

Kavayitri Bahinabai Chaudhari North Maharashtra University, Jalgaon

New Syllabus (CBCS Pattern) W.E.F June 2020

TYBA Sem.: V

Gg. 351 (DSC 1E) Environmental Geography

Total Marks: 60

Credit Points: 03

Total Clock Hours: 45

Objectives:

1. To create the environmental awareness amongst the students.
2. To acquaint the students with fundamental concepts of Environmental Geography.
3. To aware the students about the processes and patterns in the natural environment.
4. To acquaint the students with potentials of Environmental Geography.
5. To aware the students about use of resources with prudence.
6. To acquaint the students with different environmental policies.

Units	Topic	Sub Topics	Clock Hours
1	Introduction to Environmental Geography	1.1) Introduction to Environment: a) Meaning and Concept b) Environmental Geography: Definitions, Nature and Scope of Environment Geography 1.2) Environmental Approaches : a) Environmental Deterministic Approach b) Possibility Approach c) Ecological Approach	10
2	Ecosystem and Man and Environment Relationship	2.1) Ecosystem: a) Meaning and Concept b) Structure & Components of Ecosystem: i) Abiotic ii) Biotic c) Functions of Ecosystem :i)Nutrient Cycles a) Carbon Cycle b) Nitrogen Cycle i i)Energy Flow a)Food Chain b) Food web 2.2) Human - Environment Relationship : Human life in- i) Equatorial Region ii)Mountainous Region iii) Coastal Region	12

3	Biodiversity and Environmental Problems	<p>3.1) Biodiversity: Definitions and Types / Levels of Biodiversity a) Genetic Diversity b) Species Diversity c) Ecosystem Diversity</p> <p>3.2) Conservation of Biodiversity: In –situ and Ex-situ conservation of biodiversity</p> <p>3.3) Major Environmental Problems: Causes and adverse effects of the following i) Unseasonal rainfall, ii) Thunderstorms iii) Biodiversity losses iv) Solid waste v) Liquid waste and vi) Air Pollution</p> <p>3.4) Environmental Management regarding Pollution Control- a) Air b) Water</p>	12
4	Environmental Policy	<p>4.1) National Environmental Policy (NEP): Introduction and Objective</p> <p>4.2) Initiatives or Actions Regarding Policy: i) Land Degradation ii) Forest and Wildlife Conservation</p> <p>4.3) Environmental Protection Efforts: - Developing and Developed Countries.</p>	11

Unit No.	Weightage of Marks
1	12
2	18
3	18
4	12
University Assessment	60
College Assessment	40



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New Syllabus (CBCS Pattern) W.E.F June 2020

TYBA Sem.: VI

Gg. 365 (GE 1B): SUSTAINABILITY AND DEVELOPMENT

Total Marks: 60

Credit Points: 03

Total Clock Hours: 45

Objectives:

1. It brings to attention the Students about the issues which surround Sustainable Development, including its Principles, Processes and Concepts, its Deciding factors, and Potentials it holds.
2. Students will get the information and Importance of the MDGS.
3. Students will be aware about National Environmental Policy.

Sr. No.	Topic	Sub Topics	Clock Hours
1	INTRODUCTION	1.3 Definition of Sustainability 1.4 Components of Sustainability a)Environmental Sustainability ✓ b)Economic Sustainability c)Social Sustainability	10
2	MILLENNIUM DEVELOPMENT GOALS	2.1 Meaning of Millennium Development Goals 2.2 Millennium Development Goals – Report 2015 (UN) 2.3 India and the MDGS 2.4 MDGS achievement and failures 2.5 Effectiveness of MDGS	12
3	SUSTAINABLE DEVELOPMENT	3.1 Definition and Nature of Sustainable Development 3.2 Need of Sustainable Development 3.3 Sustainable Development Goals (SDGS 2015) 3.4 Sustainable Development in different Ecosystem a) Agriculture b) Forest 3.5 Role of Individual and Community in Sustainable Development 3.6 Clean Development Mechanism (CDM)	12
4	INCLUSIVE DEVELOPMENT	4.1 Role of Higher Education in Sustainable Development 4.2 Health and Sustainable Development 4.3 Poverty and Diseases and Sustainable Development 4.4 Policies and Global Cooperation for Climate Change Control 4.5 National Environmental Policy 4.6 Rio + 20	11

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New Syllabus (CBCS Pattern) W.E.F June 2020

TYBA Sem.: VI

Gg. 361 (DSC 1F) Population Geography.

Total Marks: 60

Credit Points: 03

Total Clock Hours: 45

Objectives;

1. Understand the components of population change.
2. Develop skills to use population information in the planning process.
3. Understand the impact of planning activities on population size, composition, and distribution
4. Population is an important resource. The development of any nation is depends on human resource. It is a prime deity to acquaint with the human resource of the nation.
5. To understand the recent problems of population in the world as well as nation.

