक्षण आणि रोजगार, पुणे, शब्दसंग प्रकाशन.
6. J. Bondurant, 1965, *Conquest of Violence: the Gandhian Philosophy of Conflict*, Berkeley, University of California Press.
7. L. P. Baradat, 1989, *Political Ideologies: Their Origins and Impact*, Englewood Cliffs NJ, Prentice Hall.
8. P. Gay, 1952, *The Dilemma of Democratic Socialism: Eduard Bernstein's challenge to Marx*, New York, Columbia University Press.
9. R. M. Christenson, et al., 1971, *Ideologies and Modern Politics*, London, Thomas Nelson and Sons.
10. R. N. Berki, 1975, *Socialism*, London, John Dent and Sons.
11. R. N. Iyer, 1973, *The Moral and Political Thought of Mahatma Gandhi*, New York, Oxford University Press.
12. Sayyad Yasinbhai Gulabbhai, 2018, *Modern Political Theory*, Kanpur, International Publication.
13. Sir I. Berlin, 1981, "Nationalism: Past Neglect and Present Power" in H. Hardy (ed.) *Against the Current*, Oxford, Oxford University Press.
14. मनपुरे संभाजी आणि शुभकार हनुमंत, २०१७, राजकीय विचार प्रणाली, औरंगाबाद, चिन्मय प्रकाशन.
15. The Liberal Tradition in China, 1983, *Hong Kong and New York*, Chinese University, Hong Kong Press.



Savitribai Phule Pune University, Pune
S. Y. B. A. Political Science
(CBCS pattern to be implemented from 2020-2021)
DISCIPLINE SPECIFIC ELECTIVE COURSE
WESTERN POLITICAL THOUGHT

Objectives:

This course is designed to acquaint students with the –

1. Major traditions of thought that have shaped political discourse in different parts of the world.
2. The great diversity of social contexts and philosophical visions.
3. The history of political thought as a series of critical, interconnected and open-ended conversations about the ends and means of the good life.

	SEMESTER III DSE-1A (3)	PERIOD
Unit 1: Plato		12
a) Ideal State		
b) View on Education		
c) Theory of Justice		
Unit 2: Aristotle		11
a) Classification of the State		
b) Views on Slavery		
c) Theory of Revolution		
Unit 3: Machiavelli		11
a) Human Nature		
b) Attitude towards Religion and Morality		
c) Views on State		
Unit 4: Locke		11
a) State of Nature		
b) Natural Rights		
c) Theory of Social Contract		
	SEMESTER IV DSE-1B (3)	
Unit 5: Rousseau		12
a) State of Nature		
b) General Will		
c) Theory of Social Contract		



Unit 6: Hegel	11
a) Idealism	
b) Theory of State	
c) Views on Freedom	
Unit 7: J. S. Mill	11
a) Views on Liberty	
b) Representative Government	
c) Views on Utilitarianism	
Unit 8: Karl Marx	11
a) Historical Materialism	
b) Class Struggle	
c) Theory of State and Revolution	

Readings:

1. Adams Ian and R.W.Dyson, 2004, *Fifty Great Political Thinkers*, London, Rutledge.
2. भोळे भास्कर, १९९५, *पाश्चिमात्य राजकीय विचारवंत*, नागपुर, पिंपळापुरे.
3. Deo Vijay, SharadGosavi&SanjyotApte, 2011, *Western Political Thought*, Pune, Diamond Publication.
4. देवरेसुरेश, २०२०, *पाश्चिमात्यराजकीयविचार(सेमेस्टर-३, ईपुस्तक)*, अमेझॉनएशिया-पॅसिफिक होल्डिंग्स प्रायव्हेट लिमिटेड.
5. देवरेसुरेश, २०२०, *पाश्चिमात्यराजकीयविचार(सेमेस्टर-४, ईपुस्तक)*, अमेझॉनएशिया-पॅसिफिक होल्डिंग्स प्रायव्हेट लिमिटेड.
6. गार्डे डी. के., १९७७, *पाश्चिमात्य राजकीय विचार*, पुणे, राणे प्रकाशन.
7. Mehta V. R. 1996, *Foundation of Indian Political Thought*, New Delhi, Manohar
8. Nelson Brian, 2004, *Western Political Thought*, Pearson Education
9. Nelson Brian R. 2006, *Western Political Thought*, Second Edition, New Delhi, Pearson Education.
10. Parekh Bhiku and Thomas Pantham, 1987, *Political Discourse; Exploration in Indian and Western Political Thought*, New Delhi, Sage.
11. Sabine G.H. 1971, *A History of Political Theory*, Calcutta, Oxford & I.B.H.
12. साकळकर ई. आणि जैन अशोक, १९९०, *पाश्चिमात्यराजकीयविचार*, पुणे, मेठ प्रकाशन.
13. W.T. (series editor), 1959, *Masters of Political Thought*, (Vols. 2 and 3), London, George Harap & Co.



SYLLABUS FOR TYBA POLITICAL SCIENCE (G-3)

POLITICAL IDEALOGIES

Course Rationale:

This paper studies the role of different political ideologies and their impact in politics. Each ideology is critically studied in its historical context. In course of its evolution and development, the different streams and subtle nuances within each ideology, the changes and continuities in its doctrine and its relevance to contemporary times are highlighted. The close link between an idea and its actual realization in public policy needs to be explained as well. The philosophical basis of the ideologies is emphasized with special emphasis on key thinkers and their theoretical formulations. The legacy of all the major ideologies is to be critically assessed.

SECTION-I**UNIT-I: - Ideology** 08

- a) Origin, Meaning, Definition
- b) Nature and Scope

UNIT-II: - Nationalism 14

- a) Meaning, Definitions and Elements
- b) Progressive and Reactionary
- c) Internationalism

UNIT-III: - Democratic Socialism 14

- a) Meaning, Nature and Features
- b) Achievements and Limitations
- c) Types : Fabianism, Syndicalism, Guild Socialism

UNIT-IV: - Fascism 12

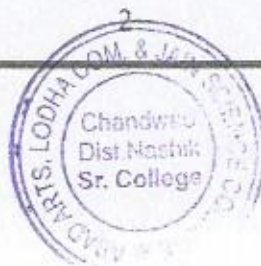
- a) Factors responsible for the rise of Fascism
- b) Principles
- c) Corporate State

SECTION-II**UNIT-V: - Marxism** 12

- a) Historical Materialism
- b) Theory of Surplus Value
- c) Marxian State

UNIT-VI: - Phule-Ambekarism 12

- a) Equality
- b) Religion
- c) Democracy



UNIT-VII: - Gandhism

12

- a) Truth and Non-Violence
- b) Theory of Satyagraha
- c) Gram Swaraj

UNIT-VIII: - Feminism

12

- a) Meaning and Nature
- b) Liberal Feminism
- c) Feminism in India : Caste, Patriarchy, Women's Representation

Readings:

- L. P. Baradat, Political Ideologies: Their Origins and Impact, Englewood Cliffs NJ, Prentice Hall, 1989.
- , The Liberal Tradition in China, Hong Kong and New York, Chinese University of Hong Kong Press, 1983.
- D. Bell, The End of Ideology, New York, The Free Press, 1960.
- R. N. Berki, Socialism, London, John Dent and Sons, 1975.
- Sir I. Berlin, "Nationalism: Past Neglect and Present Power" in H. Hardy (ed.) Against the Current, Oxford, Oxford University Press, 1981.
- J. Bondurant, Conquest of Violence: the Gandhian Philosophy of Conflict, Berkeley, University of California Press, 1965.
- R. M. Christenson, et al., Ideologies and Modern Politics, London, Thomas Nelson and Sons, 1971.
- P. Gay, The Dilemma of Democratic Socialism: Eduard Bernstein's challenge to Marx, New York, Columbia University Press, 1952.
- E. Gellner, Nations and Nationalism, Oxford, Blackwell, 1983. Political Science 76 J. Gray, Liberalism, Minneapolis, University of Minnesota Press, 1986.
- J. Gray, Liberalisms: Essays in Political Philosophy, London, Routledge, 1989.
- D. Ingersoll and R.K. Mathews, The Philosophic Roots of Modern Ideologies: Liberalism, Communism and Fascism, Englewood Cliffs NJ, Prentice Hall, 1991.
- R. N. Iyer, The Moral and Political Thought of Mahatma Gandhi, New York, Oxford University Press, 1973.
- M. Kitchen, Fascism, London, Dent, 1979.
- D. J. Manning, Liberalism, London, John Dent and Sons, 1976.
- H. C. Mansfield, The Spirit of Liberalism, Cambridge, Harvard University Press. Political Science 77
- D. McLellan, Marxism after Marx, London, Macmillan, 1975.
- , On Nationality, Oxford, The Clarendon Press, 1995.
- Dr. Lodhi Kaniz Fatma Niyaz Ahmed, Modern Political Ideologies, Success Publication, Pune, 2015.
- Dr. Benke Suvarna, Political Theory (Marathi), Peasant Publication, Jalgaon, 2014.
- Dr. Chavan Shankar, Modern Political Ideology (Marathi), Pratima Prakashan, Pune.
- Dr. Devare P.D., & Dr. D.S. Nikumbh, Modern Political Ideologies (Marathi), Prashant Publication, Jalgaon, 2008.
- Dr. Date Sunil & Dr. Dhobale Ramesh, Political Ideologies (Marathi), Vidya Book Publishers, Aurangabad, 2009.
- Dr. Rathi Shubhangi, Modern Political Ideologies (Marathi), Atharva Publication, Jalgaon, 2014.
- Kulkarni A.N., Modern Political Ideologies, Vidya Prakashan Nagpur, 2014

OR



PO-C3: Political Institutions in India**Objectives:**

The course introduces the student to the leading institutions of India's political system and to the changing nature of these institutions. Apart from explaining the structure and functions of the main institutions the course will try to acquaint students with the idea of institutional balance of power as discussed in the Indian constitution and as developed during the functioning of Indian democracy over the past seven decades.

- 1. Nationalist legacies**
 - a. Unity and Integrity
 - b. Democracy
 - c. Development and Social Transformation
- 2. Federal institutions**
 - a. Strong Centre' framework
 - b. Autonomy and devolution
 - c. Multilevel federalism
- 3. Executive**
 - a. President and prime minister
 - b. Principle of collective responsibility and accountability to the legislature
 - c. Role of governor
- 4. Legislature**
 - a. Composition and powers
 - b. Norms of representation
 - c. Legislative supremacy
- 5. Judiciary**
 - a. Composition
 - b. Judicial review and judicial activism
 - c. Judicial interpretations of Fundamental Rights and Directive Principles, basic structure doctrine
- 6. Welfare, Regulation and Security**
 - a. UIDAI
 - b. TRAI
 - c. AFSPA

Readings:

1. Austin Granville, 1972, *The Indian Constitution: Cornerstone of a Nation*, New Delhi, Oxford University Press.



PO-08- Political Thought in Modern Maharashtra**Objectives:**

The course is an introduction to the political thinking in Modern Maharashtra since the late 19th century. It tries to acquaint students with the main issues and concerns in the public life of a regional society as it shaped in the context of colonialism, nationalism and modernity. The course is woven around thematic issues rather than around individual thinkers in order to help students understand the essentially collective and yet diverse nature of political thought.

1. **Mahatma Phule**
 - a. Views on Equality
 - b. Analysis of Caste System and Critique of Brahminism
 - c. Sarvajanik Satya Dharma
2. **Lokmanya Bal Gangadhar Tilak**
 - a. Cultural Nationalism
 - b. Doctrine of Chatusutri i.e. Swadeshi, National Education, Boycott and Swaraj
 - c. Views on Ends and Means
3. **Dr. Babasaheb Ambedkar**
 - a. Nation and Nationalism
 - b. Constitution of India
 - c. Dalit Rights Movement
4. **Vinayak Damoder Savarkar**
 - a. Hindu Nationalism
 - b. Views on Social Reform
 - c. Views on Militarization
5. **Maharshi Vitthal Ramji Shinde**
 - a. Views on Untouchability
 - b. Views regarding Bahujan Politics
 - c. Views on Social Reforms
6. **Vinoba Bhave**
 - a. Satyagrah
 - b. Sarvodaya
 - c. Bhoodan Movement



Semester 2: Elective Course No. 2

Credits.4

Course Title: HS: EC-2: Social Background of Dalit Movement in Maharashtra

Objectives:

This paper is designed to emphasise the background of the Dalit movement which flourished in the twentieth century. It highlights the earlier forms of protest from the ancient till the medieval period, which laid the foundations for social protest and dissent in the pre- Ambedkar period.

Course Content

1. Historical Development of caste system
2. Defining the term 'Dalit' and 'Dalit consciousness'
3. Historical Background of Protest
 - i. Early Manifestations- Lokayat, Buddhism, Jainism
 - ii. Medieval Manifestations- Janabai, Chokhamela, Soyarabai, Karmamela, Banka and Bahinabai
4. Non-Dalit Contribution to the Dalit Movement
 - i. Mahatma Phule, Savitribai Phule, Vitthal Ramji Shinde
 - ii. Sayaji Maharaj, Rajarshi Shahu Maharaj
5. Pre-Ambedkar reformers and protest
 - i. Gopal Baba Walangkar
 - ii. Mukta Salve
 - iii. Shivaram Janba Kamble
 - iv. Kisan Faguji Bansode

4

Select Readings:

English:

1. Ambedkar B. R., 'Castes in India', Dr. Babasaheb Ambedkar Writings and Speeches, Vol. I, Govt. of Maharashtra, Mumbai, 1987.
2. Ambedkar B. R., 'Who were the Shudras', Dr. Babasaheb Ambedkar Writings and Speeches, Vol. VII, Govt. of Maharashtra, Mumbai, 1987.
3. Ambedkar B. R., 'Revolution and Counter Revolution in Ancient India', Dr. Babasaheb Ambedkar Writings and Speeches, Vol. III, Govt. of Maharashtra, Mumbai, 1987.
4. Ambedkar B. R., 'The Untouchables', Dr. Babasaheb Ambedkar Writings and Speeches, Vol. VII, Govt. of Maharashtra, Mumbai, 1987.



Savitribai Phule Pune University, Pune

Proposed Syllabus in History for S.Y.B.A. (Credit System) from the academic Year 2020-21

Under the Faculty of Humanities

Core Course-I (CC- 1C)- 3 Credit

Semester -III-History of the Marathas: (1630-1707)

Learning Objectives:

1. To introduce the students to the regional history of medieval Maharashtra and India.
2. To study political, social and conceptual history of the Marathas in an analytical way with the help of primary sources.
3. To evaluate contribution of Chhatrapati Shivaji Maharaj to the establishment of Swarajya, contribution of successors and later development of the Maratha kingdom.
4. To study administrative Institutions of the Maratha.

Learning Outcome:

1. Student will develop the ability to analyse sources for Maratha History.
2. Student will learn significance of regional history and political foundation of the region.
3. It will enhance their perception of 17th century Maharashtra and India in context of Maratha history.
4. Appreciate the skills of leadership and the administrative system of the Marathas.

