VALUE ADDED COURSES (VAC)

Value Added Courses (VAC)

The VAC courses will come from four sub groups — (i) Understanding India, (ii) Environmental Science, (iii) Digital and Technological Solutions, and (iv) Health & Wellness, Yoga Education, Sports, and Fitness. All together they will have a credit allocation of 6.

Each student will have to take any three courses, each of 2-credit, from any three groups during Semesters 1, 2, & 4. Here one course from the Environmental Science group is compulsory except if the student takes a core course on Environmental Science.

Semester 1

1. Srijanimulok Sahitya-1
2. Traditional Knowledge System of the Bodos
3. Understanding Indian Constitution
4. India Through The Ages
5. Cyber Ethics
6. Psychology For Health And Well Being
7. Assamese Modern Song
8. Environmental ethics & Forest ecology
9. Natural Resource Management and Sustainable Development
10. Environmental Studies

Four-Year Undergraduate Programme
Semester: First
Course Name: সৃজনীমূলক সাহিত্য- ১
Common Course
Value Added Course
Existing Base Syllabus: UG CBCS Syllabus
Course Level: 100-199

Unit No.	Unit Content	No. of Classes	Marks
১	অনুকৰণ আৰু কল্পনা, কবিতাৰ আঙ্গিক আৰু ধাৰা	১২	২০
২	কবিতাৰ ভাষা; ব্যৱহাৰিক লেখা/প্ৰকল্প	১২	২০

পঠন-সামগ্ৰীঃ
সাহিত্য নিৰ্মাণ প্ৰসঙ্গঃ   নতুন সাহিত্য পৰিষদ
সৃজনীশীল সাহিত্যঃ প্ৰেৰণা আৰু আৰিঃ   অতনু ভট্টাচাৰ্য
Creative Writing: The Essential Guide: Tim Atkinson

Graduate Attributes: সৃষ্টিশীল মনোভাব, চিন্তনৰ নতুনত্ব, সমাজমুখিতা

Course Objective:কবিতাৰ ভাষা আৰু আংগিক নির্দেশ কৰা আৰু ইয়াৰ ৰচনা শৈলীৰ আভাস দিয়াই এই কাকতখনৰ উদ্দেশ্য।

Learning Outcome:এই কাকতখন অধ্যয়ন কৰিলে ছাত্র-ছাত্রীসকলে আবেগ, চিন্তন আৰু মনন কৌশল প্রয়োগ কৰি কবিতা-ৰচনাৰ ক্ষেত্রত দক্ষতা অর্জন কৰিব পাৰিব।

Theory Credit: 2

Practical Credit: 0

No. of required classes: 24

No. of contact classes: 20

No. of non-contact classes: 4

Value Added Course

Traditional Knowledge System of the Bodos (for Sem-I)

Marks: 80 (Theory) + 20 (Internal Assessment) Total =100

Credit Point : 2

Course Outcome:

- Student will come to gain a comprehensive understanding of traditional knowledge systems, including their origins and significance.

- Students will learn about the importance of preserving traditional knowledge and methods foe documenting and recording this knowledge to ensure its continuity and accessibility for future generation.

Unit-I: An Introduction to Bodo Traditional knowledge system	20
Unit-II: Bodo Traditional knowledge system and ethno botany	20
Unit-III: Bodo Traditional knowledge system related to agriculture	20
Unit-IV: Bodo Traditional knowledge system and sustainable development	20

References:

Traditional Knowledge and Intellectual Property-Stephen A. Hansen and Justin W. VanFleet

The Protection of Biodiversity and Traditional Knowledge in International Law of Intellectual Property-

Jonathan CurciMonograph of the Boros-PhukanChBasumatary&SwarnaPrabhaChainary

BoroKacharirSamaj Aru Sanskriti-BhabenNarzee

MainaoBoraynay-IndramalatiNarzaree

Understanding Indian Constitution

Unit-I: The Making of the Indian Constitution
    a. The historical background
    b. Constituent Assembly of India
    c. Philosophy of the Constitution and features

