

(Affiliated to the University of Burdwan) Principal's Office, P.O.: Katwa, Dist.: Purba Bardhaman, West Bengal, PIN: 713 130, India. Mobile: +918101078393 ॥ विद्यया विन्दतेऽमृतम् ॥

INSTITUTION INTEGRATES CROSSCUTTING ISSUES RELEVANT TO GENDER, ENVIRONMENT AND SUSTAINABILITY, HUMAN VALUES AND PROFESSIONAL ETHICS IN TRANSACTING THE CURRICULUM-

Section -A

List of programmes relating the issues relevant to gender, environment and sustainability, human values and professional ethics in transacting the curriculum during the academic year 2019-2024

Section-B

Some Archives of outreach programmes relating the issues in transacting the curriculum during the academic year 2019-24

Section-C

List of Courses Relevant to Professional Ethics, Gender, Human Values, Environment and Sustainability (offered during the academic session 2019-24, CBCS) with the description of relevance

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Coordinator IQAC Katwa College

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Section-A

List of programmes relating the issues relevant to gender, environment and sustainability, human values and professional ethics in transacting the curriculum during the academic year 2019-2024:

| Sl. No. | Year | Name of the Workshop/ Seminar/ Webinar/Conference | Number of Participants | Date |
|------------|------|---|---------------------------|------------|
| 1 | 2019 | Her Voice: Her Vote: Electoral Literacy of Women | 72 | 13.08.2019 |
| 2 | 2019 | Utkarsh Bangla Awareness Programme | 89 | 02.11.2019 |
| 3 | 2020 | One Day International Webinar on Emerging Disaster Issues: Causes & Consequences | 1355 | 27.08.2020 |
| 4 | 2022 | Azadi ka Amrit Mahotsav: Netaji Subhas Chandra Bose and the Indian Freedom Struggle | 140 | 21.04.2022 |
| 5 | 2022 | Right to Vote is a Basic Right | 85 | 17.09.2022 |
| 6 | 2022 | Women Also have Minds: An Introduction to Gender and Feminist Criticisms | 70 | 22.11.2022 |
| 7 | 2022 | Gender Sensitization Workshop | 37 | 23.11.2022 |
| 8 | 2022 | International Human Rights | 136 | 10.12.2022 |
| 9 | 2023 | Awareness Programme on Breast Cancer | 20 | 30.01.2023 |

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| 10 | 2023 | Celebration of International Women's Day by Gender Sensitization Committee | 99 | 10.03.2023 | |
|----|------|--|-----|------------------------|--|
| 11 | 2023 | Fuel Emergency & Carbon Footprints: Remedial Measures | 92 | 03-11-2023 | |
| 12 | 2023 | Special Lecture on Her Voice: Her Vote: Electoral Literacy for Women | 43 | 04-12-2023 | |
| 13 | 2023 | Special Lecture on Chatro Jibone Vedanta | 112 | 12-12-2023 | |
| 14 | 2024 | Two Day International Seminar on Dharmasastras: Guide to Sustainable Prosperity | 134 | 05.01.24 & 06.01.24 | |
| 15 | 2023 | Special Lecture on Present Student Society and Values | 54 | 27-12-2023 | |
| 16 | 2024 | Seminar on Kanyashree Awareness Programme | 55 | 06-01-2024 | |
| 17 | 2024 | International Seminar on Artificial Intelligence and our Future | 113 | 09-01-2024 | |
| 18 | 2024 | Special Lecture on Sanskrit Literature and Character Building | 56 | 09-01-2024 | |
| 19 | 2024 | Special Lecture on Student Life: A Chapter in Character Building | 56 | 09-01-2024 | |
| 20 | 2024 | Special Lecture on How Mothers Build a Forest in World's Largest Delta | 130 | 13-01-2024 | |
| 21 | 2024 | Special Lecture on Environmental Crisis at Present | 70 | 23-02-2024 | |
| 22 | 2024 | Seminar on Self Help Groups Transforming Lives, Promoting and Sustaining Women Empowerment | 150 | 14-03-2024 | |

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| 23 | 2024 | An Awareness Programme for Young and New Voters in Connection with Parliament General Election, 2024 | 50 | 24-04-2024 |
|----|------|--|-----|------------|
| 24 | 2024 | Seminar on Gender, Nature and Culture for International Women's Day Celebration | 110 | 13-03-2024 |
| 25 | 2024 | Know Your Strength Through Self Discovery | 95 | 09.04.2024 |
| 26 | 2024 | Special Lecture on Sanskrit Literature and Modern Society | 41 | 27-04-2024 |
| 27 | 2024 | Seminar on Career Opportunities in the Fields of Wildlife Conventions & Research | 48 | 17-05-2024 |
| 28 | 2024 | JKA India West Bengal Karate Workshop | 110 | 26-05-2024 |
| 29 | 2024 | An International Webinar on Recent Trends in Microelectronic Technology for Wireless Communication | 26 | 29-05-2024 |
| 30 | 2024 | One Day Seminar on Tackling Plagarism: Understanding the Ethics of Research | 98 | 31-05-2024 |
| 31 | 2024 | Seminar on Breast Cancer and Cervical Cancer | 258 | 14.06.2024 |
| 32 | 2024 | One Day Seminar on Woman Rights in Public and Political Life | 99 | 18-06-2024 |
| 33 | 2024 | Seminar on Female Foeticide | 143 | 19-06-2024 |
| 34 | 2024 | Seminar on Breast Cancer | 255 | 19-06-2024 |
| 35 | 2024 | Special Lecture on Human Rights Awareness | 100 | 20-06-2024 |
| | | | | |

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| 36 | 2024 | Seminar on Intellectual Property Rights: Patients and Designs Process | 113 | 15-06-2024 |
|----|------|--|-----|------------|
| 37 | 2024 | One Day State Level Seminar on Feminist Philosophy | 118 | 26-06-2024 |
| 38 | 2024 | One Day Seminar on Scientific Practices in Handling and Use of Plant Protection Chemicals vis-à-vis Safety Measures to be Adopted by the Consumers | 91 | 29-06-2024 |
| 39 | 2024 | One Day State Level Seminar on Nature as Teacher: Lessons from Biodiversity Components 26.06.2024 | 81 | 26.06.2024 |

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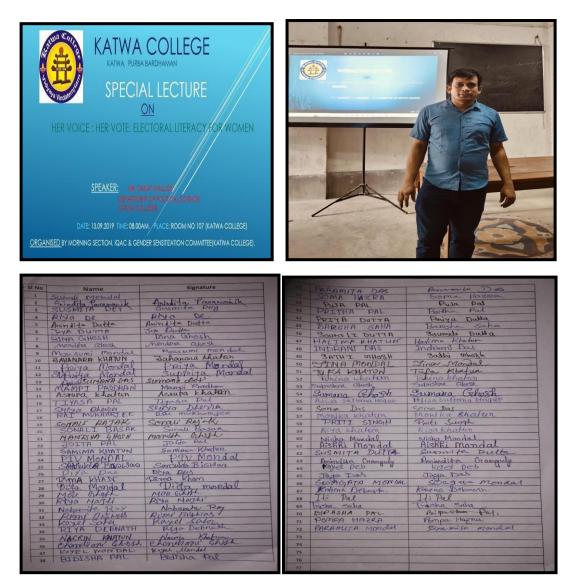
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Date: 13.08.2019 HER VOICE: HER VOTE: ELECTROL LITERACY OF WOMEN



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Date: 02.11.2019 Utkarsh Bangla Awareness Programme A training programme by Alliance Foundation for Humanity & Education, Organized by Katwa College In Collaboration with Department of TET & SD, Govt. of West Bengal



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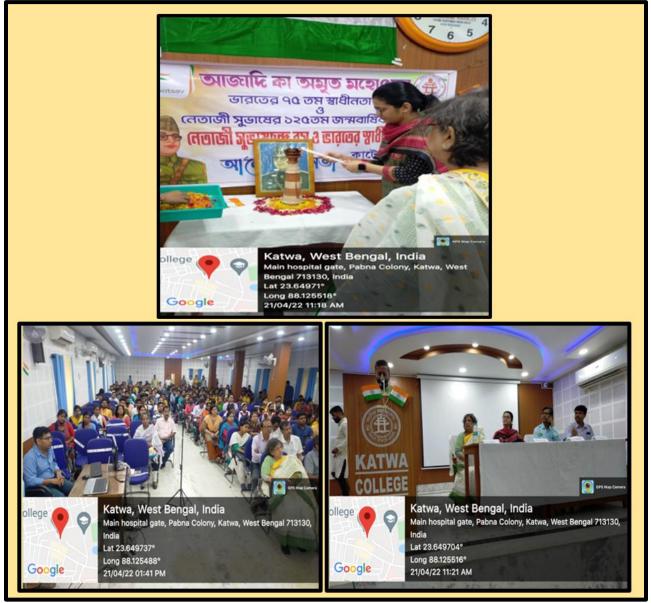
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Date: 21.04.2022 Azadi ka Amrit Mahotsav: Netaji Subhas Chandra Bose and the Indian Freedom Struggle



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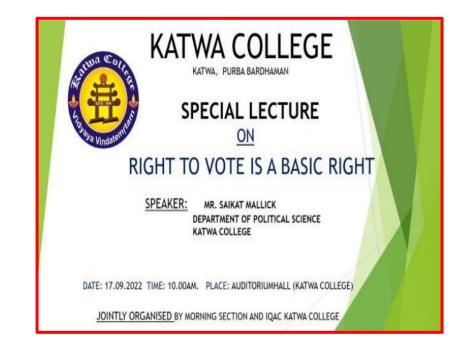
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Date: 17.09.2022

Right to Vote is a Basic Right





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Date: 22.11.2022 Women Also have Minds: An Introduction to Gender and Feminist Criticisms





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Date: 23.11.2022

Gender Sensitization Workshop



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Date: 10.12.2022

International Human Rights



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Principal Katwa College

Office. Phone: (03453) 255 049, E-mail: <u>katcoll2009@gmail.com</u>, Website: <u>www.katwacollege.ac.in</u>

Date: 30.01.2023

Awareness Program on Breast Cancer



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Date: 10.03.2023 Celebration of International Women's Day by Gender Sensitization Committee

| Wamento | al Mome Celebratio | on 😪 | a College |
|--|-----------------------|---|-----------|
| Organise Gender sensitiza Gender Audit Com | mittee | IQAC & Kanyashree Club | |
| Syed Abul Kader Associate Professor Dept. of Pol Sc. | SPEAKERS And | Rabi Ranjan Se Associate Profess Dept. of History | or |
| Venue ' Katwa College Audit | | | |
| | Unum V Date . 10 | th March, 2023 	Time : | |
| | | | |

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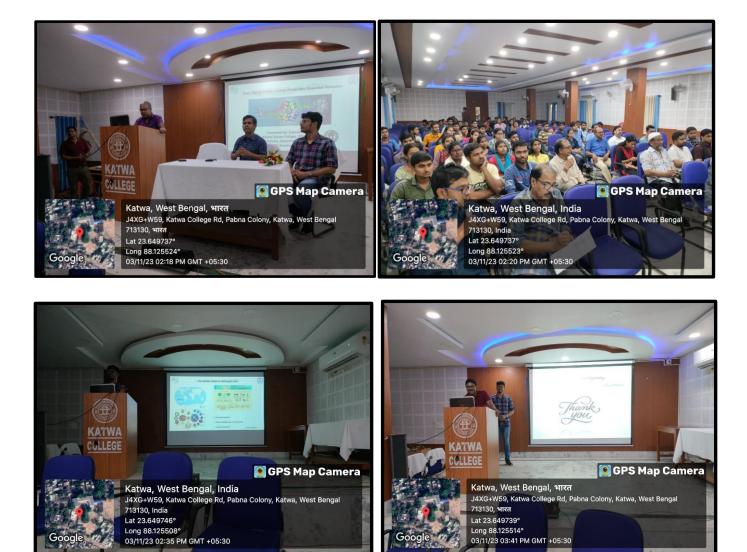
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Date: 03.11.2023

Fuel Emergency & Carbon Footprints: Remedial Measures



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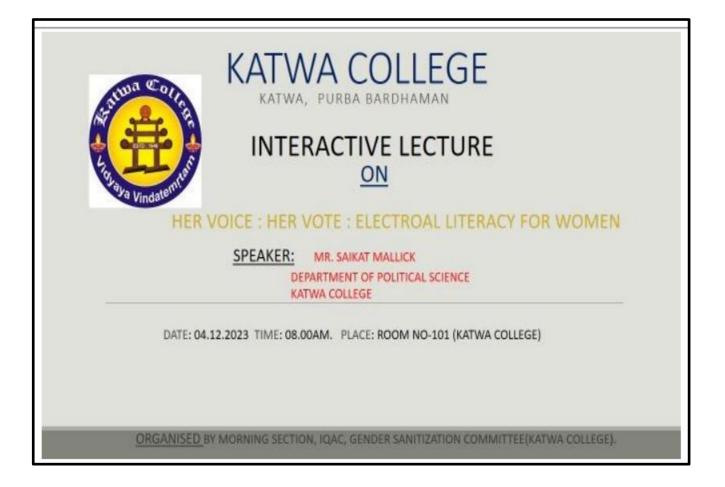
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Date: 04.12.2023 Special Lecture on Her Voice: Her Vote: Electoral Literacy for Women



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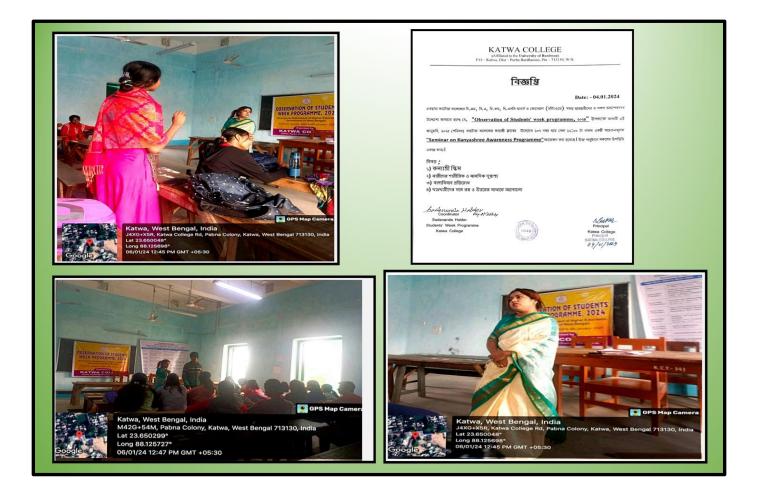
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Date: 06.01.2024