Sr. No.	Topic	Sub Topics	Clock Hours
1	Introduction to Population Geography & Population Data	1.1 Definitions and Meaning of Population Geography 1.2 Nature and Scope of Population Geography. 1.3 a) Need and Types of Population Data b) Sources of Population Data – i) Census ii) National Sample Survey iii) Vital Registration	09
2	Distribution of Population	2.1 Growth of Population in India 1951-2011. 2.2 Distribution of Population – World and India(2011). 2.3 Factors affecting the distribution of Population – a) Physical- i) Topography ii) Climate iii) Water iv) Soil v) Forest b) Socio-Cultural – i) Religion ii) Agriculture iii) Transportation i v) Education v) Government policies	12
3	Composition of Population and Population	3.1 Composition of Population : a) Age Composition (Meaning and Factors affecting age Composition, Age Pyramid) b) Sex Composition in India	12

	Theories	c) Decreasing Sex ratio and its impact d) Literacy in India (1951 to 2011) 3.2 Population Theories : a) Malthusian Theory of Population Growth b) Demographic Transition Model	
4	Population Problems in India & Population Policy	4.1 Problems of Population in India and Its remedial measures a) Over Population b) Brain Drain c) Excess Urbanization 4.2 National Population Policy in India - 2000	12

Sr. No.	Unit No.	Weightage of Marks
1	1	14
2	2	16
3	3	16
4	4	14
University Assessment		60
College Assessment		40

REFERENCES:

- 1) Chandana,R.C. and Janjit S. S.(1980): Introduction to Population Geography ,Kalyani Publishers,New Delhi
- 2) Clarke J.I.(1977):Population Geography and Developing Countries ,Robert Maxwell, MC.
- 3) Masjid Husain (1991) Anmol Publication Ltd. New Delhi
- 4) Mohammand Izhar Hussan : Population Geography. Rawat Publication
- 5) Sawant S.B. and Athawale A.S. (1994) : Population Geography , Mchata Publishing House , Pune
- 6) V.J.Patil And S.V.Dhake : Loksankhya Bhugol (Marathi Medium) , Prashant Publication , Jalgaon
- 7) Ahirro, Alizad and others : Loksankhya Bhugol (Marathi Medium)
- 8) V.T. Gharpure : Loksankhya Bhugol (Marathi Medium) Pimpalpure Publication , Satara.
- 9) T.N. Goplap , Nishikant : LoksankhyaBhugol (Marathi Medium) Prashant Publication, Jalgaon
- 10) A.B.Sawadi : Loksankhya Bhugol (Marathi Medium) The Savadis Mega Geographical Series



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Jalgaon**

Under faculty of Science and Technology

S.Y.B.Sc. SEMESTER- III

New Syllabus (CBCS Pattern)

(with effect from: June 2019)

Gg. 301 (DSC) Paper – I: Environmental Geography

Total Credits – 2.

Total Hours – 30


Internal Marks - 40

External Marks – 60

Objectives:-

1. To create the environmental awareness amongst the students.
2. To acquaint the students with fundamental concepts of Environmental Geography.
3. To aware the students about the processes and patterns in the natural environment.
4. To acquaint the students with past, present and future utility and potentials of Environmental Geography at regional, national and global levels.
5. To make aware the students about the judicious use of resources.

Unit No.	Topic	Sub-topics	Hours
I	Introduction to Environmental Geography	I) Introduction to Environment- Meaning, Concept a) Types of Environment: i) Natural(Physical) ii) Biotic II) Environmental approaches a) Deterministic b) Possibilistic c) Ecological III) Ecosystem- a) Meaning and Concept b) Structure - Components i) Abiotic ii) Biotic c) Function i) Nutrient Cycling a)Carbon Cycle b)Nitrogen Cycle ii)Energy Flow a)Food Chain b)Food Web	8


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New Syllabus (CBCS Pattern) W.E.F June 2020

TYBA Sem.: VI

Gg. 361 (DSC 1F) Population Geography.

Total Marks: 60

Credit Points: 03

Total Clock Hours: 45

Objectives;

1. Understand the components of population change.
2. Develop skills to use population information in the planning process.
3. Understand the impact of planning activities on population size, composition, and distribution
4. Population is an important resource. The development of any nation is depends on human resource. It is a prime deity to acquaint with the human resource of the nation.
5. To understand the recent problems of population in the world as well as nation.

Sr. No.	Topic	Sub Topics	Clock Hours
1	Introduction to Population Geography & Population Data	1.1 Definitions and Meaning of Population Geography 1.2 Nature and Scope of Population Geography. 1.3 a) Need and Types of Population Data b) Sources of Population Data – i) Census ii) National Sample Survey iii) Vital Registration	09
2	Distribution of Population	2.1 Growth of Population in India 1951-2011. 2.2 Distribution of Population – World and India(2011). 2.3 Factors affecting the distribution of Population – a) Physical- i) Topography ii) Climate iii) Water iv) Soil v) Forest b) Socio-Cultural – i) Religion ii) Agriculture iii) Transportation i v) Education v) Government policies	12
3	Composition of Population and Population	3.1 Composition of Population : a) Age Composition (Meaning and Factors affecting age Composition, Age Pyramid) b) Sex Composition in India	12

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S.Y.B.Sc. SEMESTER- IV

New Syllabus (CBCS Pattern)

(with effect from: June 2019)

Gg. 401 (DSC) Paper I : Human Geography

Total Credits – 2

Total Hours – 30

Internal Marks - 40

External Marks – 60

Objectives:

1. This course is to acquaint the students with the nature of man-environment relationship and human capability.
2. To adopt and modify the environment under its varied conditions from primitive life style to the modern living;
3. To identify and understand environment and population in terms of their quality and spatial distribution pattern.
4. To comprehend the contemporary issues facing the global community.