Pedagogy: Lectures/Visual presentation/ Role play/ Critical analysis/Assignments/Tests/Quiz/ e-learning

Unit-I: Sources and Rise of the Maratha Power

10

- a) Literary Sources: Marathi and Foreign Sources (Portuguese, English, French)
- b) Background of the rise of Maratha Power
- c) Shahaji Raje, Rajmata Jijabai and Early Life of Chhatrapati Shivaji Maharaj

Gender

Unit-II: Foundation of Swarajya to the Coronation, Karnataka Expedition

15

- a) Relations with Adilshahi: Javali and Afzal Khan episode and its importance
- b) Relations with Mughals: Campaign of Shayasta Khan, Sack of Surat, expedition of Jaisingh, Visit to Agra
- c) Coronation and Karnataka Expedition

Unit-III: Administration under Chhatrapati Shivaji Maharaj

08

- a) Military
- b) Civil



राजि
(रा. रंजीव पवार)

- a) Chhatrapati Sambhaji Maharaj: Consolidation of power, Relations with Mughals.
- b) Chhatrapati Rajaram Maharaj, Maharani Tarabai and Mughals
- c) Santaji Ghorpade, Dhanaji Jadhav and Ramchandrapant Amatya

Reference Books: English

1. Apte B.K., A History of the Maratha Navy and Merchant Ships, State Board for Literature and Culture, Bombay, 1973.
2. Apte B. K., ed. Chatrapati: Shivaji's Coronation Tercentenary Commemoration. Bombay: University of Bombay, 1974-75.
3. Bakshi, S. R. & Sharma, Sri Kant, The Great Marathas – 5, Marathas: The Administrative System, Deep & Deep Publications Pvt. Ltd., New Delhi, 2000.
6. Chitnis, K.N., Glimpses of Medieval Indian Ideas & Institutions, 2nd edition, Mrs. R K Chitnis, Pune, 1981.
7. Chitnis, K. N., Glimpses of Maratha Socio- Economic History, Atlantic Publishers & Distributors, New Delhi, 1994.
4. Choksey, R.D., Economic Life in Bombay Deccan, Asia Publishing House, Mumbai, 1955.
5. Deshmukh, R.G., History of Marathas, Nimesh Agencies, Bombay, 1993.
8. Duff, James Grant, History of Mahrattas, Vol. I and Vol. II, R. Cambay & Co., Calcutta, 1912.
9. Fukazawa, Hiroshi, The Medieval Deccan – Peasants, Social Systems and States – Sixteenth to Eighteenth Centuries, Oxford University Press, New Delhi, 1991
10. Gordon, Stewart, The New Cambridge History of India, The Marathas, Cambridge University Press, New Delhi, 1998.
11. Gune, Vithal Trimbak, The Judicial System of the Marathas, Deccan College, Pune, 1953
12. Kulkarni, A. R., Maharashtra in the Age of Shivaji, Deshmukh & Co., Poona, 1969.
13. Kulkarni, A. R., Maharashtra: Society and Culture, Books and Books, New Delhi, 2000.
14. Kumar, Raj (ed.), Maratha Military Systems, Commonwealth Publishers, New Delhi, 2004.
15. Mahajan, T. T., Aspects of Agrarian and Urban History of The Marathas, Commonwealth Publishers, New Delhi, 1991.
16. Nadkarni, R.V., The Rise and Fall of the Maratha Empire, Popular Prakashan, Poona, 1966
17. Pagadi Setu Madhavrao, Chhatrapati Shivaji, Continental Prakashan, Pune, 1974
18. Ranade, M.G., Rise of the Maratha Power, University of Bombay, 1961.
19. Sardesai, G.S., The Main Currents of Maratha History, Phoenix Publications, Bombay, 1959.
20. Sardesai, G.S., The New History of the Marathas, Vol I: Shivaji and his Times, Phoenix Publications, Bombay, 1971
21. Sarkar, Jadunath, Shivaji and His Times, 6th edition, Sarkar & sons, 1973.
22. Sarkar, Jadunath, House of Shivaji, Orient Longman, Bombay, 1978.
23. Sen, Surendranath, Administrative System of the Marathas, K.P. Bagchi & Company, Calcutta, 1923.
24. Sen, Surendranath, The Military System of the Marathas, Orient Longmans, Calcutta, 1958.
25. Sen, Surendranath, Administrative System of the Marathas, K.P. Bagchi & Company, Calcutta, 1923.



F. Y. B. A Compulsory English
(w. e. f. 2019-2020)
(Choice Based Credit System)
70:30-Pattern
(70-Semester-End Exam & 30-Internal Evaluation)

Prescribed Text: *Literary Gleam: An Anthology of Prose and Poetry* (Board of Editors-Orient BlackSwan)

Objectives:

- a) To expose students to the best examples of prose and poetry in English so that they realize the beauty and communicative power of English
- b) To instill human values and develop the character of students as responsible citizens of the world
- c) To develop the ability to appreciate ideas and think critically
- d) To enhance employability of the students by developing their linguistic competence and communicative skills
- e) To revise and reinforce structures already learnt in the previous stages of learning.

Semester-I

Prose:

1. Engine Trouble — R. K. Narayan
2. On Saying 'Please' — A. G. Gardiner
3. The Gift of the Magi — O. Henry

Poetry:

1. A Red, Red Rose — Robert Burns
2. Leave this Chanting and Singing — Rabindranath Tagore
3. The Felling of a Banyan Tree — Dilip Chitre

Grammar:

1. Articles
2. Prepositions
3. Verbs
Regular and Irregular Verbs
Auxiliary Verbs: Primary and Modal
4. Punctuation

Communication Skills:

1. Greeting and Taking Leave

Environmental
Sustainability



S.Y.B.A. Geography (S1) Syllabus for Semester III
Name of Subject: Population Geography, Subject Code: Gg.220 (A)

Objectives:

1. To understand the history of population.
2. To introduction of the basic concepts in Population Geography.
3. To understand the types of Population data.

Sr. No.	Topic	Sub Topics	Teaching Hours	Total Credits
1	Introduction	1. Definition, Nature and Scope, 2. Contextual significance of Population Geography, 3. Relation between Population Geography and other social Sciences.	12	03
2	Population Data & Presentation	1. Census of India 2. National Sample Survey, Sample Registration Survey, NFHS, DLHS, 3. Presentation of Population Data – Maps, Graphical Presentation, Computer Application	12	
3	Population Growth and Demographic Attributes	1. Factors affecting Growth of Population 2. Fertility, Mortality - (Concept, Measurement) 3. Migration - Concept, Causes, Types	12	
4	Composition of Population	1. Age-Sex pyramid, Age Structure 2. Occupational Structure, Dependency Ratio 3. Longevity, Life Expectancy. (with Reference to India)	12	

Reference Books:

1. Barrett H. R., 1995, Population Geography, Oliver and Boyd Publication,
2. Bhende A. and Kanitkar T., 2000, Principles of Population Studies, Himalaya Publishing House.
3. Chandna R. C. and Sidhu M. S., 1980, An Introduction to Population Geography, Kalyani Publishers.
4. Clarke J. I., 1965, Population Geography, Pergamon Press, Oxford.
5. Jones, H. R., 2000, Population Geography, 3rd ed., Paul Chapman, London.
6. Lutz W., Warren C. S. and Scherbov S., 2004, The End of the World Population Growth in the 21st Century, Earth scan
7. New bold K. B., 2009, Population Geography Tools and Issues, Rowman and Littlefield Publishers.
8. Pacione M., 1986, Population Geography-Progress and Prospect, Taylor and Francis.
9. Wilson M. G. A., 1968, Population Geography, Nelson Publishers.
10. Panda B P , 1988, Population Geography, Granth Academy, Bhopal (Hindi)
11. Maurya S D, 2009, Population Geography, Sharda Putak Bhawan, Allahabad (Hindi)
12. Chandna, R C, 2006, Population Geography, Kalyani Publishers, Delhi. (Hindi)
13. Sawant, Athavale, Musmade, Population Geography, Mchta Pubication, Pune. (Marathi)
14. More J. C., 2014, Geography & Agriculture For MPSC Examination, Atharv Publication, Pune (Marathi)
15. Musmade A.H., Sonawane A.E., More J.C., 2015, Population & Settlement Geography, Diamond Publication Pune. (Marathi)



S.Y.B.A. Geography (S1), Syllabus for Semester IV**Name of Subject: Population Geography, Subject Code: Gg.220 (B)****Objectives:**

1. To introduce students to the Population Policy of India and China.
2. To understand the Health indicator in India.
3. To acquaint students with the concept of urbanization in population geography.
4. To understand population theories.

Sr. No.	Topic	Sub Topics	Teaching Hours	Total Credits
1	Concept and theories of Population	1. Population and space: over Population, Optimum Population, Under Population 2. Malthusian Theory 3. Marxian Theory	12	03
2	Problems of Population and Population Polices	1. Population Problems in India. 2. Population Problems in developed countries 3. Population Policies in India and China	12	
3	Population as a Resources Contemporary Issues	1. Health Indicator in India 2. Population as Social Capital 3. Human Development Index.	12	
4	Urbanization	1. Concept of urbanization 2. History of urbanization in India, Trends of World urbanization. 3. Problems of Urbanization in India	12	

Reference Books:

1. Barrett H. R., 1995, Population Geography, Oliver and Boyd Publication,
2. Bhende A. and Kanitkar T., 2000, Principles of Population Studies, Himalaya Publishing

Savitribai Phule Pune University

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S. Y. B. A. GEOGRAPHY**Equivalence of Previous syllabus along with new syllabus:**

Pager	Old Course (2013 Annual Pattern)	New Course (2019 Semester Pattern)
G2	Gg-210 Elements of Climatology and Oceanography OR	Gg: 210(A)Environmental Geography I OR
G2	Gg-210 Geography of Disaster Management	Gg: 210(A)Economic Geography -I Gg: 210(B)Environmental Geography II OR Gg: 210(B)Economic Geography -II
S1	Gg-220 Economic Geography OR	Gg: 220(A)Geography of Maharashtra - I OR
S1	Gg-220 Tourism Geography	Gg: 220(A) Population Geography – I Gg: 220(B) Geography of Maharashtra – II OR Gg: 220(B) Population Geography – II
S2	Gg-201 Fundamentals of Geographical Analysis	Gg: 201(A)Practical Geography – I (Scale and Map Projections)
S2		Gg: 201(B)Practical Geography – II (Cartographic Techniques, Surveying and Excursion / Village / Project Report)

S.Y.B.A. Geography (G2) Syllabus for Semester III**Name of Subject: Environment Geography- I, Subject Code: Gg.210 (A)****Objectives:**

1. To create the awareness about dynamic environment among the student.
2. To acquaint the students with fundamental concepts of environment geography for development in different areas.
3. The students should be able to integrate various factors of Environment and dynamic aspect of Environmental geography.
4. To make aware the students about the problems of environment , their utilization and conservation in the view of sustainable development

Sr. No.	Topic	Sub Topics	Teaching Hours	Total Credits
1	Introduction to Environmental Geography	1. Definition, Nature and scope of Environmental Geography. 2. Types of Environment 3. Importance of Environmental Geography 4. Approaches to study of environmental Geography	12	03
2	Ecosystem	1. Meaning, concept and definition of ecosystem. 2. Structure (Biotic and Abiotic factors) and food chain, Tropic Level, food web, energy flow	12	



CBSE: 2020-21		S.Y.B.A.	Geography	
		3. Types of ecosystem a) Equatorial Forest and b) Pond Ecosystem		
3	Biodiversity and its conservation	1. Concept of biodiversity 2. Economic value and potential of biodiversity 3. Loss of biodiversity and hotspots in India 4. Conservation of biodiversity	12	
4	Environmental Pollution	1. Concept of Pollution 2. Air pollution-Causes, effects and control measures 3. Water pollution-Causes, effects and control measures 4. Soil pollution-Causes, effects and control measures	12	

Reference Book:

1. Miller G.T., 2004, Environmental Science Working with the Earth, Thomson Books Cole, Singapore
2. Saxena H.M., 2017, Environmental Geography(Ed III), Rawat Publications, Jaipur
3. Odum E.P. et al.2005, Fundamentals of Ecology, Ceneage Learning, India
4. Sharma P.D.2015, Ecology and Environment, Rastogi Publications, Meerut
5. Kormondy, Edward J, 2012, Concept of Ecology, PHI Learning Pvt.Ltd, New Delhi
6. Singh R.B.(Eds) 2009, Biogeography and Biodiversity, Rawat Publications, Jaipur
7. Singh S, Prayag, 1997, Environment Geography, Pustak Bhawan, Allahabad
8. Chandana R.C.2002, Environmental Geography, Kalyani Publication, Ludhiana
9. Goudie A, 2001, The Nature of The Environment, Blackwell ,Oxford
10. Gholap T. N., 2000, Environment Science, Nishikant Publications, Pune. (Marathi)
11. Choudhar A.H., & et. al., 2014, Disaster Management, Atharva Publication, Pune. (Marathi)
12. Musmade A. H., More J. C. 2014, Geography of Disaster Management, Diamond Publication, Pune. (Marathi)
13. Saptarshi P. G., More J. C., Ugale V. R., 2009, Geography and Natural Hazards, Diamond Publishing, Pune. (Marathi)



S.Y.B.A. Geography (G2) Syllabus for Semester IV**Name of Subject: Environment Geography- II, Subject Code: Gg.210 (B)****Objectives:**

1. To create awareness about dynamic environment among the students.
2. To acquaint students with the fundamental concepts of Environment Geography.
3. To acquaint students about the past, presents and future utility and potentials of natural resources.
4. To make aware students about the problems of environment, its utilization and conservation in the view of sustainable development.

Sr. No.	Topic	Sub Topics	Teaching Hours	Total Credits
1	Environmental Disaster	1. Meaning and concepts of environmental disaster 2. Classification of Disaster 3. Natural Disaster a) Earthquake b) Flood 4. Biological Disaster a) Swine flu b) Novel Corona (COVID-19)	12	03
2	Environmental Problems	1. Global Warming and climate change 2. Ozone Depletion 3. Acid rain 4. Over use of chemical fertilizers, pesticides and insecticides	12	
3	Environmental Planning and Management	1. Need of Planning and Management 2. Micro, macro and meso level Planning and Management with reference to India 3. Environmental impact assessment	12	
4	Environmental Policies	1. Introduction of environmental policies 2. Environmental education in India 3. Kyoto Protocol	12	



Proposed Structure of M.Sc. (Physics) Syllabus (C.B.C.S.)

1) Title of the Course: M.Sc. Physics

2) Preamble:

The curriculum for the M. Sc. (Physics) programme is designed to cater to the requirement of Choice Based Credit System following the University Grants Commission (UGC) guidelines. In the proposed structure, due consideration is given to Core and Elective Courses (Discipline specific - Physics), along with Ability Enhancement (Compulsory and Skill based) Courses. Furthermore, continuous assessment is an integral part of the CBCS, which will facilitate systematic and thorough learning towards better understanding of the subject. The systematic and planned curricula divided into two years (comprised of four semesters) shall motivate the student for pursuing higher studies in Physics and inculcate enough skills for becoming an entrepreneur.

Objectives:

- To foster scientific attitude, provide in-depth knowledge of scientific and technological concepts of Physics.
- To enrich knowledge through problem solving, minor/major projects, seminars, tutorials, review of research articles/papers, participation in scientific events, study visits, etc.
- To familiarize with recent scientific and technological developments.
- To create foundation for research and development in Physics.
- To help students to learn various experimental and computational tools thereby developing analytical abilities to address real world problems.
- To train students in skills related to research, education, industry, and market.
- To help students to build-up a progressive and successful career in Physics.