Seminar on Kanyashree Awareness Programme



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Date: 09.01.2024

International Seminar on Artificial Intelligence and our Future



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Date:13.01.2024

Special Lecture on How Mothers Build a Forest in World's Largest Delta



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Date: 23.02.2024 Special Lecture on Environmental Crisis at Present



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Date: 09.04.2024

Know Your Strength Through Self Discovery Organized by IQAC & Gender Sensitisation and Gender Audit Committee



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Date: 24.04.2024

Seminar on Voter Awareness in view of Democracy



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Date: 17.05.2024 Seminar on Career Opportunities in the Fields of Wildlife Conventions & Research





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JKA India West Bengal Karate Workshop





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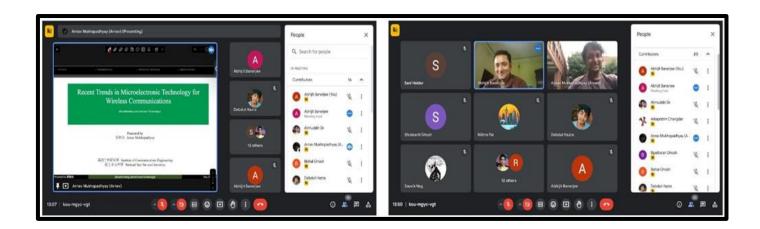
Date: 26.05.24



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Date: 29.05.2024 An International Webinar on Recent Trends in Microelectronic Technology for Wireless Communication An International Webinar on **Recent Trends in Microelectronic Technology** for Wireless Communication Speaker Dr. Arnav Mukhopadhyay Intelligent Wireless Communication (i-WiC) Lab Institute of Communications Engineering National Sun Yat-sen University (NSYSU) Kaohsiung. Taiwan 通訊工程研究所 Organized by: Department of Electronics Date:29.05.2024 Katwa College Time:01:00 pm

In Collaboration with IQAC, Katwa College



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Date: 14.06.2024

Seminar on Breast Cancer and Cervical Cancer



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Date: 15.06.2024

Seminar on Intellectual Property Rights: Patents and Designs

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Date: 18.06.2024

One Day Seminar on Woman Rights in Public and Political Life



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Date:19.06.2024

Seminar on Female Foeticide



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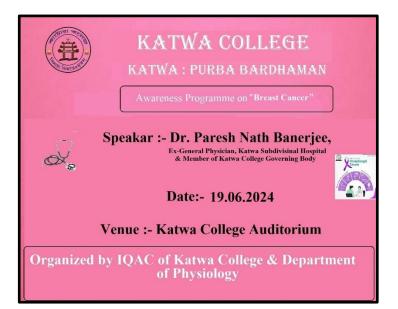
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Date: 19.06.2024

Seminar on Breast Cancer





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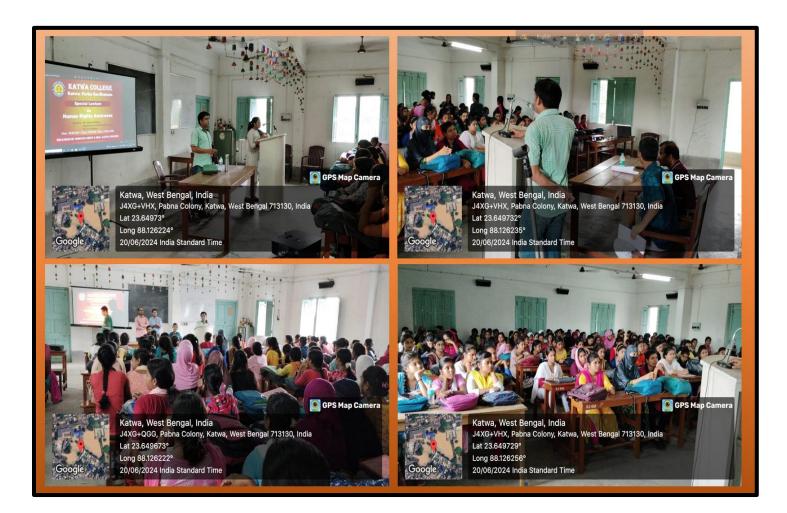
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Date: 20.06.2024

Special Lecture on Human Rights Awareness



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Seminar on Intellectual Property Rights





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Date: 21.06.2024 Seminar on Inte



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Date: 26.06.2024

One Day State Level Seminar on Feminist Philosophy





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Date: 29.06.2024 One Day Seminar on Scientific Practices in Handling and Use of Plant Protection

Chemicals vis-à-vis Safety Measures to be Adopted by the Consumers.



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Date: 10.05.2024 Seminar of Carrier Opportunities and Jobs in Industries



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Section-B

Some Archives of outreach programmes relating the issues relevant to human values and professional ethics, gender, environment and sustainability in transacting the curriculum during the academic year 2019-2024

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Date:25.01.2019 Special Summary Revision of Electoral Programme, 2019

Katwa College was felicitated as Best Electoral Literacy Club in recognition of commendable performance, exhibited during the special Summary Revision of Electoral Rolls Programme, 2019 and got the Certificate of Excellence under Katwa subdivision in Purba Bardhaman District.



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Date: 01.12.2019

Observation of World AIDS Day



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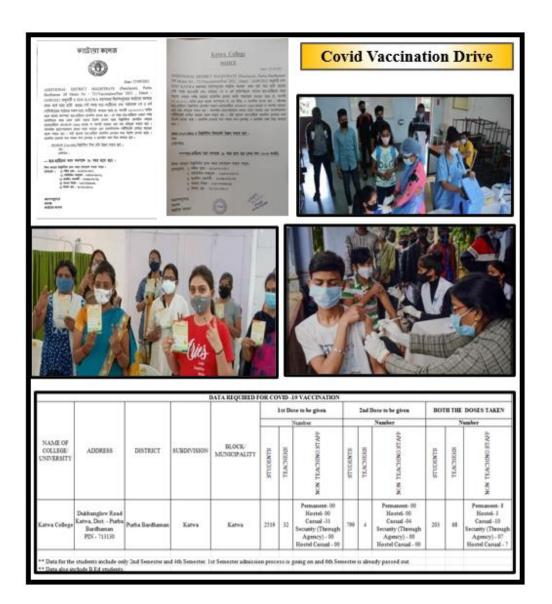
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Date: 29.09.2021 onwards and 07.10.2021 onwards Covid Vaccination Campaign in Katwa College



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Date: 29.07.2022 Plantation and Free Saplings Distribution for Plantation Drive



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Date: 12.01.2023 Swami Vivekananda Birthday Celebration (National Youth Day)



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Date: 21.02.2023 Observation of International Mother Language Day: An awareness of linguistic and cultural diversity



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Date: 26.05.2023

Ganges River Dolphin Awareness Programme



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Date: 09.01.2024 One Day International Seminar on Artificial Intelligence and Our Future



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Date: 07.02.2024

Voter Awareness Rally

The Voter Awareness Rally was organized by Electoral Literacy Club in collaboration with IQAC, Katwa College.



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Date: 20.03.2024 Awareness Campaign for-

- i. Single Use Plastic Free Zone
- ii. Garbage Free College Premises
- iii. Ecological awareness to the local people



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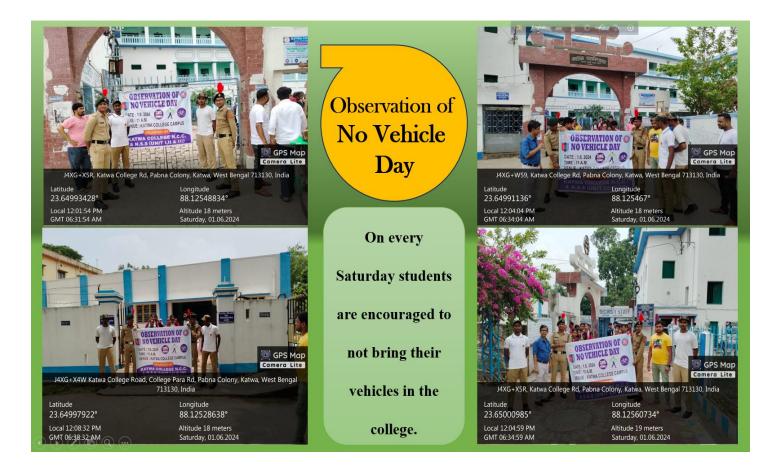
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Date: 01.06.2024 Observation of No Vehicle Day

Katwa College observes 'No Vehicle Day' to raise environmental sensitivity and awareness among students about the vehicular pollution.



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Date: 05.06.2024

Observation of World Environment Day

The NCC in collaboration of IQAC, Katwa College celebrates the World Environment Day by plantation program



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Date: 05.06.2024 Observation of World Environment Day

The NCC of Katwa College has observed the World Environment Day in collaboration with IQAC. The Collage has organized a mangrove plantation program along the banks of Ganges in Lahiripur, Gosaba, West Bengal.



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Date: 31.05.2024 Observation of No Tobacco Day

Katwa College has celebrated the World No Tobacco Day to highlight the health risks of using tobacco, encouraged the smokers to quit smoking and aware the people to protect the children from tobacco interference.



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Date: 09.06.2024

State Level Seminars on Sundarbans and Environment



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Date: 16.05.2024

Cleanliness Drive in Local Ajay-Bhagirathi River Basin



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Date: 16.05.2024

Cleanliness Drive in Local Area

The main purpose of this programme was to create awareness among the students and

the local people regarding the cleanliness and its benefits.



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Date: 09.05.2024 to 16.05.2024 Drinking Water Distribution Campaign During Heat Wave

A 'cool initiative in hot summer' was organized by the NCC and IQAC of Katwa College to serve drinking water, lemon water and oral rehydration solution among the local people in Katwa subdivision, during a massive heat wave attack.



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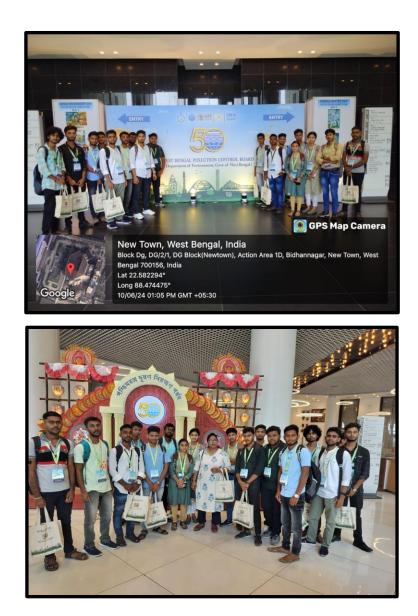
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Date:10.06.2024 Celebration of World Environment Day at West Bengal Pollution

Control Board



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Date: 23.04.2024 Fire Prevention Awareness Campaign

The IQAC of Katwa College along with NCC and fire brigade, Katwa has conducted an extensive awareness campaign to educate the students to prevent gas leaks or inadvertent fires.



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Date: 20.06.2024 & 21.06.2024 Creative Handicraft Exhibition & Fair

The Current and Ex-Students of Katwa College have participated in this handicraft exhibition where the crafts are made by recycled materials.



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Section-C

List of Courses Relevant to Professional Ethics, Gender, Human Values, Environment and Sustainability (offered during the academic session 2019-24, CBCS) with the description of relevance

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| | 1.3.1. List of Courses Relevant to Professional Ethics, Gender, Human Values, Environment and Sustainability (offered during the academic session 2019-24, CBCS) with the description of relevance | | | | | | |
|-----|--|---|----------------------------|--|--|--|--|
| | Short Description of t | | | | | | |
| No. | Discipline | Name of Course | Course Code | Course | | | |
| 1 | Offered to all students of all subjects | Environmental Science/Education (Environmental Studies) | CVA 1061 (NEP) (AEE101) | RelevancetoEnvironmentandsustainability:ThisValue-AddedCourse(and/orcompulsoryabilityEnhancementcourse)is offered to allstudents of Semester-I. Itincludesthe studies ofenvironmentalaspects,particularlyconservationandsustainabledevelopmentand to createawarenessandunderstandingoftheenvironmentanditsdifferentcomponents. | | | |
| 2 | Bengali | Uponyas | CC9 | RelevancetoEnvironment:ThiscourseisofferedtostudentsofB.A.HonoursinBengaliintheSemester-IV.The natureofNara,Boihar,LobtuliaregionofBiharismentionedinBibhutibhusanBandyopadhyay's'Aranyak'novel.naturecontrolsup in the said novel whichis taught in the course. | | | |

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| 3 | Bengali | Rabindranather Kavita Ebong Adhunik Bangla Kavita | CC8 | RelevancetoEnvironment:Thiscourse is offered tostudents of B.A. Programin Bengali in theSemester-IV. Importanceof Nature andenvironment is taughtfrom the poem 'Hariye' byPamendra Mitra. |
|---|---------|---|-----|---|
| 4 | Botany | Plant Ecology and Phytogeography | CC5 | RelevancetoEnvironmentandsustainability:Thiscourse is offered tostudents of B.Sc. Honoursin Botany in the Semester-III. It includes study ofbioticandabioticenvironment,theirinteraction,biodiversity,pollutionandstudybiomes. |
| 5 | Botany | Economic Botany | CC7 | RelevancetoEnvironmentandsustainability:Thiscourseis offered tostudents of B.Sc. Programin Botany in the Semester-III. It includes study ofdifferent types of cereals,legumes,spices,beverages,essential oilsand fats,natural rubber,fiber and many more,which have direct impactonenvironmentandsociety. |

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| 6 | Botany | Plant Biotechnology | CC14 | RelevancetoEnvironmentandsustainability:Thiscourseis offered tostudents of B.Sc. Honoursin Botany in the Semester-VI. This course includesstudy of environmentalaspectsof geneticengineering. |
|---|--------|------------------------------|-------|---|
| 7 | Botany | Intellectual Property Rights | SEC-1 | RelevancetoEnvironmentandsustainability:Thiscourseis offered tostudents of B.Sc. Honoursin Botany as a GenericElective subject in theSemester-III. This courseincludes study of Patent,copyright,trademark,geographicalindicationrelated to human valuesand ethics. |
| 8 | Botany | Agricultural Botany | SEC-1 | RelevancetoEnvironmentandsustainability:Thiscourseis offered tostudents of B.Sc. Honoursin Botany as a GenericElective subject in theSemester-III.This courseincludes study of organicfirming which has directimpact on environment. |