Unit-II: Rights and Duties
    a. Fundamental rights of the Indian citizen
    b. Fundamental Duties of the Citizen
    c. The Directive Principles of State Policy

Unit-III: Government and Legislature
    a. Union Executive: President, Vice-President, Prime Minister and Council of Ministers
    b. Lok Sabha, Rajya Sabha.
    c. Passing of bills

Unit-IV: Federalism in India
    a. The centre-state relations
    b. Key characteristics of federalism in India
    c. Role of Governor

Reading List:

Unit-I:
D. Basu, (2012) *Introduction to the Constitution of India,* New Delhi: Lexis Nexis.

G. Austin, (2010) 'The Constituent Assembly: Microcosm in Action', in *The IndianConstitution: Cornerstone of a Nation*, New Delhi: Oxford University Press, 15th print, pp.1-25.

Mellalli, Praveenkumar (2015), Constitution of India, Professional Ethics and Human Rights, New Delhi, Sage Publications

R. Bhargava, (2008) 'Introduction: Outline of a Political Theory of the Indian Constitution', in R. Bhargava (ed.) *Politics and Ethics of the Indian Constitution*, New Delhi: Oxford University Press, pp. 1-40.

S. Chaube, (2009) *The Making and Working of the Indian Constitution*, Delhi: National Book Trust. Chakrabarty, Bidyut. (2017), Indian Costitution: Text, Context and Interpretation, New Delhi, Sage Publications

Unit-II:

G. Austin, (2000) 'The Social Revolution and the First Amendment', in *Working a Democratic Constitution,* New Delhi: Oxford University Press, pp. 69-98.

A .Sibal, (2010) 'From Niti to Nyaya,' *Seminar*, Issue 615, pp 28-34.

Chakrabarty, Bidyut. (2017), Indian Costitution: Text, Context and Interpretation, New Delhi, Sage Publications

Mellalli, Praveenkumar (2015), Constitution of India, Professional Ethics and Human Rights, New Delhi, Sage Publications

Unit-III:

B. Shankar and V. Rodrigues, (2011) 'The Changing Conception of Representation: Issues, Concerns and Institutions', in *The Indian Parliament: A Democracy at Work,* New Delhi: Oxford University Press, pp. 105-173.

H. Khare, (2003) 'Prime Minister and the Parliament: Redefining Accountability in the Age of Coalition Government', in A. Mehra and G. Kueck (eds.) *The Indian Parliament: A Comparative Perspective,* New Delhi: Konark, pp. 350-368.

J. Manor, (1994) 'The Prime Minister and the President', in B. Dua and J. Manor (eds.) *Nehru to the Nineties: The Changing Office of the Prime Minister in India,* Vancouver: University of British Columbia Press, pp. 20-47.

J. Manor, (2005) 'The Presidency', in D. Kapur and P. Mehta P. (eds.) *Public Institutions in India*, New Delhi: Oxford University Press, pp.105-127.

V. Hewitt and S. Rai, (2010) 'Parliament', in P. Mehta and N. Jayal (eds.) *The Oxford Companion to Politics in India,* New Delhi: Oxford University Press, pp. 28-42.

Unit-IV:

B. Sharma, (2010) 'The 1990s: Great Expectations'; 'The 2000s: Disillusionment Unfathomable', in *Unbroken History of Broken Promises: Indian State and Tribal People,* Delhi: Freedom Press and SahyogPustakKuteer, pp. 64-91.

Kincaid(eds.) *A Global Dialogue on Federalism*, Volume 3, Montreal: Queen's University Press, pp.166-197.

M. Singh, and R. Saxena (eds.), (2011) 'Towards Greater Federalization,' in *Indian Politics: Constitutional Foundations and Institutional Functioning,* Delhi: PHI Learning Private Ltd., pp.166-195.