Unit No	Topic	Sub -topic	Hours
1	Introduction to Human geography	A) A Definition, Nature and Scope B) Branches of Human Geography C) Relationship between Man and Environment D) Approaches of Human Geography	5
2	Human Races and Religion	A) Definition of Human Race B) Physical basis of racial groups C) Classification of world Races – Caucasoid, Mongoloid, Negroid and Australoid D) Definition of Religion and Major Religious system – Judaism, Islam, Christianity, Buddhism and Hinduism	10
3	Population	A) Factors affecting on the distribution of Population – Physical, Socio – Cultural and Demographic. B) Worlds population distribution C) Malthusian theory of Population growth D) Demographic transition theory	5
4	Settlements	A) Definition and types of rural settlements - Compact, Semi Compact and Dispersed. B) Patterns of rural settlements – Circular, Radial, Elongated, Square and Amorphous C) Definition and functional classification of Urban settlements – Administrative, Defence, Culture, Production and Communication. D) Recent Trends and Patterns of Urbanization in India.	10
Total			30

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S.Y.B.A. - CBCS Pattern

Proposed Syllabus w.e.f. June-2019

SEMISTER-III&IV

1. Paper course no. DSC Eco 231 C & DSC Eco 241 D
2. Paper title: Indian Economy Since 1980-I&II
3. Credit-2 Total Periods -60/ Clock Hours 45
4. External Marks 60+Practical marks 40=Total Marks 100
5. Objectives of paper :
 1. To enable students to have understanding the various issues of Indian Economy.
 2. To develop the analysing capability in the context of current Indian Economic Problems.
 3. To able the students for appearing the MPSC, UPSC and other competitive Examinations.

SEMISTER-III

DSC Eco 231 C - INDIAN ECONOMY SINCE 1980-I

1. **Indian Economy and Human Resources in India.** (Periods-20)
 - 1.1. Basic Features of Indian economy.
 - 1.2. India's recent position in the world Economy
 - 1.3. Meaning of Human Resource.
 - 1.4. Population in India-Size and Growth.
 - 1.5. Causes of the rapid growth of population.
 - 1.6. Problems of over population.
 - 1.7. Recent National Population Policy.
 - 1.8. Poverty and Unemployment.
 - 1.8.1. Poverty- Meaning and types.
 - 1.8.2. Measurements of Poverty in India
 - 1.8.3. Unemployment- Meaning and types.
 - 1.8.4. Policies for removing Unemployment and poverty.
2. **Infrastructure in India.** (Periods-20)
 - 2.1. Irrigation-sources, water management.
 - 2.2. Energy-sources, Crises of Energy.
 - 2.3. Transport-Types of Transport,
 - 2.4. Problems of transports.
 - 2.5. Communication and Information Technology-Types of communication.
 - 2.6. Role of Information Technology in Indian Development.
3. **Basic Issues in Agriculture.** (Periods-20)
 - 3.1. Role of Agriculture in Indian Economy.
 - 3.2. Nature of Indian Agriculture.
 - 3.3. Recommendations of Swami Nathan Commission on Agriculture.
 - 3.4. Agricultural Finance-Importance and Sources.
 - 3.5. Agricultural Marketing-Defects and Reforms.
 - 3.6. Farmers Suicides- Causes and Measures

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NORTH MAHARASHTRA UNIVERSITY, JALGAON
Syllabus of F. Y. B. A. History
Semester First
Choice Based Credit System, Semester System

Core Course-(HIS – DSC A 1)
HISTORY OF INDIA (1857-1950)

Marks 60

Period 52

Credits 03

Chapter 1: Socio-religious reform movements

(Credits :01, Marks:20)

- Brahmo Samaj, Prathana Samaj, Ramkrishna Mission, AaryaSamaj
- Wahabi, Deoband, Aligarh and Singh Sabha Movement
- Debates around Gender
- Caste ; Sanskritising and anti Brahminical trends

Chapter 2: Political Trends up to 1919


(Credits : 01, Marks:20)

- Political Ideology and Organization
- Formation of Indian National Congress
- Moderates and Extremists
- Swadeshi Movement
- Revolutionaries

Chapter 3: Nationalism and Social Groups: Interfaces

(Credits :01, Marks:20)

- Landlords, Professionals and Middle Classes
- Peasants
- Tribal
- Labour
- Dalit
- Women


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N.M.U. JALGAON
CHOICE BASED CREDIT SYSTEM
F.Y.B.A. POLITICAL SCIENCE
DISCIPLINE SPECIFIC CORE COURSE (4)

With form June - 2018

C.C.POL - G - 101 A, Paper I - Indian Constitution

DSC - A - I

Credit : 03

Periods - 60

Marks - 60

Semester - I

Course Rational : - This paper is a basic introduction to the process, concept and working of Indian constitution. India Constitution is a social document. This paper acquaints students with the constitution, design of state structure institutions and their actual working over time. The Indian constitution accommodates conflicting impulses of liberty and justice, territorial decentralization and a strong union for instance within itself. The paper traces the embodiment some of these conflicts in constitutional provisions and shows how thus have played out in political practices in further encourages study of state in situation in their mutual interaction with the larger extra constitutional environment & recent trends in Indian democracy.

Course Content

	Periods	Marks
Chapter:1 Indian Constitution & Indian Federal System	20	20
A. Indian Constitution:Historical background, Making Process, Preamble,Salient features of Indian Constitution		
B. Indian Federal System : Structure,Nature , Features of Indian Federal System		
Chapter : 2 Fundamental Rights, Duties & Directive Principals	20	20
A. Fundamental Rights & Duties : Meaning, Scope, Nature & Importance of fundamental Rights & Duties, Difference between Rights & Duties		
B. Directive Principals : Meaning, Scope, Types, Nature and Importance of Directive Principles , Differences between Fundamental Rights and Directive Principles.		
Chapter :3 Constitutional Bodies And Amendment Process	20	20
A. Constitutional Bodies : National Minority Commission National Human Rights Commission National Institution for Transforming India		
B. Amendment Process: Meaning, Importance Provision in Indian Constitution Major Amendments – 73, 74, 86,101.		