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| 9 | Botany | Biofertilizers | SEC-2 (Sem-IV Hons) & SEC-1 (Sem-III General) | RelevancetoEnvironmentandsustainability:Thiscourseisofferedtostudents of B.Sc. Honoursin Botany in the Semester-IV aswellasB.Sc.GeneralProgramGeneralPrograminSemester-III.This courseincludesstudyofbiofertilizer,Mycorrhizalassociationandorganicfarmingforsustainabledevelopment.organic |
|----|--------|--------------------------------------|---|---|
| 10 | Botany | Natural Resource Management | DSE-2 | RelevancetoEnvironmentandsustainability:ThiscourseisofferedtostudentsofB.Sc.GeneralPrograminBotanyintheSemester-V.Thiscourseincludesdifferenttypesofnaturalresourcesustainableutilization. |
| 11 | Botany | Plant Diversity and Human welfare | SEC-2 | RelevancetoEnvironmentandsustainability:Thiscourseis offered tostudents of B.Sc.GeneralProgram in Botany in theSemester-IV.This courseincludesthe study ofbiodiversity,sustainabledevelopmentandwelfare. |

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| 12 | Chemistry | Environmental Chemistry | CCID/ GE4 | RelevancetoEnvironmentandsustainability:Thiscourseis offered tostudents of B.Sc. GeneralininChemistry in theSemester-IV.This coursecovers different aspects ofenvironmental chemistry,such as the atmosphericpollution, air pollutionepisodes, principles for theestimation of different airpollutants in the airsamples,aspects ofenvironmental inorganicchemistry such as smog,acid rain, hazards ofnuclear disasters, waterpollution, noise pollution,agricultural and industrialpollution and findinggreen solutions to variousenvironmental hazards |
|----|-----------|-------------------------|--------------|--|
| 13 | Chemistry | Green Chemistry | DSE3 | RelevancetoEnvironmentandsustainability:Thiscourseis offered tostudents of B.Sc. HonoursinChemistry in theSemester-VI.This coursecovers different aspects ofenvironmentfriendlytechniquesofchemicalsynthesis covering the 12principlesofGreenChemistry.It focusses onthe use of green solvents, |

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| | | | | selection of starting material etc |
|----|-----------|----------------------|--------|---|
| 14 | Chemistry | Applied Chemistry | DSE4 | RelevancetoEnvironment:Thiscourseisofferedtostudents of B.Sc.PrograminChemistryinChemistryinChemistryinUnit -II covers differentaspects of green chemistryasthealternativechemistry for protection ofenvironment.Itincludingtheuse ofalternative feed stocks orstartingmaterials,reagents,solvents, target molecules,andcatalysts(homogeneous,heterogeneousandbiocatalysis)whichareenvironmentfriendly. |
| 15 | Chemistry | Industrial Chemistry | DSE-IA | RelevancetoEnvironment:ThiscourseisofferedtostudentsofB.Sc.PrograminChemistryinChemistryinUnit -IIcoverseofinUnit -IIasthealternativechemistryforprotectionof |

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| | | | | environment. It includes tools of green chemistry including the use of alternative feed stocks or starting materials, reagents, solvents, target molecules, and catalysts (homogeneous, heterogeneous and biocatalysis) which are environment friendly. |
|----|-----------|----------------------|------|---|
| | | | | RelevancetoEnvironment:This |
| 16 | Chemistry | Industrial Chemistry | DSE4 | course is offered to students of B.Sc. Program in Chemistry in the Semester-VI. This course in Unit -II covers different aspects of green chemistry as the alternative chemistry for protection of environment. It includes tools of green chemistry including the use of alternative feed stocks or starting materials, reagents, solvents, target molecules, and catalysts (homogeneous, heterogeneous and biocatalysis) which are environment friendly. |

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| 17 | Chemistry | Industrial Chemistry | DSE1B | RelevancetoEnvironment:Thiscourseisofferedtostudents of B.Sc. PrograminChemistryinChemistryinChemistryinUnit -II covers differentaspects of green chemistryasthealternativechemistry for protection ofenvironment.It includestools of green chemistryincludingtheuse ofalternative feed stocks orstartingmaterials,reagents,solvents, target molecules,andcatalysts(homogeneous,heterogeneousandbiocatalysis)whichwhichareenvironmentfriendly. |
|----|-----------|-------------------------|-------|--|
| 18 | Economics | Development Economics | CC10 | RelevancetoEnvironmentandSustainability:Thiscourseis offered tostudents of B.Sc. HonoursininEconomics in theSemester-IV.The courseconsists of the topic"SustainableDevelopment" which isrelevant toEnvironmentand sustainability. |
| 19 | Economics | Environmental Economics | DSE2 | RelevancetoEnvironmentandSustainability:Thiscourseisofferedto |

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| | | | | students of B.Sc. Honours in Economics in the Semester-V. The course consists of the topic "Sustainable Development" which is relevant to Environment and sustainability. |
|----|-----------|-------------------------|----------|---|
| 20 | Economics | Environmental Economics | DSE-1B | RelevancetoEnvironmentandSustainability:Thiscourse is offered tostudents of B.Sc. Honoursin Economics in theSemester-VI. The courseconsists of the topic"SustainableDevelopment" which isrelevant to Environmentand sustainability. |
| 21 | Economics | Development Economics | CC1C/GE3 | RelevancetoEnvironmentandSustainability:Thiscourse is offered tostudents of B.Sc. Honoursin Economics in theSemester-III.The courseconsists of the topic"SustainableDevelopment" which isrelevant to Environmentand sustainability. |
| 22 | Economics | Rural Development | DSE1 | Relevance to Gender: This course is offered to students of B.Sc. Honours in Economics in the Semester-V. The course covers the issue of |

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| | | | | Women Empowerment of Rural Women which is relevant to Gender. |
|----|---------|---|-----|--|
| 23 | English | British Poetry, Drama: Sixteenth to Seventeenth Century | CC4 | This course is offered to students of B.A. Honours in English in the Semester- II. Aphra Behn, a woman novelist's work <i>Oroonoko</i> is itself enough to deal with all the items listed above: <i>Professional</i> <i>Ethics</i> , human values, gender, and environment. The same holds true for Bacon's essays and the plays in this paper |
| 24 | English | Contemporary India: Women and Empowerment | GE3 | This course is offered as a Generic Elective Course in English in Semester-III. It deals with key concepts of gender like 'gender', 'sex', 'patriarchy' etc and includes topics like 'Women and Law' and 'Women and Violence'. The topics address professional ethics as well as environment and sustainability . It encourages women empowerment through topics like women's participation in nationalistic movements and Partition. Literary |

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| | | | | texts complement the same ideas. |
|----|---------|---|-----|---|
| 25 | English | British Literature: Eighteenth Century | CC8 | This course is offered to students of B.A. Honours in English in the Semester- IV. The eighteenth- century periodical essays were brought out and circulated with the avowed aim of bringing "philosophy out of closets, and libraries, schools, and colleges, to dwell in clubs and assemblies, at tea-tables and in coffee-houses." – Addison. Neo-classicism and Enlightenment brought to the fore areas necessitating attention on topics like professional ethics, gender and human values |
| 26 | English | Indian Writing in English | CC3 | This course is offered as a Generic Elective Course in English in Semester-II. R. K. Narayan's <i>The</i> <i>English Teacher</i> , besides the other poems in the course, touches on these topics: professional ethics , gender , human |

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| | | | | values, environment. Literature blends diverse values essential for development as a responsible and sensitive human with pleasure and special skills related to the course. |
|----|---------|--|------|--|
| 27 | English | British Romantic Literature | CC9 | This course is offered to students of B.A. Honours in English in the Semester- IV. Romanticism which signifies a 'return to nature' is inextricably bound up with issues of environment and sustainability ; Jane Austen's Pride and Prejudice includes discussion on gender and human values |
| 28 | English | British Literature: Nineteenth Century - Victorian | CC10 | This course is offered to students of B.A. Honours in English in the Semester- IV. Growth in industry and subsequent replacement of landscapes with factories, imperial missions make it imperative to be alert to issues like human values and environment and sustainability besides gender and professional ethics. |

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| 29 | English | Indian Classical Literature | CC1 | This course is offered to students of B.A. Honours in English in the Semester- I. This course, being Classical Literature, comprises texts that deal with myriad aspects of life including professional ethics , human values , gender and environment . The characters, the setting, the situations the characters find themselves in are archetypal and sensitise learners to vital aspects of life. |
|----|---------|--|------|--|
| 30 | English | European Classical Literature | CC2 | This course is offered to students of B.A. Honours in English in the Semester- I. This course, being Classical Literature, comprises texts that deal with myriad aspects of life including professional ethics , human values , gender and environment . The characters, the setting, the situations the characters find themselves in are archetypal and sensitise learners to vital aspects of life. |
| 31 | English | British Literature: The Early Twentieth Century | CC12 | This course is offered to students of B.A. Honours in English in the Semester- V. Topics like 'The World Wars', 'Women's Movements ', |

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| | | | | 'Psychoanalysis' and 'The Uses of Myth' are intimately connected to issues of human values, gender and environment and sustainability. Virginia Woolf's novel <i>Mrs Dalloway</i> is a thoroughgoing study of gender and human values in the early 20th century. So is T.S. Eliot's <i>The Love Song of J. Alfred Prufrock.</i> This course is offered to |
|----|---------|-------------------------------------|------|--|
| 32 | English | Popular Literature | CC6 | students of B.A. Honours in English in the Semester- III. Gender and human values are discussed while dealing with 'detective fiction', 'nonsense poetry' and 'children's literature'. Popular Literature blurs the distinction between high and low literature or non-literature and ropes in various issues through a medium acceptable to all. |
| 33 | English | Indian Literature in Translation | DSE2 | This course is offered as a Generic Elective Course in English in the Semester- VI. Most of the essays and short stories of this paper are concerned with human values |

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| 34 | English | Modern European Drama | CC13 | This course is offered to students of B.A. Honours in English in the Semester- VI. Henrk Ibsen's drama Ghosts deals with gender , professional ethics and human values ; the other plays also deal with human values . Topics question the meaning of existence and portray the uncertainty and erosion of values. |
|----|---------|--|------|---|
| 35 | English | American Literature | CC5 | This course is offered to students of B.A. Honours in English in the Semester- III. The poems, plays and novels in this paper deal with gender , human values and professional ethics through topics that critique ways of living and their implications. |
| 36 | English | Literary Criticism and Histroy of the English Language | DSE4 | This course is offered to students of B.A. Honours in English in the Semester- VI. Texts like Aristotle's <i>Poetics</i> , Dr Johnson's <i>Preface to Shakespeare</i> and Matthew Arnold's <i>The Study of Poetry</i> touch upon issues relating to human values |
| 37 | English | Post Colonial Literatures | CC14 | This course is offered to students of B.A. Honours in English in the Semester- VI. Mahesh Dattani's play <i>Tara</i> is a searching |

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| | | | | analysis of gender discrimination and professional ethics; the poems and plays in this paper deal with environment and human values This course is offered to |
|----|------------|--------------------------------------|------|--|
| 38 | English | Women's Writing | CC11 | students of B.A. Honours in English in the Semester- V. The paper contains texts which are crucially related to issues of gender and associated topics. |
| 39 | English | Literary Theory | DSE3 | This course is offered to students of B.A. Honours in English in the Semester- VI. Literary theories like Marxism, Feminism and Postcolonialism sensitise learners to issues relating to gender, professional ethics. and human values |
| 40 | Philosophy | Outlines of Indian Philosophy - I | CC1 | Relevance to Human values: This part of the syllabus includes the different schools of Indian Philosophy like the Nyāya–Vaiśeṣika; Sāmkhya and Yoga. For example, it includes the Four Noble Truths of Buddhism and also the cittavrtti, cittavrttinirodha of Yoga Darsana. Such Philosophical thoughts help to inculcate human |

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| | | | | values in students in Semester -I |
|----|------------|-------------------------------------|-----|---|
| | | | | |
| 41 | Philosophy | Outlines of Indian Philosophy-II | CC3 | Relevance to Human values: This part of the syllabus includes the different schools of Indian Philosophy like the Nyāya–Vaiśeşika; Sāmkhya and Yoga. For |
| 42 | Philosophy | Indian Ethics | CC5 | Relevance to Ethics: This part of the syllabus upholds the concept of puruşārtha, nişkāmakarma, brahmavihārabhāvanā and himsā, ahimsā, yama and niyama of Bauddha Darsana and Yoga ethics respectively; which helps in inculcating ethical values in students in Semester - III |

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| 43 | Philosophy | Western Ethics | CC6 | Relevance to Ethics: This part of the syllabus includes on the one hand Nature and Scope of Ethics; Nature of Morality, Moral and Non- moral actions while on the other it includes issues like, Concerns of Environmental Ethics: Anthropocentrism, Non- anthropocentrism and Eco-feminism. This definitely prepares the students to be moral in their decision making and with the responsibility towards their environment both social and physical in Semester - III |
|----|------------|------------------------|------|---|
| 44 | Philosophy | Philosophy of Religion | CC10 | Relevance to Ethics and human values : This part of the Syllabus deals with Origin and Development of Religion, Dharma, Dhamma which helps in developing a rational view on religion and strengthens their belief system there by inculcating tolerance and ethical values in Semester - IV |

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| ethics in students in |
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| 46 | Philosophy | Philosophy in the Twentieth Century: Indian | CC13 | Relevance to Human values and Ethics: This part of the syllabus includes contemporary Indian thinkers and the ethical values that their system of Philosophical thoughts includes. For example; Rabindranath Tagore's concept of the Nature of man: The Finite Aspect of Man, the Infinite Aspect of Man, the Finite- Infinite Aspect of Man and Swami Vivekananda's Practical Vedānta. It undoubtedly helps in developing the concept of Equality and Fraternity amongst students which are very essential in developing human relations. This in its turn help in developing Professional Ethics in Semester - VI |
|----|------------|--|------|--|
| 47 | Philosophy | Ethics in Practice | SEC4 | Relevance to Ethics: The syllabus for 3rd semester generic includes almost all topics of the paper "Western Ethics" that has been allotted for 3rd semester Hons by the University (KNU). So, we find that students benefit equally in inculcating social, moral and ethical values in Semester - VI |