R. Dhavan and R. Saxena, (2006) 'The Republic of India', in K. Roy, C. Saunders and J.

R. Manchanda, (2009) *The No Nonsense Guide to Minority Rights in South Asia,* Delhi: Sage Publications, pp. 105-109.

The Constitution of India: Bare Act with Short Notes, (2011) New Delhi: Universal, pp 192-213.

V. Marwah, (1995) 'Use and Abuse of Emergency Powers: The Indian Experience', in B. Arora and D. Verney (eds.) *Multiple Identities in a Single State: Indian Federalism in a Comparative Perspective,* Delhi: Konark, pp. 136-159.

Semester-I

India Through The Ages

Marks-100   Total Credit: 2

Base Syllabus : UG CBCS
Course Level : 100-199

Unit No. Unit Content	Credit	No of Class.	Marks
I - Origin and Development of Astrology, Astronomy, Mathematics and Ayurveda in India	0.5	07	25
II - Indian concept of Nationalism and the Freedom Movement of India	0.5	07	25
III- Contribution of Indian Scientists in the Academia	0.5	07	25
IV- Policies of the 21st Century Regarding Women and Girl Child Undertaken by the Government of India	0.5	07	25

Readings List
1. Gaurinath Shastri, A Concise History of Sanskrit Literature, MLBD, Delhi.

2. Maurice Winternitz, Indian Literature (Vol. I-III), also Hindi Translation, MLBD, Delhi.

3. Baldev Upadhyay, Sanskrit Sahitya ka Itihas, Sharda Niketan, Varanashi.

4. Baldev Upadhyay, Vedik Sahitya aur Sanskriti, Varanasi.

5. Charakasamhita, MLBD, Delhi

6. Sushrutasamhita MLBD, Delhi

7. Altekar, A.S. – State and Government in Ancient India, MLBD,Delhi,2001

8. Ghosal,U.N- A History of Indian Political Ideas, Bombay,1959

9. Sharma, R.S.- Aspects of Political Ideas and Institutions in Ancient India, MLBD,Delhi,1996

10. Yadav, B.S. and Man Mohan. *Ancient Indian Leaps into Mathematics,* Boston: Birkhauser,2010

11. Tomar, Ankit and Suratha K. Malin. *Ancient And Medieval Indian Thoughts: Themes And Traditions.* Delhi: Sage,2020

12. Chousalkar,A.S. *Revisiting the vPolitical Thought of Ancient India: Pre- Kautilyan Arthashastra Tradition* (First). SAGE Publication Pvt. Ltd.2018

13. Mehta, V.R. *Foundations of Indian Political Thought : An Interpretation (From Manu to the Present Day)* . South Asia Books,1996

14. Sampath. V. *Bravehearts of Bharat: Vignettes from Indian History*. Viking.2022

15. Kashyap, Samudra Gupta. *Untold Stories of the Freedom Struggle From NorthEast India* . Ministry of Information & Broadcasting . Government of India, 2022

16. Gupta, Manmathnath. *Bharat ke krantikari.* Penguin Books , India. 2019

17. Dasgupta.A.K. *History of Indian Economic Thought.* Routledge.2002

Graduate Attributes : Disciplinary Knowledge, , Sense of pride for Indian Culture, Inclination to Indian Knowledge System, First Hand Idea about Indian Concept of Good Health, Indian Freedom Struggle and Original Idea on Indian Nationalism, contributions of Indian Scientists in the world forum as well as Economic policies of Indian Government regarding women and girl child.