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॥ अंतरी पेटवू ज्ञानज्योत ॥
उत्तर महाराष्ट्र विद्यापीठ, जळगाव

Choice Based Credit System
शैक्षणिक वर्ष 2018-2019 पासून लागू

प्रथम वर्ष कला
F. Y. B. A.
Discipline Specific Core Course (DSC)
मराठी

DSC A – वाङ्मयीन मराठी

विशिष्ट वाङ्मयप्रकारांचा अभ्यास

सत्र पहिले

MAR G – 111(A)

DSC A 1 – विशिष्ट वाङ्मयप्रकाराचा अभ्यास—कथा

- पुस्तक : 'निवडक दहा कथा' – हमीद दलवाई, साधना प्रकाशन, पुणे. जुलै 2018.

टीप - सदर पुस्तकात 'लाट' (हमीद दलवाई, मौज प्रकाशन गृह, मुंबई. चौथी आवृत्ती : 25 मे 2016) या कथासंग्रहातील 'छप्पर', 'कफनचोर', 'बेकार (पण कलावंत) माणसाची गोष्ट', 'माणूस आणि गाढव', 'खुदा हाफिज' या पाच कथा आणि 'जमीला जावद आणि इतर कथा' (हमीद दलवाई, साधना प्रकाशन, पुणे. दुसरी आवृत्ती : 14 जुलै 2017) या कथासंग्रहातील 'बाबूखानचा ग्रामोफोन', 'दहा रुपयांची नोट', 'आहमद', 'कोल्हा आणि कोकरू', 'एका अव्यवहारी अपूर्णाकाची गोष्ट' या पाच कथा अशा एकूण दहा कथा समाविष्ट आहेत.

- अभ्यासक्रमाची उद्दिष्टे -

1. कथा या वाङ्मयप्रकाराचे स्वरूप आणि त्याची वैशिष्ट्ये यांचे आकलन करून घेणे.
2. कथारचनेच्या प्रमुख घटकांचे आकलन करून घेणे.
3. कथेच्या महत्त्वपूर्ण अशा प्रकारांचा परिचय करून घेणे.
4. मराठी कथेची वाटचाल ठळक टप्प्यांच्या आधारे जाणून घेणे.



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5. हमीद दलवाई यांच्या निवडक दहा कथांच्या कथानकाचे आकलन करून घेणे आणि त्यातील व्यक्तिचित्रणाची वैशिष्ट्ये जाणून घेणे.
6. हमीद दलवाई यांच्या निवडक दहा कथांमधील प्रसंगवर्णने आणि वातावरणनिर्मिती यांचे विशेष जाणून घेणे.
7. हमीद दलवाई यांच्या निवडक दहा कथांतील संघर्ष, निवेदनशैली, भाषाविशेष या घटकांचे आकलन करून घेणे.

घटक विश्लेषण —

एकूण तीन (03) श्रेयांक

क्र.	घटक	श्रेयांक	तासिका (घड्याळी)
1.	अ) कथा या वाङ्मयप्रकाराची ओळख	01	15
	• कथा : संकल्पना व स्वरूप		
	• कथेचे घटक — कथानक, व्यक्तिचित्रण, प्रसंगवर्णन, संघर्ष, निवेदनशैली व भाषा		
	• अन्य वाङ्मयप्रकारांहून कथा या वाङ्मयप्रकाराचे निराळेपण		
	• कथेच्या प्रमुख प्रकारांचा परिचय — स्फुट गोष्ट, लघुकथा, दीर्घकथा		
	• मराठी कथेच्या वाटचालीचा परिचय		
2.	अ) हमीद दलवाई यांच्या निवडक दहा कथांची कथानके आणि त्या कथांमधील व्यक्तिचित्रणे	01	15
	ब) हमीद दलवाई यांच्या निवडक दहा कथांमधील प्रसंगवर्णने व वातावरणनिर्मिती		
3.	अ) हमीद दलवाई यांच्या निवडक दहा कथांची निवेदनशैली व भाषाविशेष	01	15
	ब) हमीद दलवाई यांच्या निवडक दहा कथांमधील जीवनचित्रण आणि संघर्ष		
	एकूण श्रेयांक व तासिका	03	45



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Prerequisite-

1. The teachers are suggested to inform the students to read more about the story writers and the poets.
 2. The teachers can take help of video clips to explain the stories and poems to the students.
 3. The teachers can inspire the students to listen the audio clips of the poems and stories available on the net.
-

**Core Course- Discipline Specific Course- English for F.Y. B.A.
Title of the Paper- Reading Literature: Short Stories and Poems**

3 Credits

External- 60 marks
Internal- 40 marks

Objectives-

1. To introduce the students with the idea of English literature
2. To acquaint the students with the broader genres of literature in general
3. To acquaint the students with the particular genres of literature- short story and poem
4. To develop understanding of literature and reading skill of the students through literature.

Sem. I – DSC 1 (A) Reading Literature: Short Stories

Unit 1- Short Story- Definitions and Nature

Unit 2- Types of short story- fables, parables, character sketch, anecdotes

Unit 3- Aspects of short story

Unit 4- Short story-



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1. 'The Gift of the Magi' - O' Henry
2. 'The Lost Child' - Mulk Raj Anand
3. 'The Happy Prince' - Oscar Wild
4. 'An Astrologer's Day' - R.K. Narayan

Sem. II- DSC 1 (B) Reading Literature: Poems

Unit 1 - Poetry- Definitions and elements

Unit 2- Types of Poetry- Lyric, Sonnet, Elegy, Ode

Unit 3- Poems- Lyrics and sonnets-

1. 'Bright Star Would I steadfast as Thou Art' - John Keats
2. 'Blow, Blow Thou Winter Wind' - William Shakespeare
3. 'On His Blindness' - John Milton
4. 'Death Be Not Proud' - John Donne