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| 48 | Philosophy | Philosophy of Human Rights | SEC2 | Relevance to Ethics: The syllabus for third semester Generic and third semester Program is the same. We find that our Program Students benefit equally in inculcating social, moral and ethical values in Semester - IV |
|----|----------------------|-------------------------------|------|---|
| 49 | Political Science | Gender Sensitization | SEC3 | Relevance to Gender: The topic Feminist Approach to Politics studied by the students of Fifth Semester in the Political Theory paper enlightens the young minds to uphold the value of equality of all. The injustices suffered by women since time immemorial and their struggle to attain equality empowers the students to envision a society which is devoid of any discrimination in Semester - V |
| 50 | Political Science | Political Theory | CC2 | Relevance to Human values: The topic Feminist Approach to Politics studied by the students of First Semester in the Political Theory paper enlightens the young minds to uphold the value of equality of all. The injustices suffered by women since time |

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| 1 | | | | |
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| | | | | immemorial and their struggle to attain equality empowers the students to envision a society which is devoid of any discrimination in Semester - I |
| 51 | Political Science | Indian Political Thought | CC3 | Relevance to Human values: The paper on Indian Political Thought throws light on the philosophies of eminent Indian personalities like Raja Rammohun Roy, Mahatma Gandhi, BR Ambedkar and Swami Vivekananda. This opened the avenues for the students to dwell upon the noble ideals of justice, liberty, freedom of thought, social justice and equality. A close analysis of the life experiences and contributions of the above-mentioned personalities creates awareness amongst the |
| | | | | students to uphold and cherish the same values individually as well as in the best interest of the development of their nation in Semester - II |

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| | | | | RelevancetoEnvironmentandSustainability: The paperSocialMovements inContemporaryIndiastudied by the students ofSemester V has a unit onthe major environmentalmovements in India. Itenlightened the studentsabout the interdependenceof human with theirphysical environment. Ithighlighted the role of |
|----|----------------------|---------------------------|------|---|
| 52 | Political Science | Social Movements in India | CC11 | organized actions across communities in India who collectively participated in large scale movements to protect their natural environment. The paper focused on historic movements like Chipko Andolan, Narmada Bachao Andolan and Silent Valley movement. |
| | | | | The outcomes of these movements led to greater understanding of the strength of organized sustained non-violent mass movement to address the threat caused to environment. |

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| 53 | Political Science | Human Rights Education | SEC4 | RelevancetoEnvironmentandSustainability: The paperSocialMovements inContemporaryIndiastudied by the students ofSemester Vi has a unit onthe major environmentalmovements in India. Itenlightened the studentsabout the interdependenceof human with theirphysical environment. Ithighlighted the role oforganized actions acrosscommunities in India whocollectively participated inlarge scale movements toprotectprotectenvironment. The paper |
|----|----------------------|------------------------|------|--|
| 53 | | Human Rights Education | SEC4 | communities in India who collectively participated in large scale movements to protect their natural |
| | | | | Bachao Andolan and |
| | | | | Silent Valley movement . The outcomes of these movements led to greater understanding of the strength of organized sustained non-violent mass movement to address the threat caused to environment. |

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| 54 | Political Science | Environmental Awareness | SEC2 | RelevancetoEnvironmentandSustainability:The paperEnvironmentPoliticsoffered toSemester IVHonoursandProgramstudentshelpsthemtounderstandthevariouscomponentsofthephysical environment, thethreat that is being causedtoitbyuncontrolledhumanactivitieshuman activitiesand thewaysinwhichtheenvironmentcanbeprotected.Theunitonclimatechangehelpedprotected.Theunderstandaboutthecollectiveresponsibility ofmankindtopreventthedaboutthecollectiveresponsibility ofmankindtopreventthedascussiononthemasureswhichcanbeingcausedtothesustainablelifestyle,avoidingsingleuseplastics,emphasisonrecycling,takingpublictransportationetc.theunit ongreen |
|----|----------------------|-------------------------|------|--|
| | | | | transportation etc. The |

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| | | | | balancing economic growth with environment <i>protection</i> . |
|----|----------------------|------------------------|-------|--|
| 55 | Political Science | Environmental Politics | SEC02 | RelevancetoEnvironmentandSustainability:The paperEnvironmentPoliticsoffered toSemester VIHonoursandProgramstudentshelpsthem tounderstandthevariouscomponentsofthephysical environment, thethreat that is being causedtoitbyuncontrolledhumanactivitieshumanactivitiesadouttheenvironmentcanbeprotected.Theunitonclimatechangehelpedthestudentstounderstandaboutthecollectiveresponsibility ofmankindtopreventthedamagebeingcaused <tt>tothe</tt> |

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| | | environment. It led to the |
|--|--|-----------------------------|
| | | discussion on the |
| | | measures which can be |
| | | taken in this direction and |
| | | facilitated awareness |
| | | amongst them. For |
| | | example, the importance |
| | | of sustainable lifestyle, |
| | | avoiding single use |
| | | plastics, emphasis on |
| | | recycling, taking public |
| | | transportation etc. The |
| | | unit on green governance |
| | | led to discussions on the |
| | | concept of sustainable |
| | | development and |
| | | balancing economic |
| | | growth with environment |
| | | protection. |

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| 56 | History | Women and Social Change in Nineteenth Century | DSE 02 | Relevance to Gender: The final semester students of History Hons. have a course on Women and Social Reform in Nineteenth Century in the CBCS Under Graduate syllabus. We teach the students of our college this course, so that they develop an understanding of the social norms and hindrances on the path to progress for women and the endeavours of pioneering women to cross these unsurmountable barriers during the dawn of modernity in India. Although the course primarily deals with the colonial Indian situation, a comparison has been drawn with contemporary Britain where the female suffragists had successfully campaigned for voting rights during the nineteenth century and thus pushed the envelope to some extent. Contemporary women's question and the endeavours of the pioneering social reformers to address this in India has been a |
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| | | | | significant aspect of this paper. It also tells us about the successful women achievers like Pandita Ramabai, Begum Rokeya, Rukhmabai, Anandibai Joshi and Kadambini Ganguly and how they had to rebel against contemporary social practices. This course also highlights some areas like early regulations on child marriage, problems and prospects of women's education etc. which have remained contemporaneous issues in recent times also. It also enables one to understand women's foray into the public world and its problems. |
|----|----------|---|-----|--|
| 57 | Sanskrit | Classical Sanskrit Literature (Poetry) | CC3 | Relevance to Human values through slokas: This course enables student to get a better understanding of metrics and this helps them to decipher slokas in Semestre - II |
| 58 | Sanskrit | Classical Sanskrit Literature (Drama); Abhijñānaśakuntalam (Whole) | CC5 | Relevance to Gender and Human values: This course focusses on the social relevance of relationship as well as institution of marriage etc in Semester - III |

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| 59 | Sanskrit | Basic Elements of Ayurveda | SEC 601 | RelevancetoEnvironmentandSustainability:Thiscourse discusses about thesignificanceofenvironmentalresourcesintheformofbasicelementselementsof |
|----|----------|--|----------|--|
| 60 | Sanskrit | Dramaturgy Dasarupaka & Sahitya Darpana 6th | DSE 504 | Relevance to Human values: Criticism is that dramaturgy which focusses the impact of larger social units, such as institutions on human behaviour. |
| 61 | Sanskrit | Classical Sanskrit literature (Prose) | SNS C202 | Relevance to Human values: The sanskrit literature discussed in the course (i,e, Vedas, Upanishads, epics) has given much importance to human values in ancient India. |
| 62 | Sanskrit | Sanskrit Prose | SNS C201 | Relevance to Human values: This course is on Sanskrit poetry and dramatic literature focusses on ethics. Rama has been treated as an ideal man and ethics is explained. |

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| 63 | Sanskrit | Vedic literature | SNS C403 | Relevance to ethics : This course gives a general concept regarding the Vedic literature, discussed the ethics of the Vedic mantra and also discusses about the origin, phonetic, morphological characteristics of Vedic language. |
|----|----------|---|-------------|--|
| 64 | Sanskrit | Vedic literature | SNS DSE 501 | Relevance to ethics : Gives a general concept regarding the Vedic literature , discusses the ethics of the Vedic mantra and also discussed about the origin, phonetic, morphological characteristics of Vedic language. |
| 65 | Sanskrit | Political Thought in Sanskrit Literature | SNS SE402 | Relevance to ethics : This topic gives the discussion of various ministers on the managementof the king's kingdom and concerning the king's instruction, which is related with ethical teaching. |
| 66 | Sanskrit | Manusanhita Saptam Adhyay | SNS GE501 | Relevance to ethics : This course gives insight on the sense of justice towards human life and the ethical teachings in Manusanhita. |

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| 67 | Sanskrit | Vedic Literature | SNS C403 | Relevance to human values and ethics: Importance of nature in human life, social policy and religious principles & beliefs. | |
|----|----------|--|-----------|---|--|
| 68 | Sanskrit | Indian Social Institutions and Polity | SNS C601 | Relevance to human values and ethics: This course focuses on royal policy and social policy understanding human values in proper perspective, efficient way of rearing. | |
| 69 | Sanskrit | Poetics Literary Critism (Kavya Prakash-I & II) | SNS C501 | Relevance to human values and ethics: This course includes manifestation of human moral consciousness, through literature. | |
| 70 | Sanskrit | Ancient Indian Polity | SNS GE301 | Relevance to ethics : The various duties of the king for good governance, punishment policy, tax policy, war policy etc. have been discussed in the chapter Manu samhita, related with ethical teaching. | |
| 71 | Zoology | Ecology | CC2 | RelevancetoEnvironmentandSustainability:Itdescribesthebasicconcepts of ecology andenvironment.The syllabusis divided into 4 units.Thecourse highlights on someof the important aspects as | |

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| | | | | for example growth and |
|----|---------|-----------------|-------|--|
| | | | | survival of populations |
| | | | | and communities in |
| | | | | different habitats, energy |
| | | | | flow in the ecosystems, |
| | | | | interactions between the |
| | | | | communities, exclusion of |
| | | | | niches and consequences |
| | | | | of changing environment |
| | | | | on the biodiversity. The |
| | | | | practical syllabus |
| | | | | strengthens the theoretical |
| | | | | concepts as it involves |
| | | | | field study on the |
| | | | | theoretical concepts |
| | | | | learned by the students in |
| | | | | Semester-I |
| | | | | RelevancetoEnvironmentand |
| | | | | |
| | | | | Sustainability : Theory paper describes the aquatic |
| | | | | biomes, freshwater and |
| | Zoology | | | marine ecology and |
| | | | | management of aquatic |
| | | | 5.654 | resources. The practical |
| 72 | | Aquatic Biology | DSE1 | paper strengthens the |
| | | | | theoretical concepts by |
| | | | | field studies to water |
| | | | | bodies, testing of various |
| | | | | physicochemical water |
| | | | | parameters and their |
| | | | | impact on environment in |
| | | | | Semester-V |

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| 73 | Zoology | Wildlife Conservation and Management | DSE6 | RelevancetoEnvironmentandSustainability:Thiscoursedescribesvaluesofwildlife,importanceandethicsofconservation,worldconservationstrategies,censusmethods,planningandmanagementofwildlifeinprotectedareasexsituandinsituandinsituconservationmethodsinsemester-IV |
|----|---------|---|------|---|
| 74 | Zoology | Communicative Nutrition and Health Statastics | SEC4 | RelevancetoEnvironmentandSustainability:Thiscoursedescribesthesourcesofenvironmentalhazards,effectofchangeonpublichealth,differenttypesofpollution,theirsourcesandcontrol,diseasescausedbycausedbytheenvironmentalpollutionandwastemanagementtechnologiesinVIu |
| 75 | Zoology | Biodiversity Conservation and Sustainable development | E301 | RelevancetoEnvironmentandSustainability:Thiscoursedescribesbiodiversityconservationstrategiesandsustainabledevelopment |

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| 76 | Geography | Environmental Issues | CC10 | RelevancetoEnvironmentandSustainability:In theSemester - IV the coursedescribes the sources ofenvironmentalhazards,effect of climate changeon public health, differenttypes of pollution, theirsourcesandcontrol,diseasescausedby theenvironmentalpollutionandwastemanagementtechnologies. |
|----|-----------|----------------------|------|--|
| 77 | Geography | Environmental Issues | CCID | RelevancetoEnvironmentandSustainability:IntheSemester - IV the coursedescribes the sources ofenvironmentalhazards,effect of climate changeon public health, differenttypes of pollution, theirsourcesandcontrol,diseasescausedby theenvironmentalpollutionandwastemanagementtechnologies. |

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Related Syllabus: Environmental Science/Education

| SEMESTER- I |
|--|
| VALUE ADDED COURSE |
| PAPER CODE: CVA 1061 [COURSE NO. 1] |
| ENVIRONMENTAL SCIENCE/EDUCATION |
| Unit 1: Basics of Environmental Studies: (05) |
| Definition, Nature, Scope and Importance; Components of environment: Environmental |
| education |
| Unit 2: Natural Resources: Renewable and Nonrenewable Resources (10) |
| Nature and natural resources their conservation and associated problems: |
| · Forest resources: Uses, types and importance, Joint Forest Management & symbiotic |
| relationship between tribal population and forests, Deforestation and its effects |
| · Water resources: Distribution of water on Earth; Use, over exploitation of surface and |
| ground water; Dams: Benefits and problems; Flood and Drought |
| · Mineral resources: Mineral resources in India; Use and exploitation, Social impacts of |
| mining |
| Food resources: World food problems and food insecurities. |
| Energy resources: Renewable and Nonrenewable energy sources; Use of alternate energy |
| sources - Case studies |
| • Land resources: Land as a resource; Land degradation, landslides, soil erosion, |
| desertification |
| Use of resources for sustainable development (Concepts & Goals) |
| Unit 3: Ecology and Ecosystems (08) |
| Concept of ecology, Population ecology, Community ecology |
| Concept of an ecosystem, different types of ecosystem |
| Food chains, food webs and ecological succession |
| Energy flow in the ecosystem and energy flow models |
| Unit 4: Biodiversity and its conservation (08) |
| Biodiversity: Levels of biological diversity |
| Values of biodiversity |
| Hot-Spots of biodiversity, IUCN Red Data Book, Mega-biodiversity countries |
| Threat to biodiversity |
| Threatened and endemic species of India |
| |