Course Objectives : a. Students will acquire knowledge of Ancient India's Tradition of Mathematics etc.

b. Students will study the history and background of Indian Nationalism and the history of India's freedom movement.

c. Students will gain the basic Idea of Indian Nationalism

d. students will gain ideas about the contributions of Indian scientists.

e. Students will know various aspects of different policies of Indian
    government regarding women and girls child.
Learning Outcome : After going through this unit students will be able ....

a. to appreciate the value of knowledge regarding ancient   Indian wisdom.

b. to gain knowledge about various Indian original ideas which are at the root of different areas of cognition.

c. to appreciate Indian Knowledge System that evolved in the initial stage of human civilization.

d. to grasp the Idea of Indian nationalism and Indian Freedom struggle.

e. to gain knowledge about the concept and application of various policies of the Government of India undertaken for the development of women and girl child.

Total Credit : 2.   **No. of Theory Class= 28.**   **No of. Practical Class -0**
Course Designer : Chairperson, UGCCS, Dept of Sanskrit, Gauhati University

VAC [PHILOSOPHY] - I

a. Four-year Undergraduate Programme

b. Semester: **First**

c. Course Name: **CYBER ETHICS**

d. Course Level: 100-199

e. Syllabus showing each unit against class number and marks :

Unit No.	Unit Content	No. of Classes	Marks
I (Theory)	-Meaning, Definitions and Dimensions of Cyber Ethics -Cyber Space, Cyber Crime-Classification and Types of Cyber Crime -Cybersecurity—its Importance, Need for	15	40

	Cyber Regulations, Cyber Technologies and Ethics—Artificial Intelligence(AI), Fintech, Blockchain		
II (Practical)	Practical can be conducted by writing a report (2,000 words) on any issue concerning cyber crime.	15	20

f. Reading list:

Spinello Richard A. (2011). *Cyberethics Morality and Law in Cyberspace*
Stuckelberger C. & Duggal P. (2018). *Cyber Ethics 4.0 Serving Humanity with Values,* Globalethics.net Global Series No. 17

Tavani, H. (2010). *Ethics and Technology: Controversies, Questions, and Strategies for Ethical Computing*

g. Graduate Attributes

i.Course Objectives-

-The course is designed to make the students understand the roles and the significance of Cyber ethics.

- The course introduces the students to the understanding of the relationship between ethics and cyberspace.

- The course will opportune students to make various case studies on cyber crimes.

ii. Learning outcomes:

- On the completion of the course, students will be able to develop various ways to face ethical challenges in the field of cybersecurity.

- The course will enable the students to protect data and sensitive information in the world of cyber security.

- The students will encourage students to use technology in a responsible way.

j.Theory Credit   01

k. Practical Credit   01

l. No. of Required Classes   30

m. No. of Non-Contact Classes   00

GAUHATI UNIVERSITY
VALUE ADDED COURSES (VAC)

Four-year Undergraduate Programme
Semester: First
Course Name: **PSYCHOLOGY FOR HEALTH AND WELL BEING**
Course Level: 100-199

Unit no.	Unit content	No.of classes	Marks
1	Health and Well Being: Continuum and models of health and illness: Medical, Bio-Psychosocial, Holistic Health; Health and Well Being; Cultural Approaches to Medicines	15	25
2	Health Management: Health-Enhancing Behaviours: Exercise, Nutrition, Health Compromising Behaviours; Health Protective Behaviours, Health Promotion through Yoga; Illness Management	15	25

Reading list:
Agarwala, S., Das, I., Kumar, K., & Kumar, S. (2009). Health Psychology. New Delhi, Allied Publishers. Allen, F. (2011).Health Psychology and Behaviour. New Delhi Tata McGraw Hill.
Dalal, A. K., &Misra, G. (Eds.). (2012). New Directions in Health Psychology. New Delhi: Sage. DiMatteo,M. R., & Martin L. R. (2017). Health Psychology. Noida: Dorling Kindersley.
Sarafino, E.P., & Smith, T.W. (2016). Health Psychology: Bio Psychosocial Interactions (9thth Ed.).New York: Wiley. Snyder,
C.R., Lopez S. J., &Pedrotti, J. T. (2011). Positive psychology: The scientific and practical explorations of human strengths. New Delhi: Sage. Taylor, S.E. (2017). Health psychology (10th Ed.) New Delhi: Tata McGraw Hill.
i.   Graduate Attributes
i. Course Objective: To introduce the concept and significance of Psychology for Health and Well Being
ii. Learning outcome:
• Understanding the spectrum of health and illness.
 • Demonstrating adequate knowledge about issues related to stress, stress management and coping.
 • Developing adequate knowledge about the promotion of healthy behaviour.
• Cultivating inner strengths and virtues, like hope and optimism.