3) Introduction: Semester Credit System

4) Eligibility: B.Sc. in Physics



6) Structure of the Course:

Structure of M.Sc. Physics (Choice Based Credit System) (Revised)

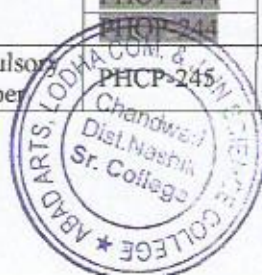
Programme to be implemented from Academic Year 2020-21

Subject Name	Year	Semester	Course Type	Course Code	Course Name	Credit		
Physics	1	I	Core Compulsory Theory Paper (CCTP)	PHCT-111	Mathematical Methods in Physics	4		
				PHCT-112	Classical Mechanics	4		
				PHCT-113	Electronics	4		
			Choice Based Optional Paper (CBOP-I)	PHOT-114	Choose any one from Group I	Theory	4	
				PHOP-114		Practical	0	
			OR					
			Choice Based Optional Paper (CBOP-I)	PHOT-114	Choose any one from Group I	Theory	2	
						Practical	2	
		Core Compulsory Practical Paper (CCPP)	PHCP-115	Physics Lab-I	4			
		II	CCTP	PHCT-121	Electrodynamics	4		
				PHCT-122	Atoms and Molecules	4		
				PHCT-123	Quantum Mechanics	4		
			Choice Based Optional Paper (CBOP-II)	PHOT-114	Choose any one from Group I	Theory	4	
				PHOP-114		Practical	0	
			OR					
			Choice Based Optional Paper (CBOP-II)	PHOT-114	Choose any one from Group I	Theory	2	
	Practical					2		
	CCPP	PHCP-125	Physics Lab-II	4				
	2	III	CCTP	PHCT-231	Statistical Mechanics	4		
				PHCT-232	Solid State Physics	4		
				PHCT-233	Experimental Techniques in Physics - I	4		
			CBOP-III	PHOT-234	Special -I from Group II	Theory	4	
				PHOP-234		Practical	0	
			OR					
			CBOP-III	PHOT-234	Special -I from Group II	Theory	2	
			PHOP-234	Practical	2			
		CCPP	PHCP-235	Physics Laboratory - III	4			
		IV	Core Compulsory Theory Paper	PHCT-241	Nuclear Physics	4		
				PHCT-242	Experimental Techniques in Physics - II	4		
			CBOP-IV	PHOT-243	Choose any one from Group I	Theory	4	
				PHOP-243		Practical	0	
			OR					
CBOP-IV			PHOT-243	Choose any one from Group I	Theory	2		
			PHOP-243		Practical	2		
CBOP-V	PHOT-244		Special-II from Group II	Theory	4			
	PHOP-244	Practical		0				
OR								
CBOP-V	PHOT-244	Special-II from Group II	Theory	2				
PHOP-244	Practical	2						
Core Compulsory Practical Paper	PHCP-245	Project	4					

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Nomenclature and Name of the Courses in Group I and II

Group - I (Elective)

The Course Code will be treated as follows:

e.g. If conducted for SEM I PHOT-114 (A4) or PHOT-114 (A2) + PHOP-114 (A2)

If the same course will be conducted for SEM II PHOT-124 (A4) or PHOT-124 (A2) + PHOP-124 (A2) and so on.

A4 and A2 stands for 4 and 2 credits respectively.

The CBOP – I, II, IV can be chosen from the list below:

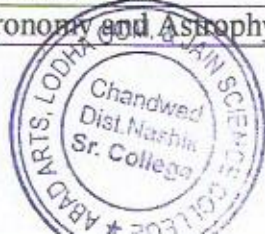
Course Code	Course Name
A	Physics of Thin Films
B	Physics of Nanomaterials
C	Lasers and Applications
D	Physics of Semiconductor Devices
E	Communication Electronics
F	Microwave Physics and Applications
G	Quantum Mechanics – II

Note: In order to offer more flexibility in selecting CBOP-I, II, IV (Group-I) and also considering expertise available at the institute/colleges, an elective paper may be given from the pool of CBOP-III (Group-II). However, if any subject from CBOP-III is given as an elective for Group-I, then such subject cannot be taken in Group-II so as to avoid repetition.

Group - II (Elective)

The CBOP -III, CBOP-V can be chosen from the list below

Subcode	Semester - 3 (CBOP-III) Special-I	Subcode	Semester - 4 (CBOP-V) Special-II
H	Energy Studies – I	H	Energy Studies – II
I	Electronics Instrumentation – I	I	Electronics Instrumentation – II
J	Biomedical Instrumentation – I	J	Biomedical Instrumentation – II
K	Nuclear Techniques – I	K	Nuclear Techniques – II
L	Microcontroller Based Instrumentation System – I	L	Microcontroller Based Instrumentation System – II
M	Material Science - I	M	Material Science - II
N	Medical Physics - I	N	Medical Physics - II
O	Acoustics – I	O	Acoustics – II
Q	Astronomy and Astrophysics - I	Q	Astronomy and Astrophysics - II



Group – II

(With 2 Credits)

Course Code and Title: PHOT (H2) Energy Studies-I

Module 1: Energy Sources

1 Credit

Non Renewable Energy sources: Coal, Oil, Natural gas, Nuclear power, Hydroelectricity, and their potentials, Renewable Energy sources: Solar, Wind, Biomass, Tidal, Ocean wave, Ocean thermal, Geothermal and their potentials, Importance of Solar Energy: Nature of solar radiation, Sun as a fusion reactor, spectral distribution of terrestrial and extra-terrestrial radiation Estimation of extra-terrestrial solar radiation, Radiation on horizontal and tilted surfaces. Nature of Solar radiations - beam, diffuse, global radiation and their measurement by Pyranometer, Pyrhelimeter, Sunshine recorder.

Ref. no. 8

Module 2: Basics of Heat Transfer and Energy Storage

1 credit

Heat and Thermodynamics: Basic units, dimensions, Concept of heat, 1st and 2nd law of thermodynamics, Types of heat transfer. Conductive heat transfer: Fourier's law. Stefans Boltzman relation and IR heat transfer between gray surfaces. Radiative heat transfer: sky radiation, radiation heat transfer coefficient Convective heat transfer: Natural and forced convection, natural convection between parallel plates, Non-dimensional numbers, conductive heat transfer coefficient, Heat transfer due to wind. Types of energy storage systems: sensible and latent heat storage systems, Electric energy storage systems, Chemical energy storage systems, Heat exchanges, Hydro storage, solar pond as an energy storage, Green house.

Ref.no. 11

Reference Books:

1. TEDDY Year Book, (Tata Energy Research Institute (TERI) Publication, New Delhi)
2. World Energy Resources, Charles E. Brown (Springer Publication) 2002
3. Energy Policy for India, B.V. Desai (Wiley Eastern Publication)
4. Handbooks of Solar Radiation, A. Mani (Allied Publishers), 1980
5. Solar Energy Fundamentals and Applications, H.P. Garg and Satya Prakash (Tata McGraw Hill), 1977.
6. Treatise on Solar energy, H.P. Garg, Volume 1, 2 and 3 (John Wiley and Sons) 1982
7. Principles of Solar Engineering, F. Kreith and J.F. Kreider, McGraw Hill, 1978
8. Solar Energy Thermal Processes, J.A. Duffie and W.A. Beckman, (John Wiley and Sons) 1980
9. Heat and Thermodynamics, M.W. Zemansky (McGraw Hill Publication)
10. Principles of Solar Energy Conversion, A.W. Culp (McGraw Hill Publication)
11. Solar Energy Principles of Thermal Collection and Storage, S.P. Sukhatme, 2nd Edition (Tata McGraw Hill Publication Co. Ltd.) 1976
12. Solar Energy Utilization, G.D. Rai (Khanna Publishers) 1996
13. Solar Thermal Engineering, J.A. Duffie(Academic Press)
14. Renewable Energy Sources and Conversion Technology, N.K. Basal, M. Kleeman and S.N. Srinivas (Tata Energy Reserch Institute, New Delhi) 1996

Course Code and Title: PHOP (H2) Energy Studies-I

List of Experiments (Any six)

(2 Credits)

1. Determination of Calorific value of Wood/Cow dung.
2. Study of Optical Properties of selective coatings.
3. Determine the I-V and P-V characteristics of PV module with varying intensity of solar radiation.
4. Study of power versus load characteristics of Solar Power Photovoltaic Systems.

5. Study of Series and Parallel Combination of Solar Photovoltaic panels.
6. Study of Solar Collector (Efficiency versus $\Delta T/I$).
7. Determine the I-V and P-V characteristics of series and parallel combination of PV modules.
8. Study the bomb calorimeter and estimate the calorific value of a given solid or liquid sample.
9. Visit to solar energy farm and visit report (Solar PV plant/Wind energy/ Thermal energy/ Hydroelectric/Co-generation plant) (equivalent two experiments)

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Module 1: Photothermal and Photovoltaic applications of Solar Energy **1 credit**

Introduction to selective coating and non-selective coating. Solar Thermal Devices and Systems: Different types of collectors Flat plate collector, Evacuated Tube Collector (Basic principle, construction, Energy balance equation of steady state, Methods to reduce heat losses) Solar cookers box type and Parabolic concentrator cooker, Domestic hot water system, Solar dryers, solar pond, Solar still, Solar refrigeration, Introduction to Solar concentrators (Brief description of each concentrator). Solar Photovoltaics (SPV) Conversion: Basic working principles of solar cell, Types of solar cells, Fabrication of solar cells, Typical IV characteristics of solar Modules.

Block diagram of general SPV conversion system and their characteristics, Different configurations. Applications: street light, water pumps, Radio/TV, Small capacity power generation SPV Systems Designing: Load estimation, selection of inverters, battery sizing, array sizing.

Module 2: Wind, Bio Energy and Hydrogen Energy **1 credit**

Wind Energy: Basic principle of wind energy conversion, Extraction of maximum power from wind and its dependence on various parameters. Wind Mills: Vertical axis wind mills and Horizontal axis wind mills (Performance, Merits and Demerits), Bio Energy: Biomass, Generation and utilization, Properties of biomass. Biogas: Generation of biogas, Aerobic and anaerobic bioconversion process, Digesters and their designs, Pyrolysis and gasification, Fermentation process. Hydrogen Fuel: Importance of Hydrogen as a future fuel, Sources of Hydrogen. Production of Hydrogen by various methods (Direct electrolysis of water, Direct thermal decomposition of water). Hydrogen storage: Gaseous, Cryogenic and Metal hydride.

Reference Books:

1. Climatological and Solar data for India, Seshadri. (Sarita Prakashan) 1969
2. Solar Energy Utilization, G.D.Rai, 9Khanna Publishers) 1995
3. Energy technology, S.Rao and B.B. Parulekar (Khanna Publishers) 1995
4. Terrestrial Solar Photovoltaics, Tapan Bhattacharya (Namsa: Publication House, New Delhi)
5. Solar Cells-operating Principles, technology and System Applications, Martin A. Green (Prentice Inc. USA).
6. Solar Thermal Engineering, J.A. Duffie (Academic Press)
7. Renewable Energy Sources and Conversion Technology, N.K. Bansal, M. Kleeman and S.N. Sreivas 9 Tata Energy Research Institute, New Delhi) 1996
8. Fundamentals of Solar Cells, F.A. Faherenbruch and R.H. Bube 9Academic Press).
9. Biomass Energy Systems, Venkata Ramala and S.N. Srinivas (Tata Energy Research Institute, New Delhi, New Delhi) 1996
10. Thin Film Solar Cells, K.L. Chopra and S.R.Das (Plenum Press) 1983
11. Solar Hydrogen Energy Systems, T. Ohta (Pergamon Press) 1979
12. Hydrogen Technology for Energy D.A. Maths (Noyes Data Corp.)1976
13. Handbook Batteries and Fuel Cell, Linden (McGraw Hill)1984
13. Wind energy Conversion Systems, L.L. Freris (Prentice Hall)1990
14. Solar Photovoltaics. - C.S. Solanki

Course Code and Title: PHOP (H2) Energy Studies-II

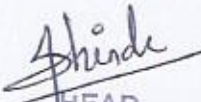
List of Experiments (Any six)

(2 Credits)

1. Determination of overall heat Loss Coefficient in Evacuated Tube Collector.
2. Determination of overall heat Loss Coefficient in Flat Plate Collector.
3. Study of Solar Dryer.



4. Study of Solar Still.
5. Performance Evaluation of Box Type solar cooker.
6. Study of Parabolic Type Solar Cooker.
7. Determination of Energy content in wind using anemometer.
8. Evaluate the performance of Fresnel lens solar concentrator.
9. Visit to solar energy farm and report (Wind energy/ Thermal energy/ Hydroelectric/ Co generation plant) (equivalent two experiments)

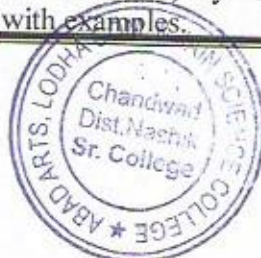

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**.Y.B.Sc. Botany CBCS Pattern
(Semester III, Paper I) 2020-2021**

BO 231: Taxonomy of Angiosperms and Plant Ecology - 2 Credits (30 Lectures)

Sr. No.	Topic Details	No. of Lectures
Credit-I		15
1.	Introduction to Angiosperms Taxonomy Definition, scope, objectives and importance of taxonomy Exploration, Description, Identification, Nomenclature and classification Concept of Systematics with brief historical background	02
2.	Systems of classification Comparative account of various systems of classification Artificial system- Carl Linnaeus Natural system- Bentham and Hooker Phylogenetic system- Engler and Prantl APG system- A brief review	05
3.	Study of Plant Families Study of following families with reference to systematic position (As per Bentham and Hooker's system of classification), salient features, floral formula, floral diagram and any five examples with their economic importance – Annonaceae, Brassicaceae, Myrtaceae, Rubiaceae, Solanaceae, Apocynaceae, Nyctaginaceae and Amaryllidaceae	08
Credit-II		15
4.	Botanical Nomenclature Concept of nomenclature, brief history, Binomial nomenclature International Code for Nomenclature of Algae, Fungi and Plants (ICN)- Principles, Rules and Recommendations; 'Type' specimen and its types (Holotype, Paratype, Isotype, Lectotype, Neotype). Concept of Typification. Ranks and endings of taxa names, Coining of Genus and Species names Single, double and multiple authority citations	05
5.	Introduction to ecology Definition, concept, scope, and interdisciplinary approach, autecology and synecology. Species diversity: definition, concept, scope, and types: Alpha, Beta and Gamma diversity. Methods of vegetation sampling: quadrat method, transect method, plot less method Genetic Diversity: definition, nature and origin of genetic variations Species Diversity: definition, origin of species diversity, diversity indices, species abundance Ecosystem Diversity: definition, major ecosystem types of the world, Hotspots in India – concept and basis of 'hotspot' identification.	06
6.	Ecological grouping of the plants Ecological grouping of the plants with reference to their significance of adaptive external and internal features: a) Hydrophytes, b) Mesophytes c) Xerophytes d) Halophytes with examples.	04



**T.Y.B.Sc. Botany CBCS Pattern
(Semester V, Paper IV) 2020-2021
BO 354: Plant Ecology - 2 Credits (30 Lectures)**

Sr. No.	Topic Details	No. of Lectures
Credit-I		15
1.	Introduction, interrelationship between the living world and the environment, levels of organization, components and dynamism of ecosystem, homeostasis, niche concept, concept of limiting factors	03
2.	Biogeography: Floristic realms, speciation and its types, biogeographic regions of India, Plant indicators	03

3.	Population ecology: Definition, characteristics, population growth form, r and k selection	03
4.	Community ecology: Introduction and Definition, community structure, physiognomy, Raunkiaer's life form classification, keystone species, edge and ecotone	04
5.	Biogeochemical cycles: The carbon cycle, Nitrogen cycle, Phosphorus cycle, and Hydrologic cycle	02
Credit-II		15
6.	Ecological Impact Assessment (EIA) Introduction, Historical Review of EIA, Objectives of EIA, Stages of EIA process: Screening; Scoping; Baseline study; Impact prediction and assessment; Mitigation; Producing Environmental Impact Statement (EIS); EIS review; Decision making; Monitoring, Compliance and Enforcement; Benefits of EIA.	05
7.	Environmental Audit Meaning and concept, need, objectives, benefits, types, audit protocol, process, certification, personnel environmental audit	04
8.	Remote Sensing Definition, basic principles, process of ecological data acquisition and interpretation, global positioning system, application of remote sensing in ecology.	04
9.	Ecological management: Concepts, sustainable development, sustainability indicators	2



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<https://www.botanicus.org/>
 INTERNET ARCHIVE- DIGITAL LIBRARY
<https://archive.org/>
 DATABASE OF PLANTS OF INDIAN SUBCONTINENT
<https://sites.google.com/site/efloraofindia/>
 BOTANICAL SURVEY OF INDIA
https://bsi.gov.in/content/1416_1_FloraofIndia.aspx
 FLOWERS OF INDIA
<http://www.flowersofindia.net/>
 eFLORAS OF WORLD
<http://www.efloras.org/>