Unit 4 - Elegy and Ode-

1. 'Elegy Written in Country Church Yard' - Thomas Gray
2. 'On My First Sonne' - Ben Johnson
3. 'Ode to the West Wind' - P.B. Shelley
4. 'Dejection; An Ode' - S. T. Coleridge

Questions Paper Format for Sem. I-

- Q1. MCQ on Unit 1 and 2- 12 marks
- Q2. MCQ on Unit 2 and 3- 12 marks
- Q3. Write answers in 80 words (any 2 out of 4) on short stories- 12 marks
- Q4. Write answers in 80 words (any 2 out of 4) on short stories- 12 marks
- Q5. Write Short notes on short stories (any 4 out of 6) - 12 marks



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Semester III: Physics paper IV
PHY 304: Skill Enhancement Course I (SEC-I)

Renewable energy and Energy Harvesting (Credits: 02) Theory: (30 L, 60M)

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

Unit 1. Conventional and Non-conventional energy Sources: Fossil fuels and Nuclear Energy, their limitation, need of renewable energy, non-conventional energy sources. (02L, 04M)

Unit 2 . Solar Energy

Solar energy, its importance, storage of solar energy, solar pond, non convective solar pond, applications of solar pond and solar energy, solar water heater, flat plate collector, solar distillation, solar cooker, solar green houses, solar cell, absorption air conditioning. Need and characteristics of photovoltaic (PV) systems, PV models and equivalent circuits, and sun tracking systems. Solar energy utilization by Solar roof panels. (06 L,12 M)

Unit 3. Ocean, geothermal, Hydro and Biomass energy resources.

a. **Ocean Energy:** Ocean Energy Potential against Wind and Solar, Wave Characteristics and Statistics, Wave Energy Devices. (03 L,06M)

Tidal energy, Tide characteristics and Statistics, Tide Energy Technologies, Ocean Thermal Energy, Osmotic Power. (02 L,04M)

b. **Geothermal Energy:** Geothermal Resources, Geothermal Technologies. (02 L,04M)

c. **Hydro Energy:** Hydropower resources, hydropower technologies, environmental impact of hydro power sources. (02 L, 04M)

d. **Biomass energy:** biomass, biochemical conversion, biogas generation, Ocean biomass (02L,04M)

Unit 4. Energy Harvesting:

a. **Wind Energy harvesting:** Fundamentals of Wind energy, Wind Turbines and different electrical machines in wind turbines, Power electronic interfaces, and grid interconnection topologies (03 L,06M)

b. **Piezoelectric Energy harvesting:** Introduction, Physics and characteristics of piezoelectric effect, materials and mathematical description of piezoelectricity, Piezoelectric parameters and modeling piezoelectric generators, Piezoelectric energy harvesting applications, Human power (04 L,08M)

c. **Electromagnetic Energy Harvesting:** Linear generators, physics mathematical models, recent applications, (02 L,04M)

d. Carbon captured technologies, cell, batteries, power consumption (01 L,02M)

e. Environmental issues and sustainability of renewable energy sources., (01 L,02M)

Demonstrations and Experiments

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

Reference Books:

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


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Sem. -V

T.Y.B.Sc. Chemistry

Course No:- CH-356(B)

Subject: Environmental Chemistry

Chapter 1: Atmosphere and Air Pollution

(M-14 L-14)

- 1.1 Composition and structure of atmosphere
- 1.2 Chemical and photochemical reactions in atmosphere
- 1.3 Chemistry of O₃, SO_x, NO_x and chlorides in atmosphere
- 1.4 Primary air pollutants
- 1.5 Particulate matter: Inorganic and Organic
- 1.6 Smog: Reducing and Photochemical
- 1.7 Mechanism of ozone depletion
- 1.8 Stability and reactions of CFCs
- 1.9 Harmful effects of CFCs
- 1.10 CFCs substitutes

Ref. 1, Ref. 3, Ref. 4 (Relevant Pages)

Chapter 2: Hydrosphere and water pollution

(M-12 L-12)


- 2.1 Water resources •
- 2.2 Microbially mediated aquatic reactions, nitrogen cycle, iron and manganese bacteria
- 2.3 Classification of water pollutants •
- 2.4 Organic and Inorganic pollutants: Pesticides, Detergents, Eutrophication, Marine, Oil, Acid mine drainage, remedial measures and sediments
- 2.5 Thermal pollution •
- 2.6 Water quality parameters: pH, D.O. (Winkler Method), COD, TOC, Total hardness, free chlorine.

Ref. 1, 2, 3, and 4 (Relevant Pages)

Chapter 3: Water treatment and effluent management

(M-12 L-12)

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Course Objectives:

- There is rising concern since 1970 about environmental pollution, depleting resources, climate change, ozone depletion, legislation which is getting stringent with strict environmental laws, rising cost of waste deposits, health concern and so on.
- We are facing the challenge to work towards sustainable development. Since 1990, today's society is moving towards becoming more and more environmentally conscious.
- Green chemistry has been introduced in 1990 for overall sustainable development against the environmental concerns.
- Green chemistry is not a new branch of chemistry, but it is a new way chemistry, which should be practiced regularly.
- Innovations and applications of green chemistry in education has helped companies not only to gain environmental benefits but at the same time to achieve economic and societal goals also.
- This is possible because these undergraduate students are ultimate scientific community of tomorrow.

Learning Outcomes:

- With this course, the graduate students will be able to understand the twelve principles of green chemistry that will help to build the basic understanding of toxicity, hazards and risk of chemical substances.
- The course will help to understand stoichiometric calculations and relate them to green chemistry metrics. The students will learn about atom economy and understand its importance over percentage yield.