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| Conservation of biodiversity (In- situ and Ex-situ) | |
|--|---|
| Ecosystem services: Ecological, Economic, Social, Ethical, Aesthetical a values | and Informational |
| Unit 5: Environmental Pollution and Management | (08) |
| | (08) |
| (a) Nature, Causes, Effects and Control measures of – Air pollution, Wat pollution, Noise pollution | |
| (b) Solid waste management: Causes, effects and disposal methods; biomedical and municipal solid wastes | Management of |
| (c) Disaster management: Floods, Earthquake, Droughts, Cyclone and Land | slides |
| Unit 6: Environmental Policies and Practices | (10) |
| Constitutional Provisions for protecting environment- Article 48(A), 51A(g) | 60000 |
| Environmental Laws: The Environment (Protection) Act, 1986; The Ai Control of Pollution) Act, 1981; The Water (Prevention and Control 1974; Forest (Conservation) Act, 1980 | |
| The wildlife Protection Act, 1972 | |
| Climate change, Global warming, ENSO, Acid rain, Ozone layer depleti Kyoto Protocols | ion; Montreal and |
| Unit 7: Human Communities and Environment | (06) |
| Human population growth; Impacts on environment | |
| Environment and human health: Concept of health and disease; Common and Non- communicable diseases; Public health awareness programmes Environment movements in India: Chipko Movements, Silent Va Narmada Banchao Aandolan | in India |
| Unit 8: Field Work Report/Project Report/Term paper | Marks: 20 |
| [Based on any one of the following topics and to be evaluated by interna | AND |
| | (05) |

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Subject: Bengali

| Semester IV | |
|--|---------------------------------------|
| CC-8 :কবিতা (Kabita) | Class 60 |
| রবীন্দ্রনাথের কবিতা | Class 30 |
| (পাঠ্য কবিতাসমূহ: নির্ঝরের স্বপ্নভঙ্গ , মেঘদূত, দুইপাথি, বিদ ছেলেটা, পৃথিবী) | ায় অভিশাপ, ব্রাহ্মণ, হারিয়ে যাওয়া |
| আধুনিক বাংলা কবিতা – বর্ধমান বিশ্ববিদ্যালয় প্রকাশিত | Class 30 |
| (পাঠ্যকবিতা : বনলতা সেন- জীবনানন্দ দাশ, মানুষ – কাজী নজ | রুল ইসলাম, শাশ্বতী- সুধীন্দ্রনাথ দত্ত |
| সংগতি – অমিয় চক্রবর্তী, হারিয়ে – প্রেমেন্দ্র মিত্র, একখানা হ | াত – বুদ্ধদেব বসু, তুমি শুধু পঁচিশে |
| বৈশাখ – বিষ্ণু দে, ভারতবর্ষ – দিনেশ দাস , একটি কবিতার ভ | লন্য – সুভাষ মুখোপাধ্যায়, কলকাতার |
| যীঙ – নীরেন্দ্রনাথ চক্রবর্তী, প্রিয়তমাসু – সুকান্ত ভট্টাচার্য, জন্ম | ভূমিকেই – শামসুর রাহমান, বাবরের |
| প্রার্থনা – শঙ্খ ঘোষ, যেতে পারি কিন্তু কেন যাব – শক্তি চট্টোপাধ্য | য়, উত্তরাধিকার – সুনীল গঙ্গোপাধ্যায় |
| CC – 9 : উপন্যাস (Upanyas) | Class 60 |
| চন্দ্রশেখর – বঞ্চিমচন্দ্র চট্টোপাধ্যায় | Class 30 |

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Subject: Botany

| Semester III | |
|--|-------------------------------|
| Core Course 5 : Plant Ecology and Phytogeography (Theory-4, Practical-2) | Credits: 6 |
| THEORY | Lectures: 60 |
| Unit 1: Introduction | (6 lectures) |
| Basic concepts; Levels of organization. Inter-relationships between environment, the components and dynamism, homeostasis. | the living world and the |
| Unit 2: Soil | (6 lectures) |
| Importance; Origin; Formation; Composition; Physical; Chemical and | Biological components. |
| Unit 3: Water | (4 lectures) |
| Importance: States of water in the environment; Atmospheric moistur fog, snow, hail, dew); Hydrological Cycle; Water in soil. | e; Precipitation types (rain, |
| Unit 4: Light, temperature, wind and fire | (4 lectures) |
| Climatic variables; adaptations of plants to their | |
| variation. | |
| Unit 5: Ecosystem | (8 lectures) |
| Structure; Process; Trophic organization, basic source of energy, | autotrophy, heterotrophy; |
| symbiosis, commensalism, parasitism; food chains and webs; ecol standing crop. | ogical pyramids; biomass, |
| Unit 6: Population ecology | |
| Characteristics and Dynamics .Ecological Speciation | (4 lectures) |
| Unit 7: Plant communities | (8 lectures) |
| Concept of ecological amplitude; Habitat and niche; Characters: analy | tical and synthetic; |
| Ecotone and edge effect; Dynamics: succession - processes, types; cli | max concepts. |
| Unit 8: Functional aspects of ecosystem | (8 lectures) |
| Principles and models of energy flow; Production and p EcologicalBiogeochemical cycles; Cycling of Carbon, Nitrogen and P | |
| Unit 9: Phytogeography | |
| Principles; Continental drift; Theory of tolerance; Endemism; Char terrestrial biomes (one each from tropical, temperate & tundra); I | |

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| Core Course 7 : Econom | ic Botany | | | Credits: 6 |
|--|--------------------------------------|-------------------|-----------------------|--|
| | (Theory-4, | Practi | cal-2) | |
| THEORY | | | | Lectures: 60 |
| Unit 1: Origin of Cultivated Pl Concept of Centres of Origin, major plant introductions; Cro crops/varieties, importance of p | their importance op domestication | and los | | |
| Unit 2: Cereals Wheat and Rice (origin, morph | ology propagein | a & near |). Brief account of m | (6 lectures) |
| wheat and Kice (origin, morph | ology, processing | g & uses |), Brief account of m | mets. |
| Unit 3: Legumes | | | | (6 lectures) |
| Origin, morphology and uses of and ecosystem. | of Chick pea, Pig | geon pea | and fodder legumes. | Importance to man |
| Unit 4: Sources of sugars and s | starches | | | (4 lectures) |
| Morphology and processing of Potato – morphology, propagat | sugarcane, produ | ucts and | by-products of sugare | ane industry. |
| Unit 5: Spices | | | | (6 lectures) |
| Listing of important spices, reference to fennel, saffron, clo | their family and we and black per | l part us oper | sed. Economic impo | rtance with special |
| Unit 6: Beverages | | | | (4 lectures) |
| Tea, Coffee (morphology, proc | essing & uses) | | | |
| Unit 7: Sources of oils and fats | | | | (10 lectures) |
| General description, classific coconut, linseed, soybean, mus General account, extraction me | stard and coconut | t (Botani | cal name, family & u | ications groundnut, ses). Essential Oils: |
| Unit 8: Natural Rubber | | | | (3 lectures) |
| Para-rubber: tapping, processir | g and uses. | | | |
| Unit 9: Drug-yielding plants | | | | (8 lectures) |
| Therapeutic and habit-forming Cannabis; Tobacco (Morpholo | | | | gitalis, Papaver and |
| Unit 10: Timber plants | | | | (3 lectures) |
| General account with special re- | eference to teak a | ind pine. | | |
| Unit 11: Fibers | | | | (4 lectures) |
| Classification based on the or- uses). | gin of fibers; Co | otton, Co | oir and Jute (morphol | ogy, extraction and |

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Core Course 14: Plant Biotechnology

(Theory-4, Practical-2)

THEORY

Unit 1: Plant Tissue Culture

Historical perspective; Composition of media; Nutrient and hormone requirements (role of vitamins and hormones); Totipotency; Organogenesis; Embryogenesis (somatic and zygotic); Protoplast isolation, culture and fusion; Tissue culture applications (micropropagation, androgenesis, virus elimination, secondary metabolite production, haploids, triploids and hybrids; Cryopreservation; Germplasm Conservation).

Unit 2: Recombinant DNA technology

Restriction Endonucleases (History, Types I-IV, biological role and application); Restriction Mapping (Linear and Circular); Cloning Vectors: Prokaryotic (pUC 18 and pUC19, pBR322, Ti plasmid, BAC); Lambda phage, M13 phagemid, Cosmid, Shuttle vector; Eukaryotic Vectors (YAC).

Unit 3:Gene Cloning

Recombinant DNA, Bacterial Transformation and selection of recombinant clones, PCRmediated gene cloning; Gene Construct; construction of genomic and cDNA libraries, screening DNA libraries to obtain gene of interest by genetic selection; complementation, colony hybridization; PCR

Unit 4: Methods of gene transfer

Agrobacterium-mediated, Direct gene transfer by Electroporation, Microinjection, Microprojectile bombardment; Selection of transgenics- selectable marker and reporter genes (Luciferase, GUS, GFP).

Unit 5: Applications of Biotechnology

(14 lectures) Pest resistant (Bt-cotton); herbicide resistant plants (RoundUp Ready soybean); Transgenic crops with improved quality traits (Golden rice); Improved horticultural varieties (Moondust carnations); Role of transgenics in bioremediation (Superbug); edible vaccines; Industrial

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Lectures: 60

Credits: 6

(16 lectures)

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(10 lectures)

(8 lectures)

(12 lectures)



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Agricultural Botany (Organic Farming)

| (5) | Agricultural Botany Credit 2 | Lectures =30 |
|-----|---|-------------------|
| a) | Unit: 1 Plant physiology (Lectures : 11) Plant water relation, stomatal regulation, mineral nutrition, N ₂ cycle. | |
| b) | CO_2 fixation mechanism in C2,C3,C4 and CAM plants. Transport photosynthate. | of water and |
| c) | Plant development Phytohormones : IAA, GA, Cytokinin, ABA, Ethylene regulation in plant system | e; their role and |
| d) | Physiology of flowering and seed development | |
| a) | Unit: 2 Organic farming Microbes used as bio fertilizer (Lectures : 6) | |
| b) | Cyanobacteria isolation and mass multiplication | |
| c) | Mycorrhizal association in Agriculture | |
| a) | Unit:3 Plant breeding, Tissue culture and Biotechnology Mass selection and pure line selection, heterosis breeding | (Lectures : 13) |
| b) | Marker assisted breeding for agronomic crops | |
| c) | Micro propagation techniques, different organ culture | |
| d) | Agrobacterium mediated transformation, vector mediated transformation, | Biolistics |
| e) | GMO, transgenic plant, patent. | |
| 0 | Molecular markers used in Agriculture | |

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| SEC-1 (any one) | |
|---|--|
| (2) Intellectual Property Rights Credits | 2 Lectures: 30 |
| Unit 1: Introduction to intellectual property right (IPR) Concept and kinds. Economic importance. IPR in India and important examples.IPR and WTO (TRIPS, WIPO). | (2 lectures) I world: Genesis and scope, some |
| Unit 2 : Patents Objectives, Rights, Patent Act 1970 and its amendments. Proce of patents. Infringement. | (3 Lectures) edure of obtaining patents, Working |
| Unit 3: Copyrights Introduction, Works protected under copyright law, Rights, Trar | (3 Lectures) nsfer of Copyright, Infringement. |
| Unit4: Trademark Objectives, Types, Rights, Protection of goodwill, Infringement name. | (3 Lectures) , Passing off, Defences, Domain |
| Unit 5: Geographical Indications Objectives, Justification, International Position, Multilateral Position. | (3 Lectures) Treaties, National Level, Indian |
| | |
| Objective, Concept of Traditional Knowledge, Holders, Issue Bio-Piracy, Alternative ways, Protectability, needfor a Sui-Gen | eris regime, Traditional Knowledge |
| Objective, Concept of Traditional Knowledge, Holders, Issue Bio-Piracy, Alternative ways, Protectability, needfor a Sui-Gen on the International Arena, at WTO, at National level, Tradition | es concerning, Bio-Prospecting and eris regime, Traditional Knowledge |
| Objective, Concept of Traditional Knowledge, Holders, Issue Bio-Piracy, Alternative ways, Protectability, needfor a Sui-Gen on the International Arena, at WTO, at National level, Tradition Unit 7: Industrial Designs | es concerning, Bio-Prospecting and teris regime, Traditional Knowledge al Knowledge Digital Library. (2 Lectures) |
| Objective, Concept of Traditional Knowledge, Holders, Issue Bio-Piracy, Alternative ways, Protectability, needfor a Sui-Gen on the International Arena, at WTO, at National level, Tradition | es concerning, Bio-Prospecting and teris regime, Traditional Knowledge al Knowledge Digital Library. (2 Lectures) |
| | es concerning, Bio-Prospecting and beris regime, Traditional Knowledge al Knowledge Digital Library. (2 Lectures) esign Infringement (2 Lectures) hational Position, Plantvarieties hers.National gene bank, Benefit |
| Objective, Concept of Traditional Knowledge, Holders, Issue Bio-Piracy, Alternative ways, Protectability, needfor a Sui-Gen on the International Arena, at WTO, at National level, Tradition Unit 7: Industrial Designs Objectives, Rights, Assignments, Infringements, Defences of D Unit 8: Protection of Plant Varieties Plant Varieties Protection-Objectives, Justification, Intern protection in India. Rights of farmers, Breeders and Researcl | es concerning, Bio-Prospecting and beris regime, Traditional Knowledge al Knowledge Digital Library. (2 Lectures) essign Infringement (2 Lectures) hational Position, Plantvarieties hers.National gene bank, Benefit 2001. |
| Objective, Concept of Traditional Knowledge, Holders, Issue Bio-Piracy, Alternative ways, Protectability, needfor a Sui-Gen on the International Arena, at WTO, at National level, Tradition Unit 7: Industrial Designs Objectives, Rights, Assignments, Infringements, Defences of D Unit 8: Protection of Plant Varieties Plant Varieties Protection-Objectives, Justification, Intern protection in India. Rights of farmers, Breeders and Researcl sharing.Protection of Plant Varieties and Farmers' Rights Act, 2 | es concerning, Bio-Prospecting and teris regime, Traditional Knowledge al Knowledge Digital Library. (2 Lectures) esign Infringement (2 Lectures) national Position, Plantvarieties hers.National gene bank, Benefit 2001. rty Rights (4 Lectures) ta Protection, Protection of Semi- ware and Intellectual Property, |
| Objective, Concept of Traditional Knowledge, Holders, Issue Bio-Piracy, Alternative ways, Protectability, needfor a Sui-Gen on the International Arena, at WTO, at National level, Tradition Unit 7: Industrial Designs Objectives, Rights, Assignments, Infringements, Defences of D Unit 8: Protection of Plant Varieties Plant Varieties Protection-Objectives, Justification, Intern protection in India. Rights of farmers, Breeders and Researcl sharing.Protection of Plant Varieties and Farmers' Rights Act, 2 Unit 9:Information Technology Related Intellectual Proper Computer Software and Intellectual Property, Database and Da conductor chips, Domain Name ProtectionComputer Softw | es concerning, Bio-Prospecting and teris regime, Traditional Knowledge al Knowledge Digital Library. (2 Lectures) esign Infringement (2 Lectures) national Position, Plantvarieties hers.National gene bank, Benefit 2001. rty Rights (4 Lectures) ta Protection, Protection of Semi- ware and Intellectual Property, |