Botany Theory paper -4
M.Sc. Botany Semester-III
BOUT 234: c) Plant Ecology
(2 Credits) (30 Lectures)

Topic Details	Lectures
Credit-I	
Introduction to science of ecology, definition, concept, and scope, interdisciplinary science, autecology and synecology, branches of ecology	2
Environmental factors controlling plant distributions: geology, topography, elevation, soils, light, temperature, precipitation, water and humidity, fire	3
Population Ecology: Characteristics of a population; population growth curves; population regulation; life history strategies (r and K selection); concept of meta-population – demes and dispersal, interdemec extinctions, age structured populations.	4
Species Interactions: Types of interactions, interspecific competition, herbivory, carnivory, pollination, symbiosis.	2
Community Ecology: definition, nature, composition and characteristics of community, structure/ stratification of community, levels of species diversity and its measurement; edges and ecotones, habitat, niche and guild	4
Credit-II	
Ecological succession: Types, mechanisms, changes involved in succession; concept of climax; relationship between ecosystem stability and diversity, ecological indicator plants	3



Ecosystems – concept, nature, structure and function; Structure and function of some Indian ecosystems: terrestrial (forest, grassland) and aquatic (fresh water, marine, eustarine).	3
Energy flow in ecosystem, food chain, food web, biogeochemical cycles (C,N,P), primary production and decomposition; ecological pyramids, homeostasis, concept of limiting factors	3
Biogeography: Major terrestrial biomes; theory of island biogeography; floristic regions and vegetation zones of Maharashtra, India, and world and its characters, principals of classification, key species of each region.	3
Applied Ecology: Environmental pollution; global environmental change; biodiversity: status, monitoring and documentation; major drivers of biodiversity change; biodiversity management approaches.	3

Suggested Readings:

- Ambast R.S. and N.K. Ambast (2017). A Textbook of Plant Ecology (15/E). CBS Publishers & Distributors-New Delhi.
- Ambast R.S., and N.K. Ambast (2003). Modern Trends in Applied Terrestrial Ecology. Springer
- Avery Thomas E. and Burkhardt Harold E. (2015). Forest Measurements. (5/E). McGraw-Hill.
- Barbier E.B., Burgess J.C. and Folke C. (1994). Paradise Lost? The Ecological Economics of Biodiversity; Earthscan, London
- Bhatnagar Aditya (2010). Ecology and Environment. Oxford Book Company
- Bowles M.L. and Whelan C.J (1996) ed. Restoration of Endangered Species Cambridge Univ. Press.
- Chapman, J.L. and Reiss, M.J. (1998). Ecology: Principles and applications. Cambridge University Press.
- Dash M.C. and S.P. Dash (2009). Fundamentals of Ecology (3/E). McGraw Hill Education (India) Private Limited
- Gadgil M. and Guha R (1992). This Fissured Land: An Ecological History of India. Oxford University Press, New Delhi
- Hajra P.K. and V. Mudgal (1997) Edt. Plant Diversity Hotspots in India - An Overview, BSI.
- Henderson Peter A., and T.R.E. Southwood (2016). Ecological Methods. (4/E). Wiley-Blackwell Publishers
- Heywood and Watson (1995), Edt. Global Biodiversity Assessment UNEP, Cambridge University Press.
- Hill David, Matthew Fasham, Graham Tucker, Michael Shewry and Philip Shaw (2004) Edt. Handbook of Biodiversity Methods – Survey, Evaluation and Monitoring; Cambridge



12. **Srivastava S. and Singhal V.** (1995). Laboratory Methods in Microbiology. Anmol Publication Pvt. Ltd. Delhi.

13. **Pal and Ghaskadabi** (2009). Fundamentals of Molecular Biology. Oxford Publishing Co.

M.Sc. II Botany Semester IV

BOUT 242: Theory Paper-2: Advanced Plant Ecology Semester-IV (4 Credits- 60 Hrs)

Topic Details	Lectures
Credit-I	
Levels of species diversity and its measurement, indices of α -diversity, species rarefaction; β -diversity similarity & dissimilarity indices.	2
Basis of Ecosystem classification. Types of Ecosystem: Desert (hot and cold), forest, rangeland, wetlands, lotic, lentic, estuarine (mangrove), Oceanic.	2
Aquatic Ecology: Freshwater and marine, ecology of estuaries and intertidal zones, mangroves	2
Ecosystem Stability: Concept (resistance and resilience), ecological perturbations (natural and anthropogenic) and their impact on plants and ecosystems	2
Biomes: Concept, basis of classification; Holdrige life zone classification; Characteristics of different biomes: Tundra, Taiga, Grassland, Deciduous forest biome, Alpine Biome, Chapparal, Savanna, Tropical Rain forest; adaptations in plants in various biomes	3
Agro-ecological zones of India: basis of classification and characteristics	2
Forest types of India (Champion and Seth, 1968): basis of classification and characteristics	2
Credit-II	
Methods in field ecology: Methods of estimating population density of plants, ranging patterns through direct, indirect and remote observations, sampling methods in the study of habitat characterization: ground and remote sensing methods.	3
Biodiversity and its conservation: Definition, types, importance of biodiversity and threats to biodiversity; Principles of conservation, major approaches to management; methods of conservation with examples; Indian case studies on conservation and management strategy (Sanctuaries/Sacred groves/National Parks/Botanical Gardens). Concept and basis of identification of 'Hotspots'; hotspots in India.	5



Concepts of gene pool, bio-piracy and bio-prospecting; Concept of restoration ecology; Extinct, Rare, Endangered and Threatened flora of India.	2
Environmental Biotechnology: Phytoremediation – definition, types and role of plants for in-situ and ex-situ remediation; bio-indicators, bio-fertilizers, biofuels and biosensors.	2
Environmental issues: Local, regional and global; air, water, and soil pollution - kinds, sources, quality parameters; climate change and its relationship with plants; Use of plants in mitigation of pollution, effect on plants and ecosystems	3
Credit-III	
Plant relations (eco-physiology) with climatic factors such as water, precipitation, temperature, light and radiation. Plant relations with edaphic factors: types of soil, soil moisture and water holding capacity of the soil, soil nutrients, soil microbes	4
Plant-plant interaction, concept of allelopathy; Plant-animal interaction, herbivory, carnivorous plants; Plant- microbes interaction: Mutualism, parasitism	3
Ecological/Environmental Ethics: Definition, concept, nature and origin of environmental ethics, ecological consciousness, views of developed and developing countries, environment community and equity, integrating ethical values and knowledge, self centered development and environment	4
Restoration ecology, plants in conservation of soils, restoration of land and degraded water bodies	2
Overview of Environmental Laws in India: Wildlife Protection Act, 1972; Forest Conservation Act, 1982 (revised); Biological Diversity Act, 2002; National Forest Policy, 1988; National Environmental Policy, 2006	2
Credit-IV	
Environmental Impact Assessment: Aims and objectives of Environmental Impact Assessment; concept, scope, process and necessity; Environmental Impact Statement (EIS) and Environmental Management Plan (EMP).	4
EIA Guidelines; Impact Assessment Methodologies.	1
Procedure for reviewing EIA of developmental projects. Life-cycle analysis, cost-benefit analysis. Guidelines for Environmental Audit. Environmental Planning as a part of EIA and Environmental Audit;	3
Human impact on ecosystem and its consequences- Agriculture societies, degradation of natural resources. Impact of fertilizers, pesticides, fungicides and weedicides on crops and plants	2
Bio-indicators of environmental degradation- Concept of Bio-indicators, bio indicators plants, role of bio-indicators in pollution control.	2



Concept of carrying capacity; ecological foot print; sustainability	1
Biomass carbon sequestration: above ground, belowground, deadwood, litter, soil organic carbon.	2

References:

- Ambasht R.S. and N.K. Ambasht (2017). A Textbook of Plant Ecology (15/E). CBS Publishers & Distributors-New Delhi.
- Ambasht R.S., and N.K. Ambasht (2003). Modern Trends in Applied Terrestrial Ecology. Springer
- Ashish Kothari (1997) Understanding Biodiversity- Life, sustainability and Equity; Orient Longman
- Avery Thomas E. and Burkhardt Harold E. (2015). Forest Measurements. (5/E). McGraw-Hill.
- Barbier E.B., Burgess J.C. and Folke C. (1994). Paradise Lost? The Ecological Economics of Biodiversity; Earthscan, London
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- Dara, S.S. and Rashmi Srivastava (2009). A Textbook of Energy, Environment Ethics and Society. S. Chand & Company, New Delhi.
- Dash M.C. and S.P. Dash (2009). Fundamentals of Ecology (3/E). McGraw Hill Education (India) Private Limited
- Deb, Swapan (2003). Environmental Management. Jaico Publ. House, Mumbai.
- Gadgil M. and Guha R (1992). This Fissured Land: An Ecological History of India. Oxford University Press, New Delhi
- Global Biodiversity: Status of the Worlds Living Resources (1992); WCMC; Chapman and Hall, London
- Hajra P.K. and V. Mudgal (1997) Edt. Plant Diversity Hotspots in India - An Overview, BSI.
- Handbook of the Convention on Biological Diversity (2001), Secretariat of the Convention on Biological Diversity. Earthscan publ., London
- Henderson Peter A., and T.R.E. Southwood (2016). Ecological Methods. (4/E). Wiley-Blackwell Publishers
- Heywood and Watson (1995), (Edt.). Global Biodiversity Assessment UNEP, Cambridge University Press.
- Hill David, Matthew Fasham, Graham Tucker, Michael Shewry and Philip Shaw (2004) (Edt.) Handbook of Biodiversity Methods – Survey, Evaluation and Monitoring. Cambridge
- Jeffries Michael J. (2005). Biodiversity and Conservation, Routledge, London



- Kent Martin (2011). *Vegetation Description and Data Analysis: A Practical Approach* (2E). Wiley-Blackwell.
- Kormondy Edward (1995). *Concepts of Ecology*. Pearson Publ.
- Krebs Charles J. (1999). *Ecological Methodology* (2/E). Pearson Education.
- Krishnamurthy K.V. (2003). *An Advanced Textbook on Biodiversity-Principles and Practice*, Oxford and IBH Publ. New Delhi
- Krishnmoorthy, Bala (2005). *Environmental Management*. Prentice-Hall of India, New Delhi.
- Kumar, H.D. (2018). *Modern Concept of Ecology* (8/E). Vikas Publ. House Pvt. Ltd.
- Lockwood Julie L, Martha F Hoopes, and Michael P Marchetti (2013). *Invasion Ecology*. Wiley-Blackwell.
- Magurran Anne (1988). *Ecological Diversity and Its Measurement*. Chapman and Hall India
- Mani, M.S. (1974). *Ecology and Biogeography of India*, 1st Edn. Springer
- Michael J. Jeffries (2005). *Biodiversity and Conservation*, Routledge, London
- Michael P. (1984). *Ecological Methods for Field and Laboratory Investigations*. Tata McGraw-Hill Co. Ltd.
- Misra R. (1968). *Ecology Workbook*. Oxford and IBH, New Delhi.
- Mitsch, William J. and Ames G. Gosselink (2015). *Wetlands* (5/E). John Wiley & Sons, Inc.
- Ninan, K.N., S. Jyothis, P.Babu and V. Ramkrishnappa (2007). *The Economics of Biodiversity Conservation: Valuation in Tropical Forest Ecosystems*. Earthscan, London.
- Odum E.P and Gray Barrett (2004) *Fundamentals of Ecology*. Thomson Brooks
- Puri G.S. (1960) *Indian Forest Ecology Vol. I and II*. Oxford Books, New Delhi
- Ramchandra T.V., R. Kiran, N. Ahalya (2002). *Status, Conservation and Management of Wetlands*. Allied Publ. New Delhi.
- Ramkrishnan P.S. (2004). *Ecology and Sustainable Development*. National Book Trust, New Delhi.
- Rana S.V.S. (2013). *Essentials of Ecology and Environmental Science*, (5/E). PHI Learning Press.
- Shailaja Ravindranath and Sudha Premnath (1997). *Biomass Studies – Field Methods for Monitoring Biomass*. Oxford and IBH, New Delhi.
- Sutherland William J. (2006). *Ecological Census Techniques – A Handbook*. Cambridge Univ. Press.
- Uma Shaanker, R. Ganeshiah, KN. and Bawa KS (2001). (Eds). *Forest Genetic Resources: Status, Threats and Conservation Strategies*. Oxford and IBH, New Delhi
- Wheater C Philip, James R. Bell, Penny A. Cook (2011). *Practical Field Ecology: A Project Guide*. John Wiley



7. Phylum Platyhelminthes (04)

7.1 Introduction to Phylum Platyhelminthes

7.2 Salient features of Phylum Platyhelminthes

7.3 Classification of Phylum Platyhelminthes up to classes with two examples each class (names of examples only).

Class: Turbellaria (e.g: *Dugesia*, *Bipallium*)

Class: Trematoda (e.g: *Fasciola hepatica*, *Schistosoma haematobium*)

Class Cestoda: (*Taenia solium* (pork tape worm), *Echinococcus granulosus* (dog tapeworm))

7.4 Parasitic adaptations in Platyhelminthes: structural and physiological.

7.5 Economic importance of Platyhelminthes

Course Title: Animal Ecology

Course Code: ZO 112

Semester I

(2 Credits-30 Lectures)

Learning outcomes for the course:

- The learners will be able to identify and critically evaluate their own beliefs, values and actions in relation to professional and societal standards of ethics and its impact on ecosystem and biosphere due to the dynamics in population.
- To understand anticipate, analyse and evaluate natural resource issues and act on a lifestyle that conserves nature.
- The Learner understands and appreciates the diversity of ecosystems and applies beyond the syllabi to understand the local lifestyle and problems of the community.
- The learner will be able to link the intricacies of food chains, food webs and link it with human life for its betterment and for non-exploitation of the biotic and abiotic components.
- The working in nature to save environment will help development of leadership skills to promote betterment of environment.

ZO 112: Animal Ecology**(2 Credits-30 Lectures)**

No.	Topic & Content	Number of lectures
1.	Introduction to Ecology 1.1 Concepts of Ecology, Environment, Population, Community, Ecosystem, Biosphere, Autecology and synecology.	(02)
2.	Ecosystem 2.1 Types of ecosystems: Aquatic (Freshwater, estuarine, Marine and terrestrial (Forest, Grassland and Desert) 2.2 Structure and Composition of Ecosystem (Abiotic components and biotic components. 2.3 Food chain: Detritus and grazing food chains, Food web, Energy flow through the ecosystem, Ecological pyramids: Number, Biomass, and Energy. 2.4 concept of Eutrophication in lakes and rivers.	(08)
3	Population 3.1Characteristic of population: Density, Natality, Mortality, Fecundity tables, survivorship curves, age ratio, sex ratio, dispersal and dispersion. 3.2Exponential and logistic growth, 3.3 Population regulation – density-dependent and independent factors. Population interactions, Gause's Principle with laboratory and field interactions, 3.4 Quadrate, line and belt transect methods.	(08)
4.	Community 4.1Community characteristics: species richness, dominance, diversity, abundance, vertical stratification, Eco tone and edge effect; Ecological succession with one example.	(07)
5.	Animal interactions 5.1Introduction to Animal interactions 5.2 Types of Animal interactions with at least to suitable examples of each 5.2.1-Competition: Interspecific and Intraspecific	(05)

5.2.2- Beneficial Associations:

Commensalism (remora fish on shark, Cattle egrets on livestock),

Mutualism (Termite and *Trichonympha*, bees and flowers, cleaning symbiosis in fish by prawns.