- The students will learn to design safer chemicals, products and processes that are less toxic than the conventional chemistry, understand significance of catalysis, use of renewable feed stock, renewable energy sources, importance of green solvents, etc.
- The course will train the students to appreciate green chemistry and boost the students to think and develop the skills to innovate and search for the solutions to environmental problems.
- Green chemistry is only way of future chemistry to ensure sustainability with absolute zero waste. The success stories and real-world cases will motivate the young generation to practice green chemistry.

UNIT 1. Introduction to Green Chemistry

(L-04, M-04)

Definition of Green Chemistry. Drawbacks of conventional chemistry. Need of Green Chemistry, Minamata Disease. Goals of Green Chemistry

Ref:1 Relevant Pages

Ref:6 Relevant Pages

UNIT 2. Principles of Green Chemistry and Designing a Chemical Synthesis

(L-12, M-18)

Twelve principles of Green Chemistry, role of Paul T. Anastas, importance of green chemistry with examples: Prevention of waste/by-products, Atom economy, Prevention or Minimization of hazardous products, Designing safer chemicals, Energy requirements for synthesis, Selection of suitable solvents, Selection of starting materials, Use of protecting groups, Use of catalysts, Designing of biodegradable products, Prevention of chemical accidents, Strengthening of analytical techniques, industrial safety.

Ref:1 Relevant Pages

Ref:2 Relevant Pages

UNIT 3. Techniques in Green Chemistry

(L-12, M-16)

a) Microwave assisted synthesis- Introduction and importance, Applications- Esterification, Fries rearrangement, Orthoester Claisen Rearrangement, Diels-Alder Reaction, Hofmann Elimination.

b) Ultrasound assisted reactions- Introduction and importance, Application- Esterification, saponification, aromatic substitution reactions, alkylation, oxidation, reduction.

Ref:1 Relevant Pages

Ref:3 Relevant Pages

UNIT 4. Solvents, Reagents and Catalysts in Green Chemistry (L-14, M-18)

- a) Solvents- Introduction and Importance, Examples-Michael Addition in water, Bis-indolyl methane in ionic liquid, tetrazole synthesis in deep eutectic solvent.
- b) Reagents- Introduction and Importance, Examples- Alkylation using dimethyl carbonate, Solid phase peptide synthesis using Merrifield reagent.
- c) Catalysts- Introduction and Importance, Examples- Reduction of carbonyl group using Baker's yeast, Esterification using Lipase enzyme, Zeolite clay and Cyclodextrin.

Ref:1 Relevant Pages

Ref 2: Relevant Pages

UNIT 5. Future Trends in Green Chemistry (L-03, M-04)

Biomimetic, Photochemical reactions, Multifunctional Reagents, Green chemistry in sustainable development.

Ref:1 Relevant Pages

Ref 3: Relevant Pages

Ref 5: Relevant Pages

Reference Books:

1. *New Trends in Green Chemistry*, V.K. Ahluwalia and M.R. Kidwai: Anamalaya Publishers (2005).
2. *Green Chemistry- Theory and Practical*, P.T. Anastas and J.K. Warner: Oxford University Press (1998).
3. *Introduction to Green Chemistry*, A. S. Matlack: Marcel Dekker (2001).
4. *Real-World Cases in Green Chemistry*, M.C. Cann & M.E. Connely: American Chemical Society, Washington (2000).
5. *Introduction to Green Chemistry*, M. A. Ryan & M. Tinnesand, American Chemical Society, Washington, (2002).
6. *Silent Spring*, Rachel Carson, Houghton Mifflin Company, (1962).

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Kavayitri Bahinabai Chaudhari North Maharashtra University, Jalgaon
Faculty of Commerce and Management

B.Com. I (W.E.F.: June – 2022)

Paper: 105 – Computing Skills

SEMESTER – I

Total Lecturers: 60

Total Marks: 100 (Internal Continuous Assessment: 40 Marks, External Theory Exam: 40 Marks, External Practical Exam: 20 Marks)

Objectives –

- To develop essential computing skills
- To train in using Microsoft Office Software
- To prepare in using key Google Services skills

Instructions as to study and examinations

- Preparation of Practical file as per list of practical and topics from syllabus is essential

Course Outcomes

- Students will be able to use essential computing skills
- Students will use Microsoft Office tools – Word, Excel and Power Point
- Students will be ready to use key Google Services skills

Unit 1 : Essential Computing Skills – I

Lectures: 10

- 1.1 Basic Photo Editing Skills – Editing Using Microsoft Office Picture Manager and Paint
- 1.2 Fast and Accurate Typing Skill enhancement using – Rapid Typing
- 1.3 Speak and Type on Mobile using Google Voice Typing
- 1.4 Online Typing in regional language – Marathi & Hindi
- 1.5 Grammar checking of document using free grammar checking tools
- 1.6 Plagiarism checking of document using free plagiarism checking tools

Unit 2 : Essential Computing Skills – II

Lectures: 10

- 2.1 Working with Video Conferencing Tools – Zoom/Google Meet etc.
- 2.2 Using ZIP files –ZIP and UNZIP operations
- 2.3 Basic Computer Hardware usage and troubleshooting Skills with respect to printer, monitor, keyboard, mouse and web camera. Using Pen drive.
- 2.4 Downloading and installing software: 1. Download and install tally prime software from tally solutions website 2. Install Printer Drivers
- 2.5 Using e-Commerce and M-Commerce Websites / Mobile Applications
- 2.6 Using UPI for online payments

Unit 3 : Microsoft Office Skills – I

Lectures: 10

- 3.1 MS – Word
 - Creating word documents with formatting features
 - Using Tables in word document
 - Using Lists in word document
 - Using Mail Merge to create Certificate
 - Converting Word file to pdf and pdf file to word.
- 3.2 -MS – Power Point
 - Creating Power Point Presentation with designing features
 - Adding Audio Visual effects to presentation
 - Creating Video File using Power Point

Unit 4 : Microsoft Office Skills – II

Lectures: 10

- 4.1 Creating Excel files for various business applications
- 4.2 Arranging Rows and Columns , adding design effects

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SEMESTER IV

✓ **Paper: 406 (b) – Consumer Protection & Business Ethics**

60+40 Pattern: External Marks 60, Internal Marks 40. Maximum Total Marks: 100

Required Lectures: 60

Objectives –

1. To recognize the Business Ethics.
2. To acquaint with Moral Issues in Business Ethics.
3. To understand areas of Business Ethics.
4. To know Organizational Ethics.