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Skill Enhancement Courses SEC-2 (any one) Credits: 2 (1) Biofertilizers Lectures: 30 Unit 1: General account about the microbes used as biofertilizer - Rhizobium - isolation, identification, mass multiplication, carrier based inoculants, Actinorrhizal symbiosis. (4 lectures) Unit 2: Azospirillum: isolation and mass multiplication - carrier based inoculant, associative effect of different microorganisms. Azotobacter: classification, characteristics - crop response to Azotobacter inoculum, maintenance and mass multiplication. (8 lectures) Unit 3: Cyanobacteria (blue green algae), Azolla and Anabaena azolla eassociation, nitrogenfixation, factors affecting growth, blue green algae and Azolla in rice cultivation. (4 lectures) Unit 4: Mycorrhizal association, types of mycorrhizal association, taxonomy, occurrence anddistribution, phosphorus nutrition, growth and yield - colonization of VAM - isolation and inoculum production of VAM, and its influence on growth and yield of crop plants. (8 lectures) Unit 5: Organic farming - Green manuring and organic fertilizers, Recycling of bio-degradable municipal, agricultural and Industrial wastes - biocompost making methods, types and method of vermicomposting - field Application. (6 lectures)

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(5) Plant Diversity and Human Welfare Credits 2

Unit 1: Plant diversity and its scope- Genetic diversity, Species diversity, Plant diversity attheecosystem level, Agrobiodiversity and cultivated plant taxa, wild taxa. Values and uses of Biodiversity:Ethical and aesthetic values, Precautionary principle, Methodologies forvaluation, Uses of plants, Uses of microbes. (8 lectures)

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

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

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

(6 lectures)

Lectures: 30

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| (3) Natural Resource Management | Credits: 6 |
|--|---|
| (Theory-4, Practical-2) THEORY | Lectures: 60 |
| Unit 1: Natural resources: Definition and types. | (2 lectures) |
| Unit 2: Sustainable utilization Concept, approaches (economic, ecological and socio-cultural). | (8 lectures) |
| Unit 3: Land Utilization (agricultural, pastoral, horticultural, silvicultural); Soil Unit 4: Water Fresh water (rivers, lakes, groundwater, aquifers, watershed); Mar | (8 lectures) |
| Threats and management strategies. | |
| Unit 5: Biological Resources Biodiversity-definition and types; Significance; Threats; Managen IPR; CBD; National Biodiversity Action Plan). | (12 lectures) nent strategies; Bioprospecting; |
| Unit 6: Forests Definition, Cover and its significance (with special reference forestproducts; Depletion; Management. | (6 lectures) to India); Major and minor |
| Unit 7: Energy Renewable and non-renewable sources of energy Unit 8: Contemporary practices in resource management EIA Appraisal, Ecological Footprint with emphasis on carbon footprin management. Unit 9: National and international efforts in resource management | t, Resource Accounting; Waste (8 lectures) |

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Subject: Chemistry

Course Code: Generic Elective-4 (Theo)

4 Credits

(For the students of discipline other than chemistry)

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

2. Environmental Chemistry

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

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

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

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| 4 th Semester: |
|---|
| Discipline 1 (Chemistry): CC-1D (Theo) 4 Credits |
| Course Title: Solutions, Phase Equilibria, Conductance, Electrochemistry & Analytical and |
| Environmental Chemistry |
| Physical Chemistry |
| 2. Environmental Chemistry |
| a. The Atmosphere: composition and structure of the atmosphere; troposphere, stratosphere, |
| mesosphere and thermosphere; ozone layer and its role; major air pollutants: CO, SO2, NOx and |
| particulate matters - their origin and harmful effects; problem of ozone layer depletion; green |
| house effect; acid rain and photochemical smog; air pollution episodes: air quality standard; air |
| pollution control measures: cyclone collector, electrostatic precipitator, catalytic converter. |
| b. The Hydrosphere: environmental role of water, natural water sources, water treatment for |
| industrial, domestic and laboratory uses; water pollutants; action of soaps and detergents, |
| phosphates, industrial effluents, agricultural runoff, domestic wastes; thermal pollution, |
| radioactive pollution and their effects on animal and plant life; water pollution episodes: water |
| pollution control measures : waste water treatment; chemical treatment and microbial treatment; |
| water quality standards: DO, BOD, COD, TDS and hardness parameters; desalination of sea |
| water : reverse osmosis, electrodialysis. |

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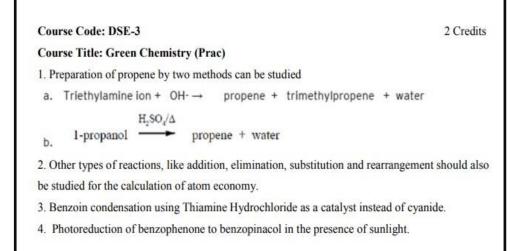


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Course Code: DSE-4

Course Title: Inorganic materials of industrial importance (Theo) Silicate Industries

4 Credits

 Glass: Glassy state and its properties, classification (silicate and non-silicate glasses). Manufacture and processing of glass. Composition and properties of the following types of glasses: Soda lime glass, lead glass, armoured glass, safety glass, borosilicate glass, fluorosilicate, coloured glass, photosensitive glass.

 Ceramics: Important clays and feldspar, ceramic, their types and manufacture. High technology ceramics and their applications, superconducting and semiconducting oxides, fullerenes carbon nanotubes and carbon fibre.

Cements: Classification of cement, ingredients and their role, Manufacture of cement and the setting process, quick setting cements.

Fertilizers

Different types of fertilizers. Manufacture of the following fertilizers: Urea, ammonium nitrate, calcium ammonium nitrate, ammonium phosphates; polyphosphate, superphosphate, compound and mixed fertilizers, potassium chloride, potassium sulphate.

Surface Coatings

Objectives of coatings surfaces, preliminary treatment of surface, classification of surface coatings. Paints and pigments-formulation, composition and related properties. Oil paint, Vehicle, modified oils, Pigments, toners and lakes pigments, Fillers, Thinners, Enamels, emulsifying agents. Special paints (Heat retardant, Fire retardant, Eco-friendly paint, Plastic paint), Dyes, Wax polishing, Water and Oil paints, additives, Metallic coatings (electrolytic and electroless), metal spraying and anodizing.

Batteries

Primary and secondary batteries, battery components and their role, Characteristics of Battery. Working of following batteries: Pb acid, Li-Battery, Solid state electrolyte battery. Fuel cells, Solar cell and polymer cell.

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Discipline 1 (Chemistry): DSE-1A (Theo) 4 Credits Course Title: Transition Metal & Coordination Chemistry, Analytical and Industrial Chemistry

2. Industrial Chemistry

a. Fuels: classification of fuel; heating values; origin of coal, carbonization of coal, coal gas, producer gas, water gas, coal based chemicals; origin and composition of petroleum, petroleum refining, cracking, knocking, octane number, antiknock compounds, kerosene, liquefied petroleum gas (LPG), liquefied natural gas (LNG); petrochemicals (C_1 to C_3 compounds and their uses).

b. Fertilizers: manufacture of ammonia and ammonium salts, urea, superphosphate, biofertilizers.c. Glass and ceramics: definition and manufacture of glasses, optical glass and coloured glass; clay and feldspar, glazing and vitrification, glazed porcelein, enamel.

d. Cement: portland cement: composition and setting of cement, white cement.

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| Course Title: Inorganic materials of industrial importance (Theo) | 4 Credits |
|--|--------------------|
| Silicate Industries | |
| 1. Glass: Glassy state and its properties, classification (silicate and non-s | silicate glasses). |
| Manufacture and processing of glass. Composition and properties of the fol | lowing types of |
| glasses: Soda lime glass, lead glass, armoured glass, safety glass, bo | rosilicate glass, |
| fluorosilicate, coloured glass, photosensitive glass. | |
| 2. Ceramics: Important clays and feldspar, ceramic, their types and ma | nufacture. High |
| technology ceramics and their applications, superconducting and semicon | ducting oxides, |
| fullerenes carbon nanotubes and carbon fibre. | |
| 3. Cements: Classification of cement, ingredients and their role, Manufacture of | f cement and the |
| setting process, quick setting cements. | |

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Fertilizers

Different types of fertilizers. Manufacture of the following fertilizers: Urea, ammonium nitrate, calcium ammonium nitrate, ammonium phosphates; polyphosphate, superphosphate, compound and mixed fertilizers, potassium chloride, potassium sulphate.

Surface Coatings

Objectives of coatings surfaces, preliminary treatment of surface, classification of surface coatings. Paints and pigments-formulation, composition and related properties. Oil paint, Vehicle, modified oils, Pigments, toners and lakes pigments, Fillers, Thinners, Enamels, emulsifying agents. Special paints (Heat retardant, Fire retardant, Eco-friendly paint, Plastic paint), Dyes, Wax polishing, Water and Oil paints, additives, Metallic coatings (electrolytic and electroless), metal spraying and anodizing.

Batteries

Primary and secondary batteries, battery components and their role, Characteristics of Battery. Working of following batteries: Pb acid, Li-Battery, Solid state electrolyte battery. Fuel cells, Solar cell and polymer cell.

Alloys

Classification of alloys, ferrous and non-ferrous alloys, Specific properties of elements in alloys. Manufacture of Steel (removal of silicon decarbonization, demanganization, desulphurization dephosphorisation) and surface treatment (Ar and heat treatment, nitriding, carburizing). Composition and properties of different types of steels.

Catalysis

General principles and properties of catalysts, homogenous catalysis (Hydroformylation, Wacker (Smidt) Process, Monsanto acetic acid process, Wilkinson's catalyst), and heterogenous catalysis (Zeigler-Natta Polymerizations, water gas reaction), catalytic steps and their industrial applications, Deactivation or regeneration of catalysts.

Phase transfer catalysts, application of zeolites as catalysts.

Chemical explosives

Origin of explosive properties in organic compounds, preparation and explosive properties of lead azide, PETN, cyclonite (RDX). Introduction to rocket propellants.

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Subject: Economics

| | | CC10 Development Economics | |
|------|--|--|--|
| ll N | larks: 75 | Credit: 6 | Lectures: 70 |
| 1. | Economic Development | t | (20 Lectures) |
| | development, Inclusive of Broad Indicators of Eco approach-Human Dev Empowerment Measure- | | Growth and Development- ncome-PQLI -Basic needs relopment Index-Gender |
| 2. | Dependency theory of I | rdevelopment as a Historical Proce Baran – Frank's Theory of colonia development (Kay) – Emmanuel's the | al exploitation - Merchant |
| 3. | Characteristics of underd Vicious circle of poverty Process of cumulative car | evelopment and Way to Develop development – Obstacles to underder – Critical minimum effort thesis – L usation – Concept of surplus labour – lopment with unlimited supplies of la | .ow level equilibrium trap – - Surplus labour as potential |
| 4. | Development Strategy | our intensive technique – Choice of t | (8 Lectures) |
| 5. | | ent – Haris-Todaro Model | (5Lectures) |
| 6. | Poverty and Inequality | | (5 Lectures) |
| | | overty- poverty line - poverty measu HPI- Inequality axioms- Common M | |

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| | DES 2 | |
|--|----------------------------------|--|
| E | nvironmental Economics | |
| Full Marks: 75 | Credit: 6 | Lectures: 70 |
| 1. Introduction | | (L- 10) |
| | | ues and problems, Link between |
| economy and environment: b | basic ideas, | |
| 2. Externalities | | (L-18) |
| | | rnalities; types of externalities - ssment -Measurement issues of |
| | alysis (Concept), internalizatio | |
| 3. Property Right | | (L-10) |
| | | on among public, private, open |
| 4. Environmental Policy | | (L-12) |
| Overview, Pigouvian taxes a quotas, optimum pollution co | | mits, choice between taxes and |
| 5. International Environmental | | (L-10) |
| Trans-boundary environment | ntal problems; economics o | f climate change; trade and |
| 6. Institutions | | (L-5) |
| Pollution Control Inst UNEP, IPCC, CPCB, Gr | • | cal-national-International level, |
| 7. Sustainable Development | | (L-5) |
| · Concepts, rules and measure | rement. | X 50 |

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| | Semester – VI | |
|--|-------------------------------|------------------------------------|
| DS | E – 1B : Environmental Eco | onomics |
| Full Marks: 75 | Credit: 6 | Number of Lectures: 70 |
| 1. Introduction | | (L-8) |
| Key environmental issues ideas | and problems, Link betwee | n economy and environment: basic |
| 2. The Theory of Externalities | | (L-12) |
| Market failure in the prese | nce of externalities; | |
| 3. Issues of property right | | (L- 12) |
| Concept of property right access and common proper | | nction among public, private, open |
| 4. The Design and Implementa | ation of Environmental Poli | cy (L- 16) |
| Overview, Pigouvian taxe quotas, | s and effluent fees, tradable | permits, choice between taxes and |
| 5. International Environmenta | al Problems | (L-16) |
| Trans-boundary environm environment. | nental problems; economic | s of climate change; trade and |
| 6. Sustainable Development | | (L- 6) |
| · Concepts, rules and meas | urement. | |

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> Discipline Specific Elective Papers in Semester- V DSE1