5.3 Antagonistic associations: Parasitism (*Ascaris* and man, lice and humans), Prey predation (Lion and deer).

Course Title: Zoology Practical Paper

Course Code: ZO113

Semester I

(1.5 Credits-45 Hours)

Animal Diversity –I

1. Museum Study of phylum Protozoa: *Euglena*, *Paramecium*, *Amoeba*, *Plasmodium* sp.
2. Museum study of Phylum Porifera: *Sycon*, *Euplectella*, *Chalina*, *Spongilla*.
3. Museum study of phylum Cnidaria: *Hydra*, *Physalia*, *Aurelia*, *Metridium*.
4. Museum Study of phylum Platyhelminthes: *Planeria*, *Faciola hepatica*, *Taenia solium*
5. Study of *Paramecium*: Culture, External morphology, Conjugation and Binary fission.
6. Study of permanent slides: Spicules and Gemmules in Sponges, T.S. of *Sycon*, T.S. of *Hydra*, *Taeniasolium*: Scolex, Gravid proglottid.
7. Identification of any three museum specimen with help of taxonomic identification key.
8. Visit to Zoological survey of India/ Museum/National Park.

Animal Ecology:

1. Estimation of Dissolved oxygen from given water sample.
2. Estimation of Water Alkalinity from given water sample.
3. Study of animal community structure by quadrat method (Field or Simulation).
4. Determination of density, frequency and abundance of species by quadrat method.
5. Study of microscopic fauna of freshwater ecosystem (from pond).
6. Estimation of water holding capacity of given soil sample.
7. Estimation of dissolved and free carbon dioxide from water sample.
8. Study of Eutrophication in lake/river.

7 Population Genetics:	2 L
7.1 Hardy-Weinberg Law & Genetic Drift.	
7.2 Types of Natural Selection.	
8 Origin of Man:	4 L
8.1 Evolution of Man (Evolution of anthropoids including man) - Kenyanthropus to <i>Homo sapiens</i> .	
9 Zoogeographical Realms With reference to fauna:	2 L
10 Extinctions:	2 L
10.1 Extinction - An Overview.	

Reference Books

1. Mark Ridley. Evolution. 3rd Edition. Blackwell Publishing. (2004).
2. Mathur, Tomar, Singh. Evolution and Behaviour. Rastogi Publication, Merrut.
3. Mohan P. Arora. Evolutionary Biology, Himalaya Publishing House, Bombay.
4. P. S. Vermin and V. K. Agarwal. Cell Biology, Genetics, Molecular Biology, Evolution and Ecology, Revised Edition. S. Chand Publication (2004).
5. Strickberger. Evolution. Prentice Hall. (2002).
6. Theodore H., Jr Eaton. Evolution. 1st Edition. W. W. Norton Publication. (1970).
7. Organic Evolution, Richard Swann Lull, Light & Life Publishers.
8. Introductions to Evolution, Paul Amos Moody, Kalyani Publishers, New Delhi.
9. Organic Evolution, 1991 T.S. Gopal krishanan, Itta Sambashivarab Publ. House.
10. Evolutionary Biology, 1990, Mohan P. Arora, Himalaya Publi. House, Delhi.
11. Evolution, 1968, E. O. Dodson, Reinhold Publ. Crop., New York.
12. The major features of evolution, 1953, Simpson G. G. Columbia, New York.
13. The origin of species, 1959, Charles Darwin, New American Library, New York.

Course Title: Environmental Impact Assessment

Course Code: ZO 3610

Credits: 02

ZO 3610 - Environmental Impact Assessment

Title & Contents	Number of lectures
1. Environment:	2 L
1.1 Definition.	
1.2 Divisions.	
1.3 Importance.	
2. Pollution:	3 L
2.1 Definition and types.	
2.2 Impact on wildlife, natural resources, development.	
3. Sustainable development:	2 L

- 3.1 Definition and need.
 3.2 Exploitation of natural resources.
 3.3 Concept of carrying capacity.
 3.4 Three pillars of Sustainability.
 3.5 UN 17 Sustainable Development Goals (SDGs).
- 4. Overview of Environmental Protection acts:** **5 L**
- 4.1 The Air (Prevention and Control of Pollution) Act 1981.
 4.2 The Water (Prevention and Control of Pollution) Act 1974.
 4.3 The Environment Protection Act 1986.
 4.4 The National Green Tribunal Act 2010.
 4.5 Biological Diversity Act 2002.
- 5. Environmental Impact Assessment (EIA):** **5 L**
- 5.1 Definition, need and importance of EIA.
 5.2 EIA notification 2006 - key elements, History and Evolution of EIA.
 5.3 Categories of Industries / establishments requiring EIA, Types of EIA - strategic EIA, regional EIA, sectoral EIA, project level EIA and life cycle assessment.
 5.4 Rapid and comprehensive EIA.
- 6. EIA Process:** **5 L**
- 6.1 Screening, Scoping and consideration of alternatives.
 6.2 Baseline data collection, Impact analysis, Mitigation, Reporting, Public hearing.
 6.3 Review of EIA.
 6.4 Decision-making, monitoring clearance conditions.
- 7. Stakeholders in EIA process:** **3 L**
- 7.1 Project proponent, Environmental consultant.
 7.2 CPCB / MPCB.
 7.3 Public, EIA agency (IAA).
- 8. Overview of Scheme for Accreditation of EIA Consultant Organizations (NABET / QCI):** **5 L**
- 8.1 Eligibility and benefits.
 8.2 EIA coordinator (EC), Functional area experts (FAEs).
 8.3 Functional area associate (FAA) and team members: Role, educational qualification, experience and functions.

References:

1. Glasson, J., Therivel, R. (2019) Introduction to Environmental Impact Assessment. Routledge. London.
2. Judith, P. 1999. Handbook of Environmental Impact Assessment. Blackwell Science.
3. Marriott, B. 1997. Environmental Impact Assessment: A Practical Guide. McGraw-Hill, New York, USA.



Syllabus for

Ability Enhancement Compulsory Course (AECC – Environment Studies)(2 credit) for under graduate

(S.Y.BSc. Semester III)

It is as per UGC guidelines and framing -

Unit 1 : Introduction to environmental studies

- Multidisciplinary nature of environmental studies;
- Scope and importance; Concept of sustainability and sustainable development.

(2 lectures)

Unit 2 : Ecosystems

- What is an ecosystem? Structure and function of ecosystem ; Energy flow in an ecosystem : food chains, food webs and ecological succession. Case studies of the following ecosystems :

a) Forest ecosystem

b) Grassland ecosystem

c) Desert ecosystem

d) Aquatic ecosystems (ponds, streams, lakes, rivers, oceans, estuaries)

(8 lectures)

Unit 3 : Natural Resources : Renewable and Non-renewable Resources

- Land resources and land use change; Land degradation, soil erosion and desertification.
- Deforestation: Causes and impacts due to mining, dam building on environment, forests, biodiversity and tribal populations.
- Water : Use and over-exploitation of surface and ground water, floods, droughts conflicts over water (international & inter-state).
- Energy resources : Renewable and non renewable energy sources, use of alternate energy sources, growing energy needs, case studies.

(10 lectures)

Unit 4 : Biodiversity and Conservation

- Levels of biological diversity : genetic, species and ecosystem diversity; Biogeographic zones of India; Biodiversity patterns and global biodiversity hot spots
- India as a mega-biodiversity nation; Endangered and endemic species of India
- Threats to biodiversity : Habitat loss, poaching of wildlife, man-wildlife conflicts, biological invasions; Conservation of biodiversity : In-situ and Ex-situ conservation of biodiversity.
- Ecosystem and biodiversity services : Ecological, economic, social, ethical, aesthetic and Informational value.

(10 lectures)

References :

1. Carson, R. 2002. Silent Spring. Houghton Mifflin Harcourt.



2. Gadgil, M., & Guha, R. 1993. *This Fissured Land: An Ecological History of India*. Univ. of California Press.
3. Gleeson, B. and Low, N. (eds.) 1999. *Global Ethics and Environment*, London, Routledge.
4. Gleick, P. H. 1993. *Water in Crisis*. Pacific Institute for Studies in Dev., Environment & Security. Stockholm Env. Institute, Oxford Univ. Press.
5. Groom, Martha J., Gary K. Meffe, and Carl Ronald Carroll. *Principles of Conservation Biology*. Sunderland: Sinauer Associates, 2006.
6. Grumbine, R. Edward, and Pandit, M.K. 2013. Threats from India's Himalaya dams. *Science*, 339 : 36-37.
7. McCully, P. 1996. *Rivers no more: the environmental effects of dams* (pp. 29-64). Zed Books.
8. McNeill, John R. 2000. *Something New Under the Sun: An Environmental History of the Twentieth Century*.
9. Odum, E.P., Odum, H.T. & Andrews, J. 1971. *Fundamentals of Ecology*. Philadelphia: Saunders.
10. Pepper, I.L., Gerba, C.P. & Brusseau, M.L. 2011. *Environmental and Pollution Science*. Academic Press.
11. Rao, M.N. & Datta, A.K. 1987. *Waste Water Treatment*. Oxford and IBH Publishing Co. Pvt. Ltd.
12. Raven, P.H., Hassenzahl, D.M. & Berg, L.R. 2012. *Environment*. 8th edition, John Wiley & Sons.
13. Rosencranz, A., Divan, S., & Noble, M.L. 2001. *Environmental law and policy in India*. Tripathi 1992.
14. Sengupta, R. 2003. *Ecology and economics : An approach to sustainable development*. OUP.
15. Singh, J.S., Singh, S.P. and Gupta, S.R. 2014. *Ecology, Environmental Science and Conservation*. S. Chand Publishing, New Delhi.
16. Sodhi, N.S., Gibson, L. & Raven, P.H. (eds). 2013. *Conservation Biology : Voices from the Tropics*. John Wiley & Sons.
17. Thapar, V. 1998. *Land of the Tiger: A Natural History of the Indian Subcontinent*.
18. Warren, C. E. 1971. *Biology and Water Pollution Control*. WB Saunders.
19. Wilson, E. O. 2006. *The Creation: An appeal to save life on earth*. New York : Norton.
20. World Commission on Environment and Development. 1987. *Our Common Future*. Oxford University Press.



Syllabus for

Ability Enhancement Compulsory Course (AECC – Environment Studies)(2 credit) for under graduate

(S.Y.BSc. Semester IV)

It is as per UGC guidelines and framing -

Unit 5 : Environmental Pollution

- Environmental pollution : types, causes, effects and controls; Air, water, soil and noise pollution
- Nuclear hazards and human health risks
- Solid waste management : Control measures of urban and industrial waste.
- Pollution case studies.

(10 lectures)

Unit 6 : Environmental Policies & Practices

- Climate change, global warming, ozone layer depletion, acid rain and impacts on human communities and agriculture
- Environment Laws: Environment Protection Act; Air (Prevention & Control of Pollution) Act; Water (Prevention and control of Pollution) Act; Wildlife Protection Act; Forest Conservation Act. International agreements: Montreal and Kyoto protocols and Convention on Biological Diversity (CBD).
- Nature reserves, tribal populations and rights, and human wildlife conflicts in Indian context.

(9 lectures)

Unit 7 : Human Communities and the Environment

- Human population growth: Impacts on environment, human health and welfare.
- Resettlement and rehabilitation of project affected persons; case studies.
- Disaster management : floods, earthquake, cyclones and landslides.
- Environmental movements : Chipko, Silent valley, Bishnois of Rajasthan.
- Environmental ethics: Role of Indian and other religions and cultures in environmental conservation.
- Environmental communication and public awareness, case studies (e.g. CNG vehicles in Delhi).

(6 lectures)

Unit 8 : Field work

- Visit to an area to document environmental assets: river/ forest/ flora/fauna, etc.



- Visit to a local polluted site-Urban/Rural/Industrial/Agricultural.
- Study of common plants, insects, birds and basic principles of identification.
- Study of simple ecosystems-pond, river, Delhi Ridge, etc.

(Equal to 5 lectures)

References :

1. Carson, R. 2002. *Silent Spring*. Houghton Mifflin Harcourt.
2. Gadgil, M., & Guha, R. 1993. *This Fissured Land: An Ecological History of India*. Univ. of California Press.
3. Gleeson, B. and Low, N. (eds.) 1999. *Global Ethics and Environment*, London, Routledge.
4. Gleick, P. H. 1993. *Water in Crisis*. Pacific Institute for Studies in Dev., Environment & Security. Stockholm Env. Institute, Oxford Univ. Press.
5. Groom, Martha J., Gary K. Meffe, and Carl Ronald Carroll. *Principles of Conservation Biology*. Sunderland: Sinauer Associates, 2006.
6. Grumbine, R. Edward, and Pandit, M.K. 2013. Threats from India's Himalaya dams. *Science*, 339 : 36-37.
7. McCully, P. 1996. *Rivers no more: the environmental effects of dams* (pp. 29-64). Zed Books.
8. McNeill, John R. 2000. *Something New Under the Sun: An Environmental History of the Twentieth Century*.
9. Odum, E.P., Odum, H.T. & Andrews, J. 1971. *Fundamentals of Ecology*. Philadelphia: Saunders.
10. Pepper, I.L., Gerba, C.P. & Brusseau, M.L. 2011. *Environmental and Pollution Science*. Academic Press.
11. Rao, M.N. & Datta, A.K. 1987. *Waste Water Treatment*. Oxford and IBH Publishing Co. Pvt. Ltd.
12. Raven, P.H., Hassenzahl, D.M. & Berg, L.R. 2012. *Environment*. 8th edition. John Wiley & Sons.
13. Rosencranz, A., Divan, S., & Noble, M.L. 2001. *Environmental law and policy in India*. Tripathi 1992.
14. Sengupta, R. 2003. *Ecology and economics : An approach to sustainable development*. OUP.
15. Singh, J.S., Singh, S.P. and Gupta, S.R. 2014. *Ecology, Environmental Science and Conservation*. S. Chand Publishing, New Delhi.
16. Sodhi, N.S., Gibson, L. & Raven, P.H. (eds). 2013. *Conservation Biology : Voices from the Tropics*. John Wiley & Sons.
17. Thapar, V. 1998. *Land of the Tiger: A Natural History of the Indian Subcontinent*.
18. Warren, C. E. 1971. *Biology and Water Pollution Control*. WB Saunders.
19. Wilson, E. O. 2006. *The Creation: An appeal to save life on earth*. New York : Norton.
20. World Commission on Environment and Development. 1987. *Our Common Future*. Oxford University Press.



Semester-III

Course: Environmental and Green Chemistry (CH-336D)

Name of the Topic	Number of lectures
1. Concepts and scope of Environmental Chemistry	02
2. Atmosphere and Air Pollution	14
3. Hydrosphere and water pollution	08
4. Introduction to Green Chemistry	10
5. Green Chemistry and Technology for sustainable development	10
6. Green Chemistry and Hazardous Organic Solvents	04
Total lectures	48

Chapter 1: Concepts and scope of Environmental Chemistry

(02)

- 1.1 Introduction
- 1.2 Terminologies
- 1.3 Units of concentration
- 1.4 Segments of Environment

Ref. 1, Ref. 3

Aims and Objectives-

Students should know-

- i. Importance and conservation of environment.

Chapter 2: Atmosphere and Air Pollution

(14)

- 2.1 Composition and structure of atmosphere
- 2.2 Chemical and photochemical reactions in atmosphere
- 2.3 Chemistry of O₃, SO_x, NO_x and chlorides in atmosphere
- 2.4 Primary air pollutants
- 2.5 Sampling of air
- 2.6 Particulate matter: inorganic and organic
- 2.7 Smog: reducing and photochemical
- 2.8 Mechanism of ozone depletion
- 2.9 Stability and reactions of CFCs
- 2.10 Harmful effects of CFCs
- 2.11 CFCs substitutes
- 2.12 Bhopal gas tragedy

Ref. 1, Ref. 3, Ref. 5

Aims and Objectives-

Students should know-

- i. Segments of atmosphere



- ii. Hazards of flue gases
- iii. Ozone depletion
- iv. Ecological changes due to hazardous gases
- v. Understand the social issues

Chapter 3: Hydrosphere and water pollution

(08)

3.1 Water resources

3.2 Physical chemistry of sea water: composition, equilibria, pH, pE

3.3 Microbially mediated aquatic reactions, nitrogen cycle, iron and manganese bacteria

3.4 Classification of water pollutants

3.5 Organic and Inorganic pollutants: Pesticides, Detergents, Eutrophication, Marine, Oil, Acid mine drainage, remedial measures and sediments

3.6 Thermal pollution

3.7 Sampling and monitoring water quality parameters: pH, D.O. (Winkler Method), COD, TOC, Total hardness, free chlorine.