j. Theory Credit: 2
k. Practical Credit: 0
l. No. of Required Classes :30
m. No. of Contact Classes: 30
n. No. of Non-Contact Classes: 0
o. Particulars of Course Designer

VALUE ADDED COURSE
Credit-2(1 Theory+1Practical)
ASSAMESE MODERN SONG

Course Objectives

- Develop a sense of Indian aesthetics through music
- As part of "Understanding India" this course will introduce students to the Evolution, History and Practice Assamese Modern Song
- The course aims to familiarize students with the rich heritage of Assamese music.
- To help the students learn and understand Assamese music within the larger area of Hindustani Classical Music.
- To place the Assamese modern musical idiom within our understanding of Indian music.

Learning Outcomes:
Students will be able to demonstrate the ability to

- Grasp the nuances of Indian Classical music through their familiarity with Assamese Modern songs.
- Recognize and competently interpret the fine aspects of music.
- To Place the theory and popularity of the genre in its context

a. Theory (1 Credit)
Unit 1: Basic concepts of Indian Music

- *Swar* / Tune
    - Badi Swar,
    - Sambadi Swar,
    - Bibadi Swar,
    - Anubadi Swar,
    - Alankar,
    - Arohan, Aborohan, Pakad,
    - Sthai,
    - Antara.
  - Concept of Scale
  - Taaland their *Porichoi*

- Tritaal
- Dadra Taal,
- Kaharba Taal,
- Rupak Taal.

Unit 2: Important styles in Assamese Modern Song
- Jyoti sangeet
- Rabha sangeet.
- Bhupendra sangeet.
- Elements of Assamese folk music
- Contemporary Practisoners.

b. Practical (1Credit):
Guidelines:
1) Students will be guided by the teacher to perform minimum 4 songs of each of the above mentioned (in Unit 2) Assamese Musical styles.
3) Teacher will teach the students to demonstrate each taal as mentioned in Unit 1.

Evaluation Plan:
- For theory part, written examination will be conducted for 20 marks.
- The Practical Examination will be conducted by an External Examiner for 30 marks.

No. of Contact Classes-
- **1 Classes per week**

No. of Non-Contact Classes-
- **1 class per week**

Medium of Instruction-
Medium of instruction will be Assamese

Reference Books:
    1. Bharatiya Sastriya Sangeet by Rupanjali Bhatta Barpujari
    2. Easy Reference to Indian Music by Meera Mathur
    3. Asomiya Adhunil Sangeetor Rupkar Xakal by Loknath Goswami

Four-Year Undergraduate Programme
Course name: Environmental ethics & Forest ecology
Total no. of Contact classes: 30
Total Marks: 50
Credits: 2

Course objectives:

This paper aims to provide students with a comprehensive understanding of environmental ethics, ecology, and forest ecology and protection. Through theoretical knowledge, practical examples, and case studies, students will develop a deep appreciation for the importance of environmental sustainability, responsible innovation, and ethical decision-making in the context of environmental challenges.