Rural Development Full Marks: 75 Credit: 6 Lectures: 70 L-15 1. Rural Development - Background & Concept: Understanding Rural Communities: Structure, Culture and Polity. Development Theories. Lewis model of development, Gandhian model of development; Sustainable Development. Basic concept and issues; Decentralized Governance. Decentralised Planning and Participatory Approach to Rural Development and Role of NGOs 2. Policies and Programmes for Rural Development: L-15 Rural Development Programmes since independence: IRDP RLEGP, NREP; Rural Development Programmes for Sustainable Development and Poverty Alleviation .: MGNREGA, SGSY, IAY, PMGSY; Vulnerable Groups and Rural Development. Issue of empowerment of Rural women : Role of Govt and NGOs 3. Resources and Livelihoods: L-15 Livelihoods: State of Agriculture as a source of livelihood and need for diversified employment Resources. and Environment: forestry, fishery, watershed development and peoples' livelihood Non-Farm Livelihoods: Importance of development of non farm sector; rural industrialization programme 4. Stakeholders in Rural Development: L-10 Rural development and its Stakeholders; Cooperatives and other Formal and Informal Organizations; Credit and Micro-finance 5. Rural Development Approaches In Other Selected Countries L-15 Rural Developments Experiments and Experiences from the following countries: Asian Countries - Bangladesh/ China Latin American Countries - Brazil/ Mexico

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Subject: English

| ✓ CC - IV: British Poetry, Drama (16 th – 17 th Centuries) & | 91 |
|--|---------------------|
| Rhetoric and Prosody | |
| Section A | |
| a) William Shakespeare: 'Sonnet No. 18', 'Sonnet no. 116' | 4(L) + 1(T) |
| b) John Donne: 'Good Morrow', 'The Sun Rising'' | 4(L) + 1(T) |
| Rhetoric and Prosody (Recommended Bose and Sterling) | 12(L) + 3(T) |
| Section B | 10 13 1 1 1 N 1 3 1 |
| 2. William Shakespeare: Macbeth | 20(L) + 3(T) |
| 3. Christopher Marlowe: Edward II (ND) | 16(L) + 3(T) |
| 4. William Shakespeare: Twelfth Night (ND) | 20(L) + 3(T) |
| Topics | 25445389 10 TO |
| Renaissance Humanism, The Stage, Court and City, Religious and | 76 Lectures + |
| Political Thought, Ideas of Love and Marriage, The Writer in Society | 14 Tutorials = 90 |
| Recommended Readings | |
| 1. Pico Della Mirandola. Excerpts from The Oration on the Dignity of | |
| Man, in The Portable Renaissance Reader, ed. James Bruce Ross and | |
| Mary Martin McLaughlin(New York: Penguin Books, 1953) pp. 476-9. | |
| John Calvin. 'Predestination and Free Will', in <i>The Portable Renaissance Reader</i>, ed. James Bruce Ross and Mary Martin McLaughlin (New York: Penguin Books, 1953) pp. 704–11. | |
| Baldassare Castiglione. 'Longing for Beauty' and 'Invocation of Love', in Book 4 of<i>The Courtier</i>, 'Love andBeauty', tr. George Bull (Harmondsworth: Penguin, rpt.1983) pp. 324–8, 330–5. | |
| Philip Sidney. An Apology for Poetry, ed. Forrest G. Robinson (Indianapolis: BobbsMerrill, 1970) pp. 13–18. | |

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| SEMEST | TER III [ONLY TICKED TEXTS] | |
|---------|---|--|
| 1 | GE - 3: CONTEMPORARY INDIA: WOMEN AND EMPOWERMENT | |
| 1. | Social Construction of Gender: | 10(L) +2(T) |
| | > Masculinity, Femininity | |
| | > Patriarchy | |
| | Sex and Gender | |
| | Gender Socialization | |
| | Gender Discrimination | |
| | Gender Stereotyping | |
| Text: | | |
| • | 'Complicating Gender: Rights of Transexuals in India' by Ashwini Sukthankar. From Nivedita Menon. Sexualities: Issues in Contemporary Indian Feminisms | 10(L) + 2(T) |
| 2. | History of Women's Movements in india (Pre- and Post-Independence): > Women and Nationalism | 10(L) = 2(T) |
| | Women and Partition | |
| 2012101 | > Women and Political Participation | |
| Texts: | (any two) | 1001 - 2021 |
| • | "Letters to a Wife: Satyandranath Tagore's Letters to Jynadanandini Tagore" from Epistolary Cultures in 19th Century Bengal, Stree Samya, Kolkata (Forthcoming) | 10(L) + 2(T) |
| | Gholam Murshed. "Chapter Four" from The Reluctant Debutante | |
| | Urvashi Butalia. "Beginnings" from The Other Side of Silence | |
| • | Jashodhara Bagchi and Shubharanjan Dasgupta. The Trauma and the Triumph: Gender and Partition in Eastern India, Vol. 1 ("Introduction") | |
| 3. | Women and Law: | 8 (L) + 2 (T) |
| | > Women and the Indian Constitution | Canal Control |
| | Personal Laws | |
| | > Customary Practices on Inheritence and Marriage | |
| Text: | | |
| | Sudhir Chandra. Enslaved Daughters [From Women and Law in India: An Omnibus] Selections to be taught: (a) Prologue, and (b) Chapter 1 | 8 (L) + 2 (T) |
| (N | lay be supplemented by workshop on legal awareness) | |
| 4 | Women and Violence: | 8 (L) + 2 (T) |
| 4.1 | State Interventions | and the second |
| | > Domestic Violence | |
| | Female Foeticide | |
| | > Sexual Harassment | |
| Texts: | (any one) | |
| | Rokeya Sakhawat Hussain - Sultana's Dream (ND) | 10 (L) + 2 (T) |
| • | Bama Faustina Soosairaj – Karukku (ND) | |
| | | 74 Lectures + |

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| ✓ CC - VIII: British Literature (18 th Century) | 0 |
|---|-----------------------------|
| Section A | |
| 1. William Congreve: The Way of the World (ND) | 25(L) + 5(T) |
| 2. a) Thomas Gray: 'Elegy' b) William Collins: 'Ode to Evening' | 10(L) + 2(T) 4(L) + 1(T) |
| Section B | |
| 3. Daniel Defoe: Moll Flanders(ND) | 14(L) + 3(T) |
| 4. Jonathan Swift: Gulliver's Travels (Books I and II) | 22 (L) + 4 (T) |
| Topics | |
| The Enlightenment and Neoclassicism, Restoration Comedy, The | 75 Lectures + |
| Country and the City, The Novel and the Periodical Press | 15 Tutorials = 90 |
| Recommended Readings | |
| Jeremy Collier. A Short View of the Immorality and Profaneness of the English Stage(London: Routledge, 1996). | |
| Daniel Defoe. 'The Complete English Tradesman' (Letter XXII), 'The Great Law ofSubordination Considered' (LetterIV), and 'The Complete English Gentleman', in<i>Literature and Social Order in</i> <i>Eighteenth-Century England</i>, ed. Stephen Copley(London: Croom Helm, 1984). | |
| Samuel Johnson. 'Essay 156', in The Rambler, in Selected Writings: Samuel Johnson, ed. Peter Martin (Cambridge, Mass.: Harvard University Press, 2009) pp. 194–7; Rasselas Chapter10; 'Pope's Intellectual Character: Pope and DrydenCompared', from The Life of Pope, in The Norton Anthology of English Literature, vol.1, ed. Stephen Greenblatt, 8th edn (New York: Norton, 2006) pp. 2693–4, 2774–7. | |
| 4. From Dryden to Johnson by Boris Ford | |

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| SEMESTER II | |
|---|-------------------|
| | |
| ✓ CC - III: Indian Writing in English | |
| Section A | |
| 1. Lal Behari Day: Govinda Samanta or the History of Bengal | 20 (L) + 4 (T) |
| Raiyat (ND) | |
| 2. Anita Desai: Clear Light of Day | 20 (L) + 4 (T) |
| Section B | |
| 3. a) H.L.V. Derozio: 'Freedom to the Slave' | 3(L) + 1(T) |
| b) Kamala Das: 'Introduction' | 3(L) + 1(T) |
| c) Nissim Ezekiel: 'The Night of the Scorpion' | 3(L) + 1(T) |
| d) Robin S. Ngangom: 'A Poem for Mother' | 3 (L) + 1 (T) |
| 4.Mahesh Dattani:Bravely Fought the Queen (ND) | 22 (L) + 4 (T) |
| Topics | |
| Indian English, Indian English Literature and its Readership, | 74 Lectures + |
| Themes and Contexts of the Indian English Novel, The Aesthetics | 16 Tutorials = 90 |
| of Indian English Poetry, Modernism in Indian English Literature | |
| Recommended Readings | |
| 1. Raja Rao. Foreword to Kanthapura (New Delhi: OUP, 1989) pp. v- | |
| vi. | |
| 2. Salman Rushdie. 'Commonwealth Literature does not exist', in | |
| Imaginary Homelands (London: Granta Books, 1991) pp. 61–70. | |
| 3. Meenakshi Mukherjee. 'Divided by a Common Language', in <i>The</i> | |
| Perishable Empire(New Delhi: OUP, 2000) pp.187–203. | |
| 4. Bruce King. 'Introduction', in <i>Modern Indian Poetry in English</i> (New Dolhi, OUB 2 nd odr, 2005) pp. 1, 10 | |
| Delhi: OUP, 2 nd edn, 2005) pp. 1–10. | |
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| SEMESTERIV | |
|---|-------------------|
| ✓ CC - IX: British Romantic Literature | |
| Section A | |
| 1. a) William Wordsworth: 'Tintern Abbey' | 10(L) + 2(T) |
| b) Samuel Taylor Coleridge: 'Kubla Khan' | 5 (L) + 1 (T) |
| 2. William Blake: 'Lamb', 'Chimney Sweeper' (Songs of Innocence) | |
| 'Chimney Sweeper' (Songs of Experience), 'The Tyger' | 9 (L) + 2 (T) |
| Section B | |
| 3. Jane Austen: <i>Pride and Prejudice</i> (ND) | 18(L) + 3(T) |
| a) George Gordon Byron: Childe Harolde's Pilgrimage(Canto III, verses 36-45) | 15 (L) + 3 (T) |
| b) P.B. Shelley: 'Ode to the West Wind', 'Ozymandias' | 8 (L) + 2 (T) |
| c) John Keats: 'Ode to a Nightingale', 'To Autumn' | 10(L) + 2(T) |
| Topics | |
| Reason and Imagination, Conceptions of Nature, Literature and | 75 Lectures + |
| Revolution, The Gothic, The Romantic Lyric | 15 Tutorials = 90 |
| Recommended Readings | |
| William Wordsworth. 'Preface to Lyrical Ballads', in <i>Romantic</i> <i>Prose and Poetry</i>, ed. Harold Bloom and Lionel Trilling (New York: OUP, 1973) pp. 594–611. | |
| John Keats. 'Letter to George and Thomas Keats, 21 December 1817', 'Letter to Richard Woodhouse, 27 October, 1818', in <i>Romantic Prose and Poetry</i>, ed. HaroldBloom and Lionel Trilling (New York: OUP, 1973) pp. 766–68, 777–8. | |
| 3. Jean-Jacques Rousseau. 'Preface' to <i>Emile or On Education</i> , tr. Allan Bloom (Harmondsworth: Penguin, 1991). | |
| Samuel Taylor Coleridge. <i>BiographiaLiteraria</i>, ed. George Watson (London: Everyman, 1993) chap. XIII, pp. 161–66. | |
| 5. From Blake to Byron by Boris Ford | |
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| SEMESTERIV | |
|---|-------------------|
| ✓ CC - X: British Literature (19 th Century) | |
| Section A | |
| Charles Dickens.<i>Hard Times</i>(ND) | 25 (L) + 5 (T) |
| a)Alfred Tennyson: 'The Lady of Shallot' | 4(L) + 1(T) |
| b) Robert Browning: 'My Last Duchess' | 3 (L) + 1 (T) |
| c) Christina Rossetti: 'The Goblin Market' | 3 (L) + 1 (T) |
| Section B | |
| 3.Charlotte Bronte:Jane Eyre | 25(L) + 5(T) |
| 4. Thomas Hardy: Return of the Native(ND) | 14(L) + 3(T) |
| Topics | 74 Lectures + |
| Utilitarianism, The 19th Century Novel, Marriage and Sexuality, The | 16 Tutorials = 90 |
| Writer and Society, Faith and Doubt, The Dramatic Monologue | |
| Recommended Readings | |
| 1. Karl Marx and Friedrich Engels. 'Mode of Production: The Basis of Social Life', 'The | |
| Social Nature of Consciousness', and 'Classes and Ideology', | |
| in A Reader in Marxist Philosophy, ed. Howard Selsam and | |
| Harry Martel (New York: International Publishers, 1963) pp. | |
| 186–8, 190–1, 199–201. | |
| Charles Darwin. 'Natural Selection and Sexual Selection', in <i>The Descent of Man</i> in <i>The Norton Anthology of English Literature</i>, 8th edn, vol. 2, ed. Stephen Greenblatt (New York: Norton, 2006) pp. 1545–9. | |
| John Stuart Mill. The Subjection of Women in Norton Anthology of English Literature,8th edn, vol. 2, ed. Stephen Greenblatt (New York: Norton, 2006) chap. 1, pp. 1061–9. | |
| 4. From Dickens to Hardy by Boris Ford | |

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| ~ | CC - I: Indian Classical Literature | 6 |
|--------|--|----------------------|
| Sectio | n A | |
| 1. | Vyasa: 'The Book of the Assembly Hall', in <i>The Mahabharata</i> : tr. and ed. J.A.B. van Buitenen (Chicago: Brill, 1975) (ND) | 20 (L) + 4 (T) |
| 2. | Sudraka: Mrcchakatika, tr. M. M.Ramachandra Kale (New Delhi: Motilal Banarasidass, 1962). | 20 (L) + 2 (T) |
| Sectio | n B | |
| 3. | Banabhatta: Kadambari (Chapter I, II) (ND) | 18(L) + 4(T) |
| 4. | Kalidasa: Abhijnana Shakuntalam in The Loom of Time (tr. Chandra Rajan, New Delhi: Penguin, 1989) | 18 (L) + 4 (T) |
| Topics | 5 | 76 Lectures + |
| 8 | The Indian Epic Tradition: Themes and Recensions, Classical Indian Drama: Theory and Practice, Alamkara and Rasa, Dharma and the Heroic | 14 Tutorials = 90 |
| Recon | nmended Readings | |
| 1. | Bharata. Natyashastra, tr. Manomohan Ghosh, vol. I, 2 nd edn (Calcutta: Granthalaya, 1967) chap. 6: 'Sentiments', pp. 100–18. | |
| 2. | IravatiKarve, 'Draupadi', in Yuganta: The End of an Epoch (Hyderabad: Disha, 1991) pp. 79-105. | |
| 3. | J.A. B. Van Buitenen, 'Dharma and Moksa', in Roy W. Perrett, ed., Indian Philosophy, vol. V, Theory of Value: A Collection of Readings | |
| | (New York: Garland, 2000) pp. 33–40. | |
| 4. | Vinay Dharwadkar, 'Orientalism and the Study of Indian Literature', in <i>Orientalism and the Postcolonial Predicament:</i> <i>Perspectives on South Asia</i> , ed. Carol A. Breckenridge and Peter van der Veer (New Delhi: OUP, 1994) pp. 158–95. | |
| 5. | G. N. Devy. Ed. Indian Literary Criticism. Orient Longman. | |