Outcomes

1. Identify causes for complaint
2. Apply legislation
3. Present oral or written complaint File and record details
4. Carry out simple research into consumer products.

Utilities

1. To stop business malpractices
2. To improve customers confidences
3. To survive businesses
4. To safeguard consumers rights
5. To protect stakeholders

Unit 1. Introduction to Ethics

- 1.1 Meaning and Concept
- 1.2 Nature of Ethics
- 1.3 Moral and Ethics
- 1.4 Types of Ethics
- 1.5 Importance of Ethics

[L-10][M-10]

Unit 2. Business Ethics

- 2.1 Meaning and Nature
- 2.2 Importance of Ethics in Business
- 2.3 Types of Business Ethics
- 2.4 Role in various types of Business Structures

[L-10][M-10]

Unit 3. International Business Ethics

- 3.1 Nature and Necessity
- 3.2 Developing Ethics in Global Economy
- 3.3 Business Ethics and the Financial World
- 3.4 Business Ethics and Business Development
- 3.5 Role of Business Ethics in Building a Good Society

[L-10][M-10]

Unit 4. Areas of Business Ethics

- 4.1 Meaning of Functional Ethics
- 4.2 Types of Ethics according to Functions of Business
- 4.3 Marketing Ethics Foreign
- 4.4 Trade Ethics and Ethics relating to Copyrights.

[L-10][M-10]


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SEMESTER III

Paper: 306 (b) – Consumer Protection & Business Ethics

60+40 Pattern: External Marks 60, Internal Marks 40. Maximum Total Marks: 100

Required Lectures: 60

Objectives –

1. To know the Consumer Movement.
2. To understand the Role of Voluntary Consumer Organisation.
3. To review the Consumer Protection Act.
4. To know the Standard of Weight and Measures Act.

Outcomes

1. Identify causes for complaint
2. Apply legislation
3. Present oral or written complaint File and record details
4. Carry out simple research into consumer products.

Utilities

1. To stop business malpractices
2. To improve customers confidences
3. To survive businesses
4. To safeguard consumers rights
5. To protect stakeholders

Unit 1. Introduction to Consumer

- 1.1 Consumer: Meaning & Concept, Features
- 1.2 Consumerism: Meaning, Objectives, Benefits - Consumerism in India
- 1.3 Three Dimensional Concept of Consumer.
 - a) Consumer as a King
 - b) Consumer as a King-pin of democracy
 - c) Consumer as a Capital
- 1.4 Rights and Responsibilities of Consumers

[L-10][M-10]

Unit 2. Consumer Movement

- 2.1 Consumer Movement: Meaning, Importance, Scope, Features, Need, Objectives
- 2.2 Role of Consumer Movement, Government and Consumer Movement
- 2.3 Barriers in Development of Consumer Movement in India
- 2.4 Future of Consumer Movement in India

[L-10][M-10]

Unit 3. Voluntary Consumer Organization

- 3.1 Origin and Importance
- 3.2 Functions of VCO's
- 3.3 Limitations of Voluntary Consumer Organization.
- 3.4 Role of Voluntary Consumer Organization in Controlling Objectionable Advertisement
- 3.5 Challenges before VCO's

[L-10][M-10]

Unit 4. Problems of Consumer

- 4.1 Causes and Nature of Consumers Problem
- 4.2 Problems of Rural and Urban Consumers
- 4.3 Individual and Collective Problems
- 4.4 Problems Related to Goods and Deficiencies in Services
- 4.5 Problem Solving through VCO's and Legal Procedure

[L-10][M-10]

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SEMESTER III

Paper: 303 Business and Tax Laws ✓

60+40 Pattern: External Marks 60, Internal Marks 40. Maximum Total Marks: 100

Required Lectures: 60

Objectives:-

1. Learn The Law & Legal Principals of Contract Act 1872.
2. Draft legal documents including partnership deed & service tax returns.
3. Understand the basic structure, rules & powers of consumer protection act.
4. To know the provision regarding strikes and lock outs under industrial dispute act.
5. Be acquainted with development of patents and environment protection act.
6. Students to gain a better underrating of the negotiable instrument act.
7. Learn how to analysis the legal constraints on business.
8. Be able to face the problems on various sides of Business and Tax Law.