Learning outcomes:

Upon successful completion of the paper, students will be able to:

1. Demonstrate a comprehensive understanding of environmental ethics, including its definition, historical development, and the application of major ethical theories to environmental issues.
2. Critically assess the ethical implications of emerging technologies, such as AI and genetic engineering, on the environment and sustainability.
3. Analyze the environmental impacts of technology and the importance of responsible innovation in addressing environmental challenges.
4. Identify and propose technological solutions to environmental issues with a focus on promoting sustainability and conservation.
5. Evaluate the values associated with conserving nature and ensuring equitable use of resources for sustainable development.
6. Understand the scope of ecology and its relevance in studying the interactions between organisms and their environments.
7. Recognize ecological levels of organization and their significance in maintaining ecological balance and environmental sustainability.
8. Examine the importance of ecological principles for promoting sustainable environmental practices and conservation efforts.
9. Understand the role of environmental impact assessment (EIA) in evaluating potential environmental consequences and its role in green practices.
10. Discuss the ethics of environmental stewardship and the role of individual actions in promoting green practices and sustainability.
11. Explain the concept of a forest ecosystem and its significance in supporting biodiversity and ecosystem services.

12. Evaluate the structural and functional aspects of forest ecosystems and their role in maintaining ecological balance.
13. Assess the impact of forest fires, grazing, browsing, and invasive species on forest health and ecosystem functioning.
14. Understand the process of biodegradation of wood and the importance of fungi in tree health.

THEORY [Total no. of contact classes: 30; Credits: 2]

Unit 1: Introduction to Environmental Ethics   **(Marks: 16**   No. of Contact Classes: 08)

Defination; Historical development; Major ethical theories and their application to the environment; Ethical implications of emerging technologies (e.g., AI, genetic engineering); Environmental impacts of technology and responsible innovation; Technological solutions to environmental challenges; Environmental Values vis a vis conserving Nature, Equitable use of Resources.

Unit 2: Ecology and Environmental Sustainability   **(Marks: 16**   No. of Contact Classes: 12)

Definition and scope of ecology; Ecological levels of organization; Importance of ecological principles for environmental sustainability; Understanding environmental impact assessment (EIA); EIA process and its role in green practices; Case studies of successful and unsuccessful EIAs; Green Ethics and Individual Actions: Ethics of environmental stewardship; Role of individuals in promoting green practices; action for a sustainable future.

Unit 3: Forest ecology and protection   **(Marks: 18**   No. of Contact Classes: 10)

Concept of forest ecosystem, Significance of forest, forest ecosystem structural and functioning; Measurement of forest productivity; General Concept and Forest Fire; Factors affecting forest health; grazing & browsing, weeds and other invasive species. Forest fire (History, types, main causes, prevention and control), Evaluation of losses due to forest fire; Biodegradation of wood; Important fungal diseases of seedlings in forest nursery, Role of mycorrhiza in tree health.

Reading list:

1. Susan Armstrong and Richard Botzler (2014) Environmental Ethics: Divergence and Convergence, McGraw-Hill Education.
2. Ronald Sandler (2012) Environmental Ethics: Theory in Practice, Oxford University Press.

3. Dale Jamieson (2008) Ethics and the Environment: An Introduction, Cambridge University Press.
4. Robin Attfield (2015) The Ethics of the Environment, Edinburgh University Press.
5. Colin R. Townsend, Michael Begon, and John L. Harper (2008) Essentials of Ecology, Wiley.
6. Daniel D. Chiras (2016) Environmental Science: Creating a Sustainable Future, Jones & Bartlett Learning.
7. John J. Berger (2002) Forests Forever: Their Ecology, Restoration, and Protection, Island Press.
8. K. P. S. Chandel and R. S. Purohit (2014) Forest Ecology and Environment, S. Chand & Co Ltd.
9. Leda P. K. Zapponi and Marcos G. Hevia (2019) Forest Fires: Detection, Suppression, and Prevention, Nova Science Publishers.