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| SEMESTER I | | | | |
|---|------------------------------------|--|--|--|
| ✓ CC - II: European Classical Literature | | | | |
| Section A | | | | |
| 1. Homer: <i>The Iliad</i> , Book I & II (tr. E. V. Rieu; Harmondsworth: Penguin,1985) (ND) | 20 (L) + 4 (T) | | | |
| Sophocles: Oedipus the King, in Sophocles: The Three Theban Plays(tr. Robert Fagles Harmondsworth: Penguin, 1984) | 20 (L) + 4 (T) | | | |
| Section B | | | | |
| Ovid: Selections from <i>Metamorphoses</i> 'Bacchus', (Book III). Plautus: <i>Pot of Gold</i>, (tr. E. F. Watling; Harmondsworth: Penguin, 1965). (ND) | 15 (L) + 3 (T) 20 (L) + 4 (T) | | | |
| Topics | | | | |
| The Epic, Comedy and Tragedy in Classical Drama, The Athenian City State, Catharsis and Mimesis, Satire, Literary Cultures in Augustan Rome | 75 Lectures + 15 Tutorials = 90 | | | |
| Recommended Readings | | | | |
| Aristotle: <i>Poetics</i>, translated with an introduction and notes by Malcolm Heath, (London: Penguin, 1996) chaps. 6–17, 23, 24, and 26. | | | | |
| Plato: The Republic, Book X, tr. Desmond Lee (London: Penguin, 2007). | | | | |
| Horace: ArsPoetica, tr. H. Rushton Fairclough, Horace: Satires, Epistles and ArsPoetica (Cambridge Mass.: Harvard University Press, 2005) pp. 451–73. | | | | |
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| SEMESTERV | |
|---|-------------------|
| ✓ CC - XII: British Literature (Early 20 th Century) | |
| Section A | |
| 1. Virginia Woolf: Mrs. Dalloway (ND) | 16(L) + 4(T) |
| 2. John Osborne: Look Back in Anger | 20 (L) + 4 (T) |
| Section B | |
| 3. a) W.B. Yeats: 'Leda and the Swan', 'The Second Coming' | 9(L) + 2(T) |
| b)T. S. Eliot: 'The Love Song of J. Alfred Prufrock', 'The Hollow | 15(L) + 3(T) |
| Men' | |
| 4. James Joyce: A Portrait of the Artist as a Young Man (ND) | 14 (L) + 3 (T) |
| Topics | |
| Modernism, Post-modernism and non-European Cultures, The Women's | 74 Lectures + |
| Movement in the Early 20th Century, Psychoanalysis and the Stream of | 16 Tutorials = 90 |
| Consciousness, The Uses of Myth, The Avant Garde | |
| Recommended Readings | |
| 1. Sigmund Freud. 'Theory of Dreams', 'Oedipus Complex', and 'The | |
| Structure of the Unconscious', in The Modern Tradition, ed. | |
| Richard Ellmann et. al. (Oxford: OUP, 1965) pp. 571, 578-80, 559- | |
| 63. | |
| 2. T.S. Eliot. 'Tradition and the Individual Talent', in Norton Anthology | |
| of English Literature, 8th edn, vol. 2, ed. Stephen Greenblatt (New | |
| York: Norton, 2006) pp. 2319–25. | |
| 3. Raymond Williams. 'Introduction', in The English Novel from | |
| Dickens to Lawrence (London: Hogarth Press, 1984) pp. 9-27. | |
| 4. From James to Eliot by Boris Ford | |
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| SEMESTERIII | |
|--|-------------------|
| ✓ CC - VI: Popular Literature | |
| Section A | |
| 1. Lewis Carroll: Alice's Adventures in Wonderland (ND) | 20 (L) + 4 (T) |
| 2. Agatha Christie: The Murder of Roger Ackroyd | 20(L) + 4(T) |
| Section B | 15 (L) + 3 (T) |
| 3. L. Frank Baum: <i>The Wonderful Wizard of Oz</i> (ND) | 20 (L) + 4 (T) |
| 4. Herge: <i>Tintin in Tibet</i> | 20(L) + 4(1) |
| Topics | 75 Lectures + |
| Coming of Age, The Canonical and the Popular, Caste, Gender and | 15 Tutorials = 90 |
| Identity, Ethics and Education in Children's Literature, Sense and | |
| Nonsense, The Graphic Novel | |
| Recommended Readings | |
| 1. Martin Gardner's The Annotated Alice. | |
| 2. SumathiRamaswamy. 'Introduction', in Beyond Appearances?: | |
| Visual Practices and Ideologies in Modern India (Sage: Delhi, | |
| 2003) pp. xiii–xxix. | |
| 3. Leslie Fiedler. 'Towards a Definition of | |
| Popular Literature', in Super Culture: American Popular | |
| Culture and Europe, ed. C.W.E. Bigsby (Ohio: Bowling Green | |
| University Press, 1975) pp. 29–38. | |
| 4. Felicity Hughes. 'Children's Literature: Theory and Practice', | |
| English Literary History, vol. 45, 1978, pp. 542–61. | |
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Subject: Political Science

| CC-8: INTERNATIONAL RELATIONS | 6 Credits | Total Classes : 60 |
|---|------------------|---------------------------|
| 1. Nature and Scope of International Relations; Idealist IR. | , Realist, and I | Neo-Realist approaches in |
| 2. National Power: Concepts and Elements | | |
| 3. Balance of Power and Collective Security | | |
| 4. Origin and End of the Cold War | | |
| 5. Post Cold War global issues: (a) Globalization (b) Hu | man Rights (c |) Terrorism |
| 6. Disarmament: NPT,CTBT, and NSG. | | |
| 7. Foreign Policy and Diplomacy: Concepts, Determina | nts and Object | ives |
| 8.Indian Foreign Policy: Basic Tenets. | | |

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CC-9: SOCIOLOGY AND POLITICS 6 Credits Total Classes : 60 1. Political Sociology and Sociology of Politics: Nature and Scope 2. Political Culture: Meaning, Components and Types; Political Socialization: Meaning, **Role and Agencies** 3. Political Participation: Meaning and Components 4. Concepts of Power and Authority; Types of Authority 5. Feminism: Meaning, Significance and Different Schools 6. Environment and Politics; Environment Movements: An Overview; Eco-Feminism 7. Religion and Politics; Concept of Secularism 8. State and Civil Society: Media, Society and Politics SEC-2 : Democratic Awareness Through Legal Literacy 2 Credits Total Classes 30 1 Constitution – fundamental rights, fundamental duties, other constitutional rights 2 Laws relating to dowry, sexual harassment and violence against women - laws relating to consumer rights and cyber crimes 3 Anti-terrorist laws: Implication for security and human rights 4 System of courts/ tribunals and their jurisdiction in India - criminal and civil courts,

writ jurisdiction,

specialized courts such as juvenile courts, Mahila courts and tribunals

5 Alternate dispute such as lokadalats, non-formal mechanisms

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Subject: History

Discipline Specific Elective Semester-V Paper –II

6. Changes in the 20th Century

- a) Influence of Nationalism on Literature; Introduction of popular Utsab and Melas
- b) Evolution Theatres in the 20th Century
- c) Visions of integration and humanity Rabindranath, KaziNazrul and Sarat Chandra Chattopadhyay
- d) Social and cultural impact of the Partition; changing role of Women in Society.

Subject: Sanskrit

| CC -3 | Classical Sanskrit Literature(Prose) | Core Course | 5-1-0 | 6 | 75 |
|-------|---|----------------|-------|---|----|
| | Section-A (15 classes) Śukanāsopadeśa- Kādambarī (As in Sanskrit Pāţhamālā, B.U. (evam samatikrāmatsubhrātara ucchedyāh) | Course | | | |
| | Section-B (15 classes) Daśakumāracarita-(Rājavāhanacarita) As in Sanskrit Pāṭhamālā ,BU | | | | |
| | Section-C (30 classes) (I)The History of Sanskrit Literature (Prose). (Subandhu,Daṇḍin,Bāṇabhaṭṭa) (II) The History of Sanskrit Literature (Fables) (Pañcatantra,Hitopadeśa,Vetālapañcaviṁśati,Siṅhāsanadvāt riṁśikā, Puruṣaparīkṣā) | | | | |

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| CC -5 | Classical Sanskrit Literature (Drāmā) | Core | 5-1-0 | 6 | 75 |
|-------|--|--------|-------|---|----|
| | | Course | | | |
| | Section-A (40 classes) | | | | |
| | (I)Abhijñānaśakuntala (I-V) | | | | |
| | Section-B (20 classes) | | | | |
| | (I)The History of Sanskrit Literature (Drāmā) | | | | |
| | (Bhāsa, Kālidāsa, Śūdraka, Viśākhadatta, Śrīharṣa, | | | | |
| | Bhavabhūti, Bhattanārāyaņa) | | | | |

| DSE | Dramaturgy Sāhityadarpaņa - Chapter- VI (60 classes) | | 5-1-0 | 6 | 75 |
|-----|---|----------|-------|---|----|
| | (Rūpaka,Nāndī,Vrttis(withoutAmgas),Prastāvanā,Arthaprak | Discipli | | | |
| | rti, Arthopaksepaka, Patākāsthānakas, Kārya, Avasthā, | ne | | | |
| | Sandhi(without Amgas) & Nāțikā | Specific | | | |
| | | Elective | | | |
| | | | | | |

| CC -3 | Classical Sanskrit Literature(Prose) | Core Course | 5-1-0 | 6 | 75 |
|-------|---|----------------|-------|---|----|
| | Section-A (15 classes) Śukanāsopadeśa- Kādambarī (As in Sanskrit Pāţhamālā, B.U. | | | | |
| | (evam samatikrāmatsubhrātara ucchedyāḥ) Section-B (15 classes) | | | | |
| | Daśakumāracarita-(Rājavāhanacarita) As in Sanskrit Pāṭhamālā ,BU | | | | |
| | Section-C (30 classes) (I)The History of Sanskrit Literature (Prose). (Subandhu,Daṇḍin,Bāṇabhaṭṭa) (II) The History of Sanskrit Literature (Fables) (Pañcatantra,Hitopadeśa,Vetālapañcaviṁśati,Siṅhāsanadvāt riṁśikā, Puruṣaparīkṣā) | | | | |

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| Course Code | Course Title | Course Type | L.T.P | Credit | MarkS |
|----------------|--|----------------|-------|--------|-------|
| CC -11 | Vedic Literature | Core Course | 5-1-0 | 6 | 75 |
| | Section-A (40 classes) Rgvedasamhitā –(Agnisūkta-(2/6) , Indrasūkta- (2/12), Akṣasūkta-(10/34) , Devīsūkta-(10/125) | | | | |
| | Section-B (10 classes) Declension of a-stems, Vedic Subjunctive, Vedic Infinitive, The Vedic Accent & Pada-pāțha | | | | |
| | Section-C (10 classes) Isopanisad - Whole | | | | |

| Political Thought in Sa | nskrit Literature | | | |
|--------------------------|---------------------------|--|--|--|
| I.Mudrārākṣasa - (Acts-l | & II) (20 classes) | | | |
| II. Arthaśāstra- | Śāsanādhikāra(20 classes) | | | |

| CC-7 | Indian Social Institution and Polity | Core Course | 5-1-0 | 6 | 75 |
|------|--|----------------|-------|---|----|
| | Section-A (35 classes) Manusaṃhitā –Chapter-VII State Politics-(1-15), Upāyacatuṣṭaya-(106-110) &Sāḍguṇya –(161-170) | | | | |
| | Section-B. Arthaśāstra- (Dūtapraņidhi) (25 classes) | | | | |

Subject: Zoology

Ecology Credits 2 List of Practical 1. Study of life tables and plotting of survivorship curves of different types from the hypothetical/real data provided 2. Determination of population density in a natural/hypothetical community by quadrate method and calculation of Shannon-Weiner diversity index for the same community 3. Study of an aquatic ecosystem: Phytoplankton and zooplankton, Measurement of area, temperature, determination of pH and free CO2 4. Report on a visit to National Park/Biodiversity Park/Wild life sanctuary/ Biodiversity Centre/ Any Museum/Sea shore

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

Unit 5: Applied Ecology Wildlife Conservation (in-situ and ex-situ conservation). Management strategies for tiger conservation; Wild life protection act (1972)

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Unit5:Aimsandobjectivesofwildlifeconservation

- 1. Wild life conservation in India-through ages; different approaches of wildlife conservation;
- 2. Modes of conservation ;in- situ conservation and ex-situ conservation
- 3. Necessity for wildlife conservation

Subject: Geography

| Theoretical Credit 4 Total Marks: 40 End Term Examination Time: 2 hours |
|---|
| Environmental Issues |
| 1. Geographers' Approach to Environmental Studies |
| 2. Changes in Perception of Environment in different stages of Human Civilization |
| 3. Ecosystem: Concept, Structure and Functions |
| 4. Environmental Degradation and Pollution: Water and Air |
| 5. Environmental Issues related to Agriculture |
| 6. Urban Environmental issues related to Waste Management |
| 7. Concept and Issues related to Bio-diversity |
| 8. Environmental Programs and Policies on Forest and Wetland: National and Global |
| |
| CC 10 (Practical) : ENVIRONMENTAL GEOGRAPHY Credit: 2 |
| Total Marks: 20 {10+ 10(5+5)} End Term Examination Time: 2 hours |
| Pattern of Setting Questions: |
| 2 questions to be answered, each question carries 5 Marks, Total 10 Marks; |
| Evaluation of Laboratory Note Book 5 Marks |
| Viva-Voce 5 Marks |
| Environmental Geography (Practical) |
| 1. Preparation of questionnaire for perception survey on environmental problems |
| 2. Environmental Impact Assessment: Leopold Matrix |
| 3. Quality assessment of soil using field kit: pH and NPK |
| 4. Interpretation of air quality using CPCB / WBPCB data |
| Internal Assessment: 15 (Assessment 10 and Attendance 05) Marks |
| |

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