Utilities:

1. To Lay foundation for future studies.

Learning Outcomes:

By the end of this course, a students should be able to:

1. Describe the legal system and the legal environment of business.
2. Describe the relationship of ethics and law in business.
3. Define relevant legal terms in business.
4. Explain basic principles of law that apply to business and business transactions.
5. Describe business law in the Indian context.
6. Describe current law, rules, and regulations related to settling business disputes.
7. Understand different technical terminology used in this act
8. Discussed and consult businesses on related issues of business laws

UNIT 1. Indian Contract Act 1872

- 1.1 Meaning and Definitions (Offer, Acceptance, Consideration, Contract)
- 1.2 kinds Of Contract
- 1.3 Essential of Contract
- 1.4 Performance and Discharge of Contract
- 1.5 Breach of Contract

[L-10][M-10]

UNIT 2. Indian Sale of Goods Act, 1930

- 2.1 Introduction and Definition
- 2.2 Formation of Contracts of sale
- 2.3 Conditions and Warranties
- 2.4 Right of Unpaid Seller against the Goods
- 2.5 Performance of Contract of Sale

[L-10][M-10]

UNIT 3. Negotiable Instruments Act, 1881

- 3.1 Definition and Characteristics of Promissory Note, Bill of Exchange And Cheque.
- 3.2 Holder and Holder in Due course, Privileges of Holder in Due course
- 3.3 Crossing and Endorsement of Negotiable Instrument
- 3.4 Dishonor N.I., Notice Of Dishonor, Dishonor Of Cheque And Its Effects.
- 3.5 Highlights of Negotiable Instrument (Amendment) Bill 2017

[L-10][M-10]



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UNIT 4. Foreign Trade (Regulation and Development Act: 1992

[L-10][M-10]

- 4.1 Introduction of Act
- 4.2 Silent features of Act
- 4.3 Importance of Act
- 4.4 Present Scenario of Indian Foreign Trade policy
- 4.5 Elementary study of Indian Foreign Trade Policy 2015-2020

UNIT 5. Information Technology Act – 2000

[L-10][M-10]

- 5.1 Meaning, Objective, Scope of The Act
- 5.2 Digital Signature & Electronic Governance.
- 5.3 Granting Digital Signature Certificate
- 5.4 Offences & Penalties, Adjudication
- 5.5 Cyber Crime and Cyber Security


✓ UNIT 6. The Patent Act -2002

[L-10][M-10]

- 6.1 Meaning, Objective & Important Definition
- 6.2 Invention, Not Patentable Invention
- 6.3 Application for Patents and Process
- 6.4 Grants of Patent and Rights of Patent Holder
- 6.5 Patent Office and Power of Controller

Reference Books

1. Business Law & Mgt. By Bulchandani, Published By Himalaya Publication Bombay (2006).
2. Business Regulatory Framework By S.N. & S.K. Maheshwari, Published By Himalaya Publication Bombay (2006).
3. Business Law – By Kuchal M.C. – Published By Vikas Publishing House, New Delhi
4. Business Law – By Kapoor .N.D. – Published By Sultan Chand And Sons New Delhi
5. Consumer Protection Act – By Niraj Kumar
6. Mercantile Law Including Industrial Law – By Jahangir .M.J Sethana – Published By Lakhani Book Depot – Mumbai
8. व्यवसाय नियामक कायदे – डॉ. पी. आर. कुलकर्णी, व हिवरेकर विद्या बुक्स – औरंगाबाद
9. व्यापार विषयक औद्योगिक कायदे – वी. डी. जोशी. – नरेंद्र प्रकाशन पुणे
10. भारतीय व्यापार आणि औद्योगिक कायदे – डॉ. भास्कर देशमुख, पेंढारकर – पिंपळापुरे प्रकाशन नागपूर


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SEMESTER IV

Paper: 401 Business Skill

60+40 Pattern: External Marks 60, Internal Marks 40. Maximum Total Marks: 100

Required Lectures: 60

CBCS 60 + 40 Pattern: External Marks 60 + Internal Marks 40 = Maximum Total Marks: 100 [Total Lectures: 60]

Objectives:

1. To equip students with the necessary soft skills to enhance their competitive edge in the job market
2. To imbibe in students positive attitude towards life and work
3. To help students excel in their individual and professional lives using the soft skills

Course Outcomes

Student shall be able to –

- Understand the significance and essence of a wide range of soft skills
- Learn how to apply soft skills in a wide range of routine social and professional settings.
- Learn how to employ soft skills to improve interpersonal relationships.
- Learn how to employ soft skills to enhance employability and ensure workplace and career success.

UNIT 1. Oral Communication

1.1 Meaning Importance, Advantages & Disadvantages of Oral Communication [L-10][M-10]

1.2 Qualities of Good Speaker, Using Voice effectively in Oral communication

UNIT 2. Written Communication

2.1 Meaning, Distinction with Oral Communication, Merits & Limitations of Written communication. [L-10][M-10]

2.2 Letter writing: Layout of Business letter, types & Styles of layouts, Essentials of Good Business letters

2.3 Purpose of letters: Resume, Application, Appointment.

2.4 Complaint Letter, Sales Letters, Status enquiries, Collection letter

2.5 E-mail –Drafting & Sending Emails

2.6 Report Writing: Meaning & Nature of Report, Formats of Reports – Formal, Informal reports,

2.7 Writing Reports - Data collection, organizing, presentation of the Report.

UNIT 3. Organizational Correspondence

3.1 Job Applications: Covering Letter-Resume – Appointment Letter [L-10][M-10]

3.2 Meaning & Importance of Organizational Communication

3.3 Internal communication: Notice, Circular, Memo.

3.4 External Communication – Enquiries, Quotations

UNIT 4. Presentation Skills

4.1 Meaning and Importance of Presentation [L-10][M-10]

4.2 Types, Content, Audience Analysis, Evaluation/Feedback

4.3 Effective ways to deliver the Presentation.

4.4 Use of ICT for effective Presentations

UNIT 5. Group Discussion & Interview Technique

5.1 Group Discussion – Meaning Importance, Do's & Don'ts for GD [L-10][M-10]

5.2 Taking Interviews – Types of Interviews

5.3 Preparation for interview - Process of interview, Pre, During and Post interview

5.4 Guidelines for successful interview taking – Personal interview.

5.5 Interview Techniques – Manners and etiquettes to be maintained during an Interview.

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