Department of Environmental Science
a. Four Year Undergraduate Programme
b. Subject: **Environmental Science**
c. Semester: **First**
d. Course Name: **Natural Resource Management and Sustainable Development**
e. Existing Base Syllabus: **Class XII Science**
f. Course level: **100-199**
g. Syllabus:

Unit	Contents
Unit-I: Introduction	Introduction to natural resources-Air, Water, Soil, Mineral resources, Forests and Energy resources; Classification of natural resources
Unit-II: Water and Forest resource and its management	Brief about water resource management-Surface and Groundwater (Global, National and Regional perspectives); Indigenous Water management techniques in NE India (Dong, Zabo, Bamboo drip irrigation) Forest types and their characteristics; Status and distribution of forests-National and regional scenario
Unit-III: Mineral resource and its management	Use and exploitation of mineral resources; Environmental effects of extracting and using mineral resources-case studies; Mineral resources of NE India and the associated environmental issues and management strategies.

h. Reading list:
   1 Sustainable natural resource management in North east India: K.C.Das, P.J.Das and S.Ojha
   2 Dying Wisdom- A.Agarwal and S.Narain
   3 Environmental management and Sustainable Agriculture: M.A.Khan

    4   Environmental Conservation-promises and actions: A.Ghosh

    5   River Water sharing-Transboundary conflict and cooperation in India:
       N.S.Mohan;

i. Graduate Attributes

   I.   Course Objective:
- ➢ The course objective is to develop an understanding of the basic concepts of environmental significances of natural resources. It also aims to make the students understand about the risks factors associated with natural resource extraction and uses.

   II.   Learning Outcome:
- ➢ Natural resources represent a potentially transformational opportunity to support development, but they are ultimately finite. So, by this course attempts have been made to teach the students about the complex and interwoven aspects of natural resources and to make the learners committed to harnessing the transformational impacts of the natural resource with sustainability aspects.

j. Theory Credit: **2**

k. No. of Required Classes: **60**

l. No. of Contact Classes: **45**

m. No. of Non-Contact Classes:**15**

n. Particulars of Course Designer :

Environmental Studies

Total marks: 50

Course level:100-199

No. of Credits: 2   **No. of hours: 30**

Unit1: Introduction to Environmental Studies   5 lectures

- Multidisciplinary nature of environmental studies;
- Scope and importance;
- Basic concepts: Renewable resources, no renewable resources, Common Property resources, Tragedy of commons, Climate change, global warming
- Concept of sustainable development

Unit 2: Ecosystems   10 lectures

- What is an ecosystem? Difference between ecology and ecosystem. Structure and function of ecosystem: Energy flow in an ecosystem: food chains, food web and

ecological succession.

- Case studies on any one of the following
    - a) Forest ecosystem
    - b) Grassland ecosystem
    - c) Aquatic ecosystems (ponds, streams, lakes, rivers)
    - d) Mountain ecosystem

Unit 5: Environmental Pollution and laws   15 lectures

- Environmental pollution: types, causes, effects and controls; Air, water, soil and noise pollution
- Solid waste management: Control measures of urban and industrial waste.

- 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, policies and treaties

Suggested Readings:

1. Bharucha Erach : Text book on Environmental Studies, UGC, New Delhi
2. Carson, R 2002. Silent Spring. Houghton Mifflin Harcourt.
3. De A.K.: Environmental Chemistry, Wiley Eastern Ltd.
4. Kaushik Anubha and C.P.Kaushik : Perspective in Environmental Studies, New Age International
5. Rajagopalan, R. (2018). Environmental Studies. (3rd Edition) Oxford University Press
6. S. C. Santra (2011): Environmental Science, New Central Book Agency

Graduate Attributes
I.   Course Objective:
      The course objective is to develop an understanding of the basic concepts of environmental studies. This course will help to know the environment around us. It also gives an idea of various laws to protect environment.
II.   Learning Outcome:
      ➢ After going through this course students can visualize the importance of environment for human mankind. This course will help to make an understanding of the various concepts which are frequently used by us. This course also enable students to know the problems of a particular environmental event through case studies and also help them to go through the various available laws that can minimize the environmental problems.

Theory Credit: **2**
No. of Required Classes: **30**
No. of Contact Classes: **30**

No. of Non-Contact Classes:**0**