Ref. 1, 2, 3, and 5

Aims and Objectives-

Students should know-

- i. Water resources
- ii. Quality of potable water
- iii. WHO limits for toxic materials in water stream
- iv. Quality measures

Chapter 4. Introduction to Green Chemistry

[10]

4.1 Chemistry is good

4.2 The environment and the five environmental spheres

4.3 What is environmental Chemistry?

4.4 Environmental Pollution

4.5 What is green Chemistry?

4.6 Green Chemistry and synthetic chemistry

4.7 Reduction of risk: Hazard and exposure

4.8 The risk and no risks

4.9 Waste prevention

4.10 Basic principles of green chemistry

4.11 Examples based on green technology

[Ref: Green Chemistry By Stanley E Manahan, Chemchar Research Inc. (2006) -2ndEdn. chapter 1, P1-17 and Ref.6 Relevant pages.]

Chapter 5. Green Chemistry and Technology for sustainable development

[10]

5.1 Green Chemistry from theory to practice

5.2 The twelve principles of green chemistry

5.3 Green Chemistry and sustainable Development

5.4 Designing Products under the holistic approach " Cradle-to Cradle"

5.5 Scientific areas for practical applications of green chemistry

5.6 Use of alternative basic chemicals as feedstocs in chemical industry and research



5.7 Green Chemistry and Reduction of solvent Toxicity (Alternative Solvents or replacement)

5.8 Applications of New Methodologies in the synthesis of chemical compounds- catalysis and green chemistry.

[Ref : Green Chemistry–Green engineering by AthanasiosValavanidis and ThomaisVlachogianni (March 2012) ; Chapter 2 p17-37 and Ref.6 Relevant pages]

Chapter 6. Green Chemistry and Hazardous Organic Solvents (Green solvents, replacement and Alternative techniques) [04]

6.1 Introduction to Green Chemistry and Toxic organic solvents

6.2 Green solvents and Alternative methods

6.3 Green Chemistry, Green solvents – Alternative techniques in organic synthesis

[Ref : Green Chemistry –Green engineering , Chapter 5, p81-91, Ref.6 Relevant pages]

Aims and Objectives-(for Chapters 4, 5 and 6)

Students should know-

- i. Need of green chemistry technology
- ii. Principles of green chemistry
- iii. Advantages of green chemistry
- iv. Simple examples to clarify the principles
- v. Catalytic routes for sustainable developments

Reference Books:

1: Environmental Chemistry – A. K. De, 5th Edition (New age international publishers)

2: Environmental Chemistry – J. W. Moore and E. A. Moore (Academic Press, New York)

3: Environmental Chemistry – A. K. Bhagi and C. R. Chatwal (Himalaya Publishing House)

4: Analytical Chemistry – G. D. Christian 4th Edition (John Wiley and Sons)

5: Environmental Chemistry – H. Kaur 2nd Edition 2007, PragatiPrakashan, Meerut, India

6. Environmental Chemistry with Green Chemistry A. K Das , Books and Allied (P) Ltd, and



F. Y. B. A- Optional English (General Paper-1)
(w. e. f. 2019-2020)
(Choice Based Credit System)
70:30-Pattern
(70-Semester-End Exam & 30-Internal Evaluation)

Prescribed Text: *Initiations: Minor Literary Forms & Basics of Phonology* (Board of Editors- Orient BlackSwan)

Objectives:

- a) To expose students to the basics of literature and language and develop an integrated view about language and literature in them
- b) To acquaint them with minor forms of literature in English and help them to appreciate the creative use of language in literature
- c) To introduce them to the basics of phonology of English so that they can pronounce better and speak English correctly.
- d) To prepare students to go for detailed study and understanding of literature and language
- e) To enhance the job potential of students by improving their language skills

Semester - I

Prose Pieces:

1. A Lesson My Father Taught Me - A.P.J. Abdul Kalam
2. Toasted English - R. K. Narayan

Human Values

Short Stories:

1. The Romance of a Busy Broker - O. Henry
2. The Open Window - Saki



Semester-III

Prescribed Text: *Panorama: Values and Skills through Literature* (Board of Editors- Orient BlackSwan)

Unit-I- Prose

12 Clock Hours

1. A Simple Philosophy- **Seathl**
2. The Homecoming- **Rabindranath Tagore**
3. The Verger- **Somerset Maugham**

Human Value

Unit-II- Poetry

12 Clock Hours

1. The Palanquin Bearers- **Sarojini Naidu**
2. On the Grasshopper and the Cricket- **John Keats**
3. Pied Beauty- **George Manley Hopkins**

Unit-III- Grammar

10 Clock Hours

1. The Passive Voice
2. Direct and Indirect Speech
3. Negative Sentences

Unit-IV- Vocabulary

06 Clock Hours

1. One-word substitutes
2. Idioms
3. Suffixes and prefixes

Unit-V- Soft Skills

05 Clock Hours

1. Leadership skills
2. Teamwork skills

Semester-IV

Prescribed Text: *Panorama: Values and Skills through Literature* (Board of Editors- Orient BlackSwan)

Unit-I- Prose

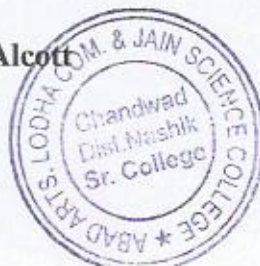
12 Clock Hours

1. The Chicago Speech- **Swami Vivekananda**
2. The Lottery Ticket- **Anton Chekhov**
3. The Open Window- **Saki (H. H. Munro)**

Unit-II- Poetry

12 Clock Hours

1. On Another's Sorrow- **William Blake**
2. Laugh and Be Merry- **John Masefield**
3. The Rock and the Bubble- **Louisa May Alcott**



- **The Internal Examination** for 30 marks will be conducted at college level.
 - e) Assignment/group discussion/tutorial/seminar/oral/project for 10 marks
 - f) A Mid-semester Written Test for 20 marks

Semester-III

Course Content-

Prescribed Text: *Mirage: An Anthology of English Poetry* Ed. Board of Editors, Orient Blackswan

A) Theory of Poetry

20 Clock Hours

- (a) What is poetry? Significant development in the art of poetry during major periods
- (b) Elements of poetry: Rhythm, Meter, Sound Structure, Stanza Forms,
- (c) Figures of Speech, Symbols, Imagery, Simile, Metaphor, Personification and other Poetic Devices like Repetition and Contrast.
- (d) Types of Poetry: Elegy, Sonnet, Dramatic Monologue, Lyric, Ode, Ballad

B) Poems:

25 Clock Hours

1. The Nightingale- **Philip Sidney**
2. Sonnet 3- **William Shakespeare**
3. The Sun Rising- **John Donne**
4. London- **William Blake**
5. Ode on a Grecian Urn- **John Keats**
6. To a Skylark- **P. B. Shelley**

Human Values

Semester-IV

Prescribed Text: *Mirage: An Anthology of English Poetry* Ed. Board of Editors, Orient Blackswan

Poems:

45 Clock Hours

1. My Last Duchess- **Robert Browning**
2. Sailing to Byzantium- **W. B. Yeats**
3. Futility- **Wilfred Owen**
4. A Bird Came Down the Walk- **Emily Dickinson**
5. Talking in Their Sleep- **Edith M. Thomas**
6. What Is Life- **John Clare**
7. Sympathy- **Paul Laurence Dunbar**
8. The Awakening- **James Weldon Johnson**
9. The Wind- **Amy Lowell**
10. Freedom- **Rabindranath Tagore**
11. Caged Bird- **Maya Angelou**
12. Failure of Communication- **Judith Wright**



Nadine Gordimer- *My Son's Story*

Unit-IV: Biography

15 clock hours

Anne Frank- *The Diary of a Young Girl*

Paper-4.8: World Literature in English

Semester-IV

Unit-I: Drama

15 clock hours

Bertolt Brecht, *The Good Woman of Setzuan*

Unit-II: Poetry

15 clock hours

Bian Zhilin, "Long is"

Dennis Brutus, "A Common Hate Enriched Our Love and Us"

Gabriel Okara , i) "You Laughed and Laughed and Laughed", ii)"The Mystic Drum"

NgugiwaThiongo, "The Dawn of Darkness"

ParveenShakir, "A Special Laborer of Steel Mills"

Unit-III: Fiction

15 clock hours

V. S. Naipaul 'A House for MrBiswas'

Unit-IV: Autobiography

15 clock hours

Maxine Hong Kingston, *The Woman Warrior: Memoirs of a Girlhood Among Ghosts*

Suggestions for teachers:

Teachers are expected to briefly discuss the literary background, movements, important writers and their works while teaching each of the texts listed in the course. There will be a separate question on the socio-cultural and literary background of the period during which the texts were written. The questions may include the cultural and literary influences on the author, the authors' distinct contribution to the literary world, the social background of a region as it is reflected in a particular work, etc. These topics for questions are suggested as examples only; teachers may discuss other relevant topics as well. Needless to say, every teacher should briefly introduce their class to the socio-political, historical and literary conditions that prevailed in each of the countries to which the writers belonged. The dominant literary tendencies and trends, the stylistic features of the authors prescribed for study, the major thematic concerns in the texts, etc. are also issues that can be discussed. Students are expected to read all the primary texts listed in the paper. Teachers should



Savitribai Phule Pune University
F. Y. B. A. Political Science
(CBCS pattern to be implemented from 2019-2020)
G-1 General Paper
INTRODUCTION TO INDIAN CONSTITUTION
Total Credits : 03

Objectives

The contents of this course are designed with the following objectives:

1. To acquaint students with the important features of the Constitution of India and with the basic framework of Indian government.
2. To familiarize students with the working of the Constitution of India.

Semester-I	Period
Unit 1: Making of the Indian Constitution	12
a) Historical Background	
b) Constituent Assembly	
c) Preamble	
d) Salient Features	
Unit 2: Fundamental Rights, Duties and Directive Principles	12
a) Fundamental Rights	
b) Fundamental Duties	
c) Directive Principles of State Policy	
Unit 3: Federalism	12
a) Salient Features of Indian Federalism	
b) Centre –State Relations	
c) Issues of Conflict (Water and Border Issues)	
Unit 4: Constitutional Amendments: Scope and Limitations	12
a) Constitutional Provisions	
b) Major Constitutional Amendments (42, 44 & 86)	
c) Basic Structure of the Indian Constitution	
Semester- II	
Unit 5: Legislature	12
a) Union Legislature – Structure, Powers and Role	
b) State Legislature – Structure, Powers and Role	
Unit 6: Executive	12
a) Union Executive –	
i) President and Vice President– Powers, Functions and Role	
ii) Prime Minister - Powers, Functions and Role	
iii) Council of Minister – Powers and Functions and Role	
b) State Executive-	
i) Governor - Powers, Functions and Role	
ii) Chief Minister – Powers, Functions and Role	
iii) Council of Minister – Powers and Functions and Role	



Unit7: Judiciary

12

- a) Supreme Court : Powers and Functions
- b) High Court : Powers and Functions
- c) Judicial Review and Judicial Activism

Unit8: Electoral System

12

- a) Election Commission:Composition, Functions and Role
- b) Chief Election Commissioner
- c) Electoral reforms

References:

- 1) Austin Granville, 1999, *The Indian Constitution: Cornerstone of a Nation*, Oxford, Oxford University Press.
- 2) Austin Granville, 2003, *Working a Democratic Constitution: The Indian Experience*, Delhi, Oxford University Press.
- 3) आवटे श्रीरंजन राही श्रुती गणेश, 2019, *आयल आयकार्ड*, पुणे, द सुनिक अॅकॅडमी पब्लिकेशन,
- 4) Basu D.D., 2018, *Introduction to the Constitution of India*, New York, LexisNexis.
- 5) Brass Paul., 1994, *The Politics of Indian Since Independence*, Cambridge, Cambridge University Press.
- 6) बाबल वि. म., 2004, *भारतीय राज्यघटना आणि राजकीय व्यवहार*, पुणे, के सागर पब्लिकेशन.
- 7) भोळे भा.ल., 2015, *भारतीय गणराज्याचे शासन आणि राजकारण*, नागपूर, पिंपळापुरे प्रकाशन,.
- 8) चपळगावकर नरेंद्र, 2002, *राज्यघटनेचे अर्थशास्त्र*, मुंबई, मौज प्रकाशन.
- 9) जाधव तुकाराम शिरापुरकर महेश, 2012, *भारतीय राज्यघटना व घटनात्मक प्रक्रिया*, पुणे, द सुनिक अॅकॅडमी पब्लिकेशन
- 10) पांडे कृष्णचं. ग . 1997, *भारतीय राज्यघटना*, नागपूर, मंगेश प्रकाशन.
- 11) Jha Rajesh, 2012, *Fundamentals of Indian Political System*. Delhi, Dorling Kindersley (India) Pvt Ltd, Pearson Education Society.
- 12) कांबळे बाळ, वकील अलिम वदेवरे पी. डी., 2012, *भारताची राज्यघटना, राजकारण व कायदा*, पुणे, डायमंड प्रकाशन.
- 13) कश्यप सुभाष, (अनुवाद न. ब. पाटील) , 2001, *आपली संसद, नॅशनल बुक ट्रस्ट इंडिया*
- 14) नांदेडकर च. गो., 2011, *भारतीय राज्यघटना आणि राज्यव्यवहार*, पुणे, डायमंड प्रकाशन.
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- 16) साठे सत्यरंजन, 1998, *भारताच्या राज्यघटनेची ५० वर्षे*, पुणे, कॉन्टिनेन्टल प्रकाशन.
- 17) व्होरा राबेंद्र व पळशीकर सुहास, 2010, *भारतीय लोकशाही: अर्थ आणि व्यवहार*, पुणे, डायमंड प्रकाशन.



Savitribai Phule Pune University, Pune
S. Y. B. A. Political Science
(CBCS pattern to be implemented from 2020-2021)
Core Course (C.C.)
AN INTRODUCTION TO POLITICAL IDEOLOGIES

Objectives:

- This course is designed to acquaint students with the –
1. Role of different political ideologies and their impact in politics
 2. Close link between an idea and its actual realization in public policy
 3. Legacy of all the major ideologies

SEMESTER III CC-1 C (3)	PERIOD
Unit 1: Ideology	12
a) Origin, Meaning, Definition	
b) Nature	
c) Scope	
Unit 2: Nationalism	11
a) Meaning, Definitions and Elements	
b) Progressive and Reactionary	
c) Internationalism	
Unit 3: Democratic Socialism	11
a) Meaning and Nature	
b) Features	
c) Achievements and Limitations	
Unit 4: Fascism	11
a) Principles	
b) Factors responsible for the rise of Fascism	
c) Evaluation	
SEMESTER IV CC-1 D (3)	
Unit 5: Marxism	12
a) Historical Materialism	
b) Marxian State	
c) Neo Marxism	



Unit 6: Phule-Ambekarism	11
a) Equality	
b) Caste & Religion	
c) Democracy	
Unit 7: Gandhism	11
a) Truth and Non-Violence	
b) Theory of Gram Swaraj	
c) Satyagraha	
Unit 8: Feminism	11
a) Meaning and Nature	
b) Liberal Feminism	
c) Feminism in India : Caste and Patriarchy	

Readings:

1. D. Bell, 1960, *The End of Ideology*, New York, The Free Press.
2. देवेंद्र सुरेश, २०२०, राजकीय विचार प्रणाली, (Semester 3, e-Book), Amazon Asia Pacific Hoardings Pvt. Ltd.
3. देवेंद्र सुरेश, २०२०, राजकीय विचार प्रणाली, (Semester 4, e-Book), Amazon Asia Pacific Hoardings Pvt. Ltd.
4. E. Gellner, 1983, *Nations and Nationalism*, Oxford, Blackwell.
5. गणकवाह संजय, २०१९, मार्क्स अंबेडकर परिप्रेक्ष्यातून शिष्य आणि रोजगार, पुणे, शब्दमंग प्रकाशन.
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8. P. Gay, 1952, *The Dilemma of Democratic Socialism: Eduard Bernstein's challenge to Marx*, New York, Columbia University Press.
9. R. M. Christenson, et al., 1971, *Ideologies and Modern Politics*, London, Thomas Nelson and Sons.
10. R. N. Berki, 1975, *Socialism*, London, John Dent and Sons.
11. R. N. Iyer, 1973, *The Moral and Political Thought of Mahatma Gandhi*, New York, Oxford University Press.
12. Sayyad Yasinbhai Gulabbhai, 2018, *Modern Political Theory*, Kanpur, International Publication.
13. Sir I. Berlin, 1981, "Nationalism: Past Neglect and Present Power" in H. Hardy (ed.) *Against the Current*, Oxford, Oxford University Press.
14. ननपुत्रे संभाजी आणि भुषणकर हनुमंत, २०१३, राजकीय विचार प्रणाली, औरंगाबाद, विन्मय प्रकाशन.
15. The Liberal Tradition in China, 1983, *Hong Kong and New York*, Chinese University, Hong Kong Press.



Savitribai Phule Pune University, Pune
S. Y. B. A. Political Science
(CBCS pattern to be implemented from 2020-2021)
DISCIPLINE SPECIFIC ELECTIVE COURSE
WESTERN POLITICAL THOUGHT

Objectives:

This course is designed to acquaint students with the –

1. Major traditions of thought that have shaped political discourse in different parts of the world.
2. The great diversity of social contexts and philosophical visions.
3. The history of political thought as a series of critical, interconnected and open-ended conversations about the ends and means of the good life.

SEMESTER III DSE-1A (3)	PERIOD
Unit 1: Plato	12
a) Ideal State	
b) View on Education	
c) Theory of Justice	
Unit 2: Aristotle	11
a) Classification of the State	
b) Views on Slavery	
c) Theory of Revolution	
Unit 3: Machiavelli	11
a) Human Nature	
b) Attitude towards Religion and Morality	
c) Views on State	
Unit 4: Locke	11
a) State of Nature	
b) Natural Rights	
c) Theory of Social Contract	
SEMESTER IV DSE-1B (3)	
Unit 5: Rousseau	12
a) State of Nature	
b) General Will	
c) Theory of Social Contract	



Unit 6: Hegel	11
a) Idealism	
b) Theory of State	
c) Views on Freedom	
Unit 7: J. S. Mill	11
a) Views on Liberty	
b) Representative Government	
c) Views on Utilitarianism	
Unit 8: Karl Marx	11
a) Historical Materialism	
b) Class Struggle	
c) Theory of State and Revolution	

Readings:

1. Adams Ian and R.W.Dyson, 2004, *Fifty Great Political Thinkers*, London, Rutledge.
2. भोळे भास्कर, १९९५, *पाश्चिमात्य राजकीय विचारवंत*, नागपुर, पिंपळापुरे.
3. Deo Vijay, SharadGosavi&SanjyotApte, 2011, *Western Political Thought*, Pune, Diamond Publication.
4. देवरेसुरेश, २०२०, *पाश्चिमात्यराजकीयविचार(सेमेस्टर-३, ईपुस्तक)*, अमेझॉनएशिया-पॅसिफिक होल्डिंग्ज प्रायव्हेट लिमिटेड.
5. देवरेसुरेश, २०२०, *पाश्चिमात्यराजकीयविचार(सेमेस्टर-४, ईपुस्तक)*, अमेझॉनएशिया-पॅसिफिक होल्डिंग्ज प्रायव्हेट लिमिटेड.
6. गार्डे डी. के., १९७७, *पाश्चिमात्य राजकीय विचार*, पुणे, राणे प्रकाशन.
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8. Nelson Brian, 2004, *Western Political Thought*, Pearson Education
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10. Parekh Bhiku and Thomas Pantham, 1987, *Political Discourse; Exploration in Indian and Western Political Thought*, New Delhi, Sage.
11. Sabine G.H. 1971, *A History of Political Theory*, Calcutta, Oxford & I.B.H.
12. साकळकर ई. आणि जैन अशोक, १९९०, *पाश्चिमात्यराजकीयविचार*, पुणे, नेट प्रकाशन.
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Savitribai Phule Pune University
Political Science
Syllabus for S. Y. B. A. (Extra Credit)
BASICS OF INDIAN CONSTITUTION

Objectives:

1. To acquaint students with the important features of the Constitution of India and with the basic framework of Indian government.
2. To familiarize students with the working of the Constitution of India.

SEMESTER III
SEC-2A (2)

UNIT – I

1. Making of the Indian Constitution

- a) Historical Background
- b) Constituent Assembly
- c) Preamble
- d) Salient Features

UNIT - II

2. Fundamental Rights

Major Fundamental Rights-

- a) Right to Equality
- b) Right to Liberty
- c) Right to Freedom of Religion
- d) Cultural and Educational Rights

References:

1. Austin Granville, 1999, *The Indian Constitution: Cornerstone of a Nation*, Oxford, Oxford University Press.
2. Austin Granville, 2003, *Working a Democratic Constitution: The Indian Experience*, Delhi, Oxford University Press.
3. आवटे श्रीरंजन आणि राही श्रुती गणेश , २०१९ , *आपलं आयकार्ड*, पुणे , द युनिक अॅकॅडमी पब्लिकेशन .
4. Basu D.D., 2018, *Introduction to the Constitution of India*, New York, LexisNexis.
5. Brass Paul, 1994, *The Politics of Indian Since Independence*, Cambridge, Cambridge University Press,
6. भोळे भा.ल., २०१५, *भारतीयगणराज्याचे शासन आणि राजकारण*, नागपूर, पिंपळापुणे प्रकाशन.
7. चपळगावकरनरेंद्र, २००२, *राज्यघटनेचे अर्थसतक*, मुंबई, मौज प्रकाशन.



8. जाधवतुकाराम आणि विशरापूरकरमहेश, २०१२, भारतीयराज्यघटनावघटनात्मक प्रक्रिया, पुणे, द युनिक अॅकॅडमी पब्लिकेशन.
9. देवरे सुरेश, २०२०, भारतीय राज्यघटनेची ओळखअमेझॉन एशिया पॅसिफिक (पुस्तक-ई, २/१-सेमेस्टर), हॉलंडींग प्रायव्हेट लिमिटेड
10. Jha Rajesh, 2011, *Fundamentals of Indian Political System*, Delhi, Pearson.
11. कांबळेबाळ, वकीलअलिम आणिबदेवरेपी.डी., २०१२, भारताचीराज्यघटना, राजकारणवकायदा, पुणे, डायमंड प्रकाशन.
12. साठे सत्यरंजन, १९९८, भारताच्याराज्यघटनेची५० वर्षे, पुणे, कॉन्टिनेंटल प्रकाशन.
13. व्होरा राजेंद्र आणि पळशीकर सुहास, २०१०, भारतीयलोकशाही: अर्थ आणि व्यवहार, पुणे, डायमंड प्रकाशन.



SYLLABUS FOR TYBA POLITICAL SCIENCE (G-3)

POLITICAL IDEALOGIES

Course Rationale:

This paper studies the role of different political ideologies and their impact in politics. Each ideology is critically studied in its historical context. In course of its evolution and development, the different streams and subtle nuances within each ideology, the changes and continuities in its doctrine and its relevance to contemporary times are highlighted. The close link between an idea and its actual realization in public policy needs to be explained as well. The philosophical basis of the ideologies is emphasized with special emphasis on key thinkers and their theoretical formulations. The legacy of all the major ideologies is to be critically assessed.

SECTION-I

<u>UNIT-I: - Ideology</u>	08
a) Origin, Meaning, Definition	
b) Nature and Scope	
<u>UNIT-II: - Nationalism</u>	14
a) Meaning, Definitions and Elements	
b) Progressive and Reactionary	
c) Internationalism	
<u>UNIT-III: - Democratic Socialism</u>	14
a) Meaning, Nature and Features	
b) Achievements and Limitations	
c) Types : Febianism, Syndicalism, Guild Socialism	
<u>UNIT-IV: - Fascism</u>	12
a) Factors responsible for the rise of Fascism	
b) Principles	
c) Corporate State	

SECTION-II

<u>UNIT-V: - Marxism</u>	12
a) Historical Materialism	
b) Theory of Surplus Value	
c) Marxian State	
<u>UNIT-VI: - Phule-Ambekarism</u>	12
a) Equality	
b) Religion	
c) Democracy	



UNIT-VII: - Gandhism

12

- a) Truth and Non-Violence
- b) Theory of Satyagraha
- c) Gram Swaraj

UNIT-VIII: - Feminism

12

- a) Meaning and Nature
- b) Liberal Feminism
- c) Feminism in India : Caste, Patriarchy, Women's Representation

Readings:

- L. P. Baradat, Political Ideologies: Their Origins and Impact, Englewood Cliffs NJ, Prentice Hall, 1989.
- _____, The Liberal Tradition in China, Hong Kong and New York, Chinese University of Hong Kong Press, 1983.
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- Dr. Date Sunil & Dr. Dhobale Ramesh, Political Ideologies (Marathi), Vidya Book Publishers, Aurangabad, 2009.
- Dr. Rathi Shubhangi, Modern Political Ideologies (Marathi), Atharva Publication, Jalgaon, 2014.
- Kulkarni A.N., Modern Political Ideologies, Vidya Prakashan Nagpur, 2014

OR



SYLLABUS FOR TYBA POLITICAL SCIENCE (S-4)**INTERNATIONAL POLITICS****Course Rationale:**

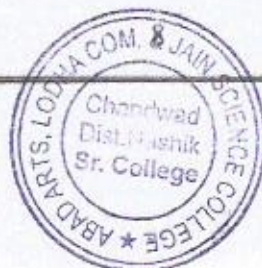
This paper deals with concepts and dimensions of international relations and makes an analysis of different theories highlighting the major debates and differences within the different theoretical paradigms. The dominant theories of power and the question of equity and justice, the different aspects of balance of power leading to the present situation of a unipolar world are included. It highlights various aspects of conflict and conflict resolution, collective security and in the specificity of the long period of the post Second World War phase of the Cold War, of Détente and Deterrence leading to theories of rough parity in armaments.

SECTION-I:

UNIT I :- International Politics	12
a) Nature and Scope	
b) Theories of Idealism and Realism	
UNIT II :- Approaches to the Study of International Relations	12
a) Power Approach	
b) Decision Making Approach	
c) System Approach	
UNIT III :- Power	12
a) Meaning	
b) Elements	
c) Changing Nature of the National Power	
UNIT IV :- Balance of Power	12
a) Meaning and Nature	
b) Characteristics	
c) Changing Nature of the Balance of Power	

SECTION -II

UNIT V :- Security	12
a) Meaning and definition	
b) Regional Security	
c) Collective Security	
UNIT VI :- Diplomacy	12
a) Meaning	
b) Types of Diplomacy	
c) Challenges To Diplomacy	



UNIT VII :- Disarmament

12

- a) Meaning and Nature
- b) Types of Disarmament
- c) Issues and Challenges

UNIT VIII :- Issues in International Politics

12

- a) Human Rights –Its variations and Measures
- b) Terrorism – Causes and Consciousness

Readings:

- D. A. Baldwin (ed.), *Neo-realism and Neo-liberalism*, New York, Columbia University Press, 1993. (ed.), *Paradoxes of Power*, New York, Basil Blackwell, 1989.
- J. C. Bennett (ed.), *Nuclear Weapons and the Conflict of Conscience*, New York, Charles Scribner's Sons, 1962.
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- H. Bull, *The Control of the Arms Race*, New York, Praeger, 1961.
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- W. D. Coplin, *Introduction to International Politics*, Chicago, Markham, 1971
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- R. L. Pfaltzfraff, Jr., *Contending Theories of International Relations*, Philadelphia, J.B. Lippincott Co., 1970.
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- R. A. Falk, *Law, Morality and War in the Contemporary World*, New York, Frederick A Praegar, 1963
- H. W. Forbes, *The Strategy of Disarmament*, Washington DC, Public Affairs Press, 1962.
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- F. I. Greenstein and N. W. Polsby, *Theory of International Relations*, Reading Massachusetts, Addison-Wesley, 1979.
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- A. Hurrell, "Collective Security and International Order Revisited" *International Relations*, Vol. II, No.1, April.
- R. O. Keohane, *After Hegemony: Cooperation and Discord in the World Political Economy*, Princeton NJ, Princeton, University Press, 1984.
- (ed.), *Neo-realism and Its Critics*, New York, Columbia University Press, 1986.
- , *International Institutions and State Power*, Boulder Colorado, Westview Press, 1989. ———
- and E. Ostrom (eds.), *Local Commons and Global Interdependence: Heterogeneity and Co-operation in Two Domains*, London, Sage, 1994.
- S. D. Krasner (ed.), *International Regimes*, Ithaca NY, Cornell University Press, 1983.
- Political Science 23 H. D. Lasswell, *World Politics and Personal Insecurity*, New York, McGraw-Hill Book Company, 1953.
- H. J. Morgenthau, *Politics Among Nations*, 6th edition, revised by K. W. Thompson, New York, Alfred Knopf, 1985.
- J. A. Vasquez, *The Power of Power Politics*, London, Frances Pinter, 1983.



PO-C3: Political Institutions in India

Objectives:

The course introduces the student to the leading institutions of India's political system and to the changing nature of these institutions. Apart from explaining the structure and functions of the main institutions the course will try to acquaint students with the idea of institutional balance of power as discussed in the Indian constitution and as developed during the functioning of Indian democracy over the past seven decades.

1. **Nationalist legacies**
 - a. Unity and Integrity
 - b. Democracy
 - c. Development and Social Transformation
2. **Federal institutions**
 - a. Strong Centre' framework
 - b. Autonomy and devolution
 - c. Multilevel federalism
3. **Executive**
 - a. President and prime minister
 - b. Principle of collective responsibility and accountability to the legislature
 - c. Role of governor
4. **Legislature**
 - a. Composition and powers
 - b. Norms of representation
 - c. Legislative supremacy
5. **Judiciary**
 - a. Composition
 - b. Judicial review and judicial activism
 - c. Judicial interpretations of Fundamental Rights and Directive Principles, basic structure doctrine
6. **Welfare, Regulation and Security**
 - a. UIDAI
 - b. TRAI
 - c. AFSPA

Readings:

1. Austin Granville, 1972, *The Indian Constitution: Cornerstone of a Nation*, New Delhi, Oxford University Press.



PO-C5: Theory of International Politics**Objectives:**

Students need a brief history of international politics to understand why we study the subject and how current scholarship is informed by what preceded it. Theories provide interpretative frameworks for understanding what is happening in the world and the levels of analysis. Competing theories are presented.

1. Introduction to International Politics

- a. Meaning
- b. Nature
- c. Scope

2. Changing International Political Order since World War II

- a. Rise of super powers; cold war & Détente
- b. Non-aligned movement: aims and achievements, relevance
- c. Collapse of the Soviet Union; Rise of American hegemony

3. Approaches to International Politics

- a. Idealism
- b. Realism
- c. Liberalism
- d. Marxism

4. Geopolitical Issues

- a. Theories of Geopolitics, Alfred Mahan, Harry Mackinder and Robert Kohen
- b. Contemporary Geopolitics

5. Positivist and Post Positivist Framework

- a. Positivism
- b. Critical Theory
- c. Constructivism

6. Contemporary concerns

- a. Terrorism
- b. Environment
- c. Gender
- d. Human Rights

Readings:

1. Aneek Chaterjee, 2012, *International Relations: Today: Concepts and Application*, New Delhi, Pearson.
2. Brown Chris and Ainley Hirstein, 2009, *Understanding International Relations*, New York, Palgrave.



PO-08- Political Thought in Modern Maharashtra**Objectives:**

The course is an introduction to the political thinking in Modern Maharashtra since the late 19th century. It tries to acquaint students with the main issues and concerns in the public life of a regional society as it shaped in the context of colonialism, nationalism and modernity. The course is woven around thematic issues rather than around individual thinkers in order to help students understand the essentially collective and yet diverse nature of political thought.

1. **Mahatma Phule**
 - a. Views on Equality
 - b. Analysis of Caste System and Critique of Brahminism
 - c. Sarvajanic Satya Dharma
2. **Lokmanya Bal Gangadhar Tilak**
 - a. Cultural Nationalism
 - b. Doctrine of Chatusutri i.e. Swadeshi, National Education, Boycott and Swaraj
 - c. Views on Ends and Means
3. **Dr. Babasaheb Ambedkar**
 - a. Nation and Nationalism
 - b. Constitution of India
 - c. Dalit Rights Movement
4. **Vinayak Damoder Savarkar**
 - a. Hindu Nationalism
 - b. Views on Social Reform
 - c. Views on Militarization
5. **Maharshi Vitthal Ramji Shinde**
 - a. Views on Untouchability
 - b. Views regarding Bahujan Politics
 - c. Views on Social Reforms
6. **Vinoba Bhave**
 - a. Satyagrah
 - b. Sarvodaya
 - c. Bhoodan Movement



✽ **PO-C9 World Politics-New Developments**

Objectives:

1. The objectives of this course are to introduce the students to the contemporary issues and debates in the world politics.
2. The students would also be made aware of the dimensions of the making of the foreign policy as well as the role of Non- State Actors in World Politics.
3. They would also learn about the emerging New World Order and the challenges to it.

1. Foreign Policy

- a) Definition and making of foreign policy
- b) Factor influencing the foreign policy (Internal and external)
- c) Role of state in making of foreign policy

2. Intervention and coercive

- a) Methods of Intervention
- b) Impact of Intervention
- c) Cross – border relationship

3. Impact of world Trade on Politics

- a) World trade and behavioral of nation
- b) Role of MNCS and TNCS on national politics

4. Challenges before the nation

- a) Use of Military
- b) Terrorism
- c) Ethnic Problems
- d) Refugees

5. Environmental Issues and the nation

- a) Environmental depletion
- b) Effort made by the nation for environmental awareness
- c) Feminism

Readings:

1. Awari Vilas, 2020, *India's Foreign Policy*, Kanpur, International Publication.
2. Awari Vilas, 2020, *International Relation*, Kanpur, International Publication.
3. Baylis John and Steve Smith, 2005, *The Globalization of World Politics*, London, Oxford University Press.
4. J. Shivananda, 2006, *Human Rights: Concepts and Issues*, New Delhi, Alfa Publications.
5. James Lutz and Brenda Lutz, 2008, *Global Terrorism*, New Delhi, Sage.
6. Kegley Jr. Charles W. and Eugene R. Wittkopf, 2005, *World Politics: Trend and Transformation*, Belmont andThmont, Thomson Wodsworth.



Savitribai Phule Pune University, Pune
Proposed Syllabus in History for S.Y.B.A. (Credit System) from the academic Year 2020-21
Under the Faculty of Humanities
Discipline Specific Elective Course (DSE-2 B) - 3 Credit
Semester -IV-Glimpses of the Modern World - Part II

Learning Objectives:

1. This paper is designed to introduce the students to the political history of the Modern World.
2. It will enable students to study remarkable historical developments in the various countries including India, which had a significant impact on almost all over the Modern World.
3. It will enable students to understand the significant impact of the modern concepts such as Dictatorship, Cold War, Nationalism, Communism, Imperialism, Polarization, etc.
4. It will get students acquainted with the major nationalist movements, the World War II and its consequences, the Cold War and its Consequences.

Learning Outcomes:

1. It will enable students to develop the overall understanding of the Modern World.
2. The students will get acquainted with the major nationalist movements, the World War II and its consequences, the Cold War and its Consequences.
3. It will enhance their overall perception of the history of the Modern World.
4. It will enable students to understand the significance of the strategic political developments in the Modern World.

Pedagogy: Lectures/Visual presentation/ Role play/ Critical analysis/Assignments/Tests/Quiz/
e-learning

Unit I. Nationalist Movements in Asia and Africa

12

- a) Dr. Sun-Yet-Sen
- b) Mahatma Gandhi (Non-Cooperation Movement, Civil Disobedience Movement, Quit India Movement)
- c) Dr. Nelson Mandela

Unit II. Rise of Dictatorship

12

- a) Italy - Mussolini
- b) Germany – Hitler
- c) Turkestan - Kemal Pasha
- d) Militarism in Japan

Human Right



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Proposed Syllabus in History for S.Y.B.A. (Credit System) from the academic Year 2020-21
Under the Faculty of Humanities
Discipline Specific Elective Course (DSE-2A) - 3 Credit
Semester -III-Glimpses of the Modern World - Part I

Learning Objectives:

1. This paper is designed to introduce the students to the history of the Modern World with its socio-religious, political and economic developments.
2. It will enable students to study interesting historical developments in the countries other than India, which had a significant impact on almost all over the Modern World.
3. It will enable students to understand the significant impact of the modern concepts such as Renaissance, Nationalism, Communism, Imperialism, etc.
4. It will get students acquainted with the major revolutions, and political developments which led to the World War I and its consequences.

Learning Outcomes:

1. It will enable students to develop the overall understanding of the Modern World.
2. The students will get acquainted with the Renaissance, major political, socio-religious and economic developments during the Modern World.
3. It will enhance their perception of the history of the Modern World.
4. It will enable students to understand the significance of the intellectual, economic, political developments in the Modern World.

Pedagogy: Lectures/Visual presentation/ Role play/ Critical analysis/Assignments/Tests/Quiz/
e-learning

Unit I. The Modern Age	6
a) Renaissance - Background and Nature	
b) Religious Reforms Movement - Martin Luther	
Unit II. The Age of Revolutions	13
a) The American Revolution - Causes and Consequences	
b) The French Revolution - Causes and Consequences	
c) The Industrial Revolution - Causes and Consequences	
Unit III. Nationalism	13
a) Unification of Italy	
b) Unification of Germany	
c) Japan - The Meiji Revolution	

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signature*



2. The students will get acquainted with the Renaissance and its

3. It will enhance their perception of the history of the modern world.
4. It will enable students to understand the significance of the intellectual, economic, political developments in the Modern World.

Pedagogy: Lectures/Visual presentation Role play Critical analysis Assignments/Tests/Quiz/
e-learning

Unit I. The Modern Age 6

- a) Renaissance - Background and Nature
- b) Religious Reforms Movement - Martin Luther

Unit II. The Age of Revolutions 13

- a) The American Revolution - Causes and Consequences
- b) The French Revolution - Causes and Consequences
- c) The Industrial Revolution - Causes and Consequences

Human
Rights

Unit III. Nationalism 13

- a) Unification of Italy
- b) Unification of Germany
- c) Japan - The Meiji Revolution



Unit IV. World War I and Rise of Communism

13

- a) World War I - Causes and Consequences
- b) Paris Peace Settlement; League of Nations
- c) The Russian Revolution - Causes and Consequences

Reference Book:

ENGLISH

1. Carr E.H., International Relations between the two World Wars.
2. Cornwall R.D.: World History in 20th Century, Longman, London, 1976.
3. Dev Arjun and Indira Dev, History of the World, Orient BlackSwan, Delhi, 2009.
4. Gooch V.P., History of Modern Europe.
5. Grant and Temperley, Europe in the 19th and 20 centuries.
6. Hazen, Modern Europe
7. Jain H. and K. Mathur, A History of the Modern World 1500 – 2000 A.D., Jain Prakashan Mandir, Jaipur, 2014.
8. Rao B.V., World History (3rd edition) from early time to AD 2000, NewDawn Press INC, V.S.A. U.K., India, 2006.

मराठी

- १ आचर धर्मा , विसाव्या शतकातील जग , साईनाथ प्रकाशन , नागपूर .
- २ कलकपी ., देशे , आधुनिक जगाचा इतिहास , (भाग १ ि २) , सहिधिस प्रकाशन , पुणे .
- ३ कलकपी ., फडके , आधुनिक जगाचा इतिहास .
- ४ गो . कोतारकर ., आधुनिक जग .
- ५ गार्कव्हिड ., कदम , थोरात , पाटील , आधुनिक जगाचा इतिहास .
- ६ जी. जोशपी ., विसाव्या शतकातील जगाचा इतिहास , विश्व प्रकाशन , नागपूर .
- ७ वि. सुन्न ., आधुनिक जग , साईनाथ प्रकाशन , नागपूर .
- ८ वि. सुन्न ., कोठकर शांता , आधुनिक जग , साईनाथ प्रकाशन , नागपूर .



The syllabus

Course I

Introduction to Human Rights and Duties

Credit: 1

- I) **Basic Concept**
 - a) Human Values- Dignity , Liberty, Equality , Justice, Unity in Diversity, Ethics and Morals
 - b) Meaning and significance of Human Rights Education

- II) **Perspectives of Rights and Duties**
 - a) Rights: Inherent-Inalienable-Universal- Individual and Groups
 - b) Nature and concept of Duties
 - c) Interrelationship of Rights and Duties

- III) **Introduction to Terminology of Various Legal Instruments**
 - a) Meaning of Legal Instrument- Binding Nature
 - b) Types of Instruments: Covenant-Charter-Declaration-Treaty-Convention-Protocol- Executive Orders and Statutes

- IV) **United Nations And Human Rights**
 - a) Brief History of Human Rights- International and National Perspectives
 - b) Provision of the charters of United Nations
 - c) Universal Declaration of Human Rights- Significance-Preamble
 - d) Civil and Political Rights-(Art. 1-21)
 - e) Economic, Social and Cultural Rights-(Art.22-28)
 - f) Duties and Limitations-(Art. 29)
 - g) Final Provision (Art. 30)



Course II

Human rights of vulnerable and disadvantaged groups

Credit: 1

I) General Introduction

- a) Meaning and Concept of Vulnerable and Disadvantaged
- b) Groups, Customary, Socio-Economic and Cultural Problems of
- c) Vulnerable and Disadvantaged Groups

II) Social status of women and children in International and national perspective

- a) Human Rights and Women's Rights –International and National Standards
- b) Human Rights of Children-International and National Standards

III) Status of Social and Economically Disadvantaged people

- a) Status of Indigenous People and the Role of the UN
- b) Status of SC/ST and Other Indigenous People in the Indian Scenario
- c) Human Rights of Aged and Disabled
- d) The Minorities and Human Rights

IV) Human rights of vulnerable groups

- a) Stateless Persons
- b) Sex Workers
- c) Migrant Workers
- d) HIV/AIDS Victims



Course III

Human Rights and Duties in India: Law, Policy, Society and Enforcement

Mechanism

Credit: 1

- I. Human Rights in Indian Context**
 - a) Indian Bill of Rights And Sarvodaya
 - b) Preamble- Fundamental Rights- Directive Principles-Fundamental Duties

- II. Human Rights- Enforcement Mechanism**
 - a) Human Rights Act, 1993
 - b) Judicial Organs- Supreme Court (Art 32) And High Courts(Art 226)
 - c) Human Rights Commission- National and State of Maharashtra
 - d) Commission of Women, children , Minority, SC/ST
 - e) Survey of International Mechanism

- III. Human Rights Violations and Indian Polity**
 - a) Inequalities in society-population-illiteracy-poverty-caste-inaccessibility of legal redress
 - b) Abuse of Executive Power-Corruption-Nepotism and favoritism
 - c) Human Rights and Good Governance
 - d)

- IV. Role of Advocacy Groups**
 - a) Professional Bodies: Press, Media, Role of Lawyers-Legal Aid
 - b) Educational Institutions
 - c) Role of Corporate Sector
 - d) NGO's



Introduction to Cyber Security / Information Security

Syllabus for 'Introduction to Cyber Security / Information Security' program* for students of University of Pune is given below.

The program will be of 4 credits and it will be delivered in 60 clock hours**.

*: Course material for this program will be developed by CINS

** : These clock hours also includes practical sessions and demonstrations wherever required.

SR. NO.	TOPIC	HOURS	MARKS
1	Module 1: Pre-requisites in Information and Network Security	14	25
	Chapter 1: Overview of Networking Concepts	3	
	Chapter 2: Information Security Concepts	3	
	Chapter 3: Security Threats and Vulnerabilities	5	
	Chapter 4: Cryptography / Encryption	3	
2	Module 2: Security Management	13	25
	Chapter 1: Security Management Practices	7	
	Chapter 2: Security Laws and Standards	6	
3	Module 3: Information and Network Security	13	25
	Chapter 1: Access Control and Intrusion Detection	3	
	Chapter 2: Server Management and Firewalls	4	
	Chapter 3: Security for VPN and Next Generation Technologies	6	
4	Module 4: System and Application Security	20	25
	Chapter 1: Security Architectures and Models	5	
	Chapter 2: System Security	5	
	Chapter 3: OS Security	5	
	Chapter 4: Wireless Network and Security	5	



Detail Syllabus for Credit Course for University of Pune

Module 1: Pre-requisites in Information and Network Security

Chapter 1: Overview of Networking Concepts

1. Basics of Communication Systems
2. Transmission Media
3. Topology and Types of Networks
4. TCP/IP Protocol Stacks
5. Wireless Networks
6. The Internet

Chapter 2: Information Security Concepts

1. Information Security Overview: Background and Current Scenario
2. Types of Attacks
3. Goals for Security
4. E-commerce Security
5. Computer Forensics
6. Steganography

Chapter 3: Security Threats and Vulnerabilities

1. Overview of Security threats
2. Weak / Strong Passwords and Password Cracking
3. Insecure Network connections
4. Malicious Code
5. Programming Bugs



6. Cyber crime and Cyber terrorism
7. Information Warfare and Surveillance

Chapter 4: Cryptography / Encryption

1. Introduction to Cryptography / Encryption
2. Digital Signatures
3. Public Key infrastructure
4. Applications of Cryptography
5. Tools and techniques of Cryptography

Module 2: Security Management

Chapter I: Security Management Practices

1. Overview of Security Management
2. Information Classification Process
3. Security Policy
4. Risk Management
5. Security Procedures and Guidelines
6. Business Continuity and Disaster Recovery
7. Ethics and Best Practices

Chapter 2: Security Laws and Standards

1. Security Assurance
2. Security Laws
3. IPR



4. International Standards
5. Security Audit
6. SSE-CMM / COBIT etc

Module 3: Information and Network Security

Chapter 1: Access Control and Intrusion Detection

1. Overview of Identification and Authorization
2. Overview of IDS
3. Intrusion Detection Systems and Intrusion Prevention Systems

Chapter 2: Server Management and Firewalls

1. User Management
2. Overview of Firewalls
3. Types of Firewalls
4. DMZ and firewall features

Chapter 3: Security for VPN and Next Generation Technologies

1. VPN Security
2. Security in Multimedia Networks
3. Various Computing Platforms: HPC, Cluster and Computing Grids
4. Virtualization and Cloud Technology and Security

Module 4: System and Application Security



Chapter 1: Security Architectures and Models

1. Designing Secure Operating Systems
2. Controls to enforce security services
3. Information Security Models

Chapter 2: System Security

1. Desktop Security
2. email security: PGP and SMIME
3. Web Security: web authentication, SSL and SET
4. Database Security

Chapter 3: OS Security

1. OS Security Vulnerabilities, updates and patches
2. OS integrity checks
3. Anti-virus software
4. Configuring the OS for security
5. OS Security Vulnerabilities, updates and patches

Chapter 4: Wireless Networks and Security

1. Components of wireless networks
2. Security issues in wireless

