Criterion I :
Curricular Aspects

1.3 Curriculum Enrichment

1.3.1 Institution Integrates crosscutting Issues relevant to Professional Ethics, Gender, Human Values, Environment and Sustainability into the Curriculum

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(91)03244-275251

SONAMUKHI COLLEGE

P.O. - Sonamukhi, Dist. - Bankura,
West Bengal, India - 722 207

NAAC : B(2.37) 2016 - 1st Cycle AISHE:: C-44762

1.3.1 List and description of courses addressing Gender, Environment and Sustainability, Human Values and Professional Ethics into the Curriculum prescribed by the affiliating Bankura University

Programme	Semester	Course Code	Course Title	Issue Addressed				
				Gender	Environment and Sustainability	Human Values	Professional Ethics	Health and Nutrition
Botany	II	SH BOT/203/GE-2	Plant Ecology, Morphology & Taxonomy		✓			
Botany	II	SPBOT/201/C-1B	Plant Ecology, Morphology & Taxonomy		✓			
Botany	III	SHBOT/305/SEC-1	Bio-fertilizer		✓			
Botany	III	SPBOT/304/SEC-1	Bio-fertilizer		✓			
Botany	V	SHBOT/503/DSE-1	Natural Resource Management		✓			
Botany	VI	SHBOT/603/DSE-3	Industrial & Environmental Microbiology		✓			
English	III	UG-ENG-304/GE-3	Contemporary India: Women and Empowerment	✓		✓	✓	
English	III	APENG-301/C-1C	Contemporary India: Women and Empowerment	✓		✓	✓	
English	V	UG-ENG-502/C-12	Women's Writing	✓		✓	✓	
Physics	III	SHPHS/ 305/SEC-1	Renewable Energy and Energy Harvesting		√			
Political Science	V	AHPLS - 503/DSE-1	Human Rights in a Comparative Perspective			✓		
Political Science	V	APPLS - 503/GE-1	Human Rights, Gender & Environment	✓	✓	✓	✓	
Political Science	VI	AHPLS - 603/DSE-3	Women, Power & Politics			✓		
History	V	APHST 503GE-1	Women's Studies in India	✓				
History	VI	APHST 603GE-2	Gender and Education in India	✓				
Philosophy	VI	APPHI 603 SEC-4	Philosophy of Human Rights			√		
Philosophy	II	APPHI 603 GE-2	Feminism	√				

SONAMUKHI COLLEGE ESTD-1966 BANKURA

Education	V	AH/EDN/503/DSE-1	Environmental Education		✓			
Education	V	AH/EDN/504/DSE-2	Mental Health and Hygiene			✓	✓	✓
Education	V	AH/EDN/502/C-12	Educational Management			✓	✓	
Education	V	AP/EDN/503/GE-1	Mental Health Education			✓	✓	
Education	VI	AP/EDN/603/GE-2	Value Based Education		✓	✓		
Education	VI	AH/EDN/604/DSE-4	Value Education		✓	✓		
Zoology	III	UG/ZOO/ 304/GE-3	Environment and Public Health		✓	✓		✓
Zoology	I	UG/104/AECC-1	Environmental Studies		✓			
Zoology	I	UG-SH/ZOO/102/C-2	Perspective in Ecology		✓	✓		
Zoology	I	UG/104/AECC-ENV	Environmental Studies		✓			
Zoology	VI	UGP/S.C. / 601/DSE1B	Aquatic Biology		✓			
Economics	V	UGP/ECO/501/DSE-1A	Environmental Economics		√			√
ENVS	I	ACSHP/104/AECC1	Environmental Studies		√	√		√
Social Work	I	UG/SW/101 C-1	History, Philosophy and Ideology of Social Work			✓	✓	
Socia lWor k	II	UG/SW/201 C-3	Understanding of Society for Social Work Practice	✓		✓	✓	
Socia lWor k	III	UG/SW/301 C-5	Working with Individuals		✓	✓	✓	✓
Social Work	III	UG/SW/302 C-6	Working with Groups		✓	✓	✓	✓
Socia lWor k	III	UG/SW/304 SEC-1	Social action and social Moes	✓		✓		
Social Work	IV	UG/SW/401 C-8	Working With Communities		✓			✓
Social Work	IV	UG/SW/402 C-9	Understanding Psychology for Social Work Practice	✓		✓	✓	✓

SONAMUKHI COLLEGE ESTD-1966 BANKURA SONAMUKHI

Social Work	V	UG/SW/504 DSE-2	Rural and Urban Development	✓		✓	✓	✓
Social Work	V	UG/SW/503 DSE-1	Social Work with Elderly		✓	✓		
Social Work	VI	UG/SW/604 DSE-4	Human Rights and Social justice	✓		✓	✓	

Principal
Sonamukhi College
Sonamukhi, Bankura

SONAMUKHI COLLEGE ESTD-1969 SONAMUKHI BANKURA

Compilation made

Code of Conduct

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SONAMUKHI COLLEGE

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AISHE :: C-44762

7.1.10 – The Institution has a prescribed code of conduct for students, teachers, administrators and other staff and conducts periodic programmes in this regard.

CAMPUS CODE OF CONDUCT FOR STUDENTS
Sonamukhi College, Sonamukhi, Bankura

1. Any types of ragging is prohibited within the College campus and in such cases students may drop a written complaint in the Complain Drop Box of the College. If found guilty the Institution suspends the concerned students.
2. Duty of every student is to attend their classes punctually and regularly as attendance of 75% working days is a compulsory measure and cheating or copying during examinations is forbidden.
3. During the college – hour's unnecessary gossip, loitering, smoking, drinking alcohol, using cell phones is strictly prohibited.
4. No capitation fee is allowed in the college.
5. Grievance redressal mechanism of the college is so rigid to control any types of nuisance, social discrimination within the college premises.
6. The College Governing Body, the Principal and the Grievance Redressal Cell, Bishakha Cell is strict to control the serious breaches of discipline, misconduct and sexual harassment.
7. Academic dishonesty is forbidden and the students are expected to uphold integrity to reach the educational goals.
8. Students are to follow the quotes from inspirational philosophers as affixed on college – walls.

7.10.21

Principal
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AISHE :: C-44762

CODE OF CONDUCT OF TEACHERS
Sonamukhi College, Sonamukhi, Bankura

1) Participating in any private coaching class is prohibited.
2) In accordance with the noble profession of teaching, the teacher is expected to have a decent and dignified behaviour and conduct.
3) The teacher shall always think of educational betterment and refrain from discrimination and disintegration.
4) As a vigilant citizen the teacher shall render voluntary service for community development.
5) A teacher shall always impart adequate knowledge and guide the students to become an ideal human being.

CODE OF CONDUCT OF NON – TEACHING STAFF
Sonamukhi College, Sonamukhi, Bankura

1) Regular and punctual attendance for smooth running of college.
2) Availability during working hours.
3) Maintenance of calm, cool and congenial atmosphere within the campus.
4) To take prior permission before being absent from duties.
5) Always needed vigilance.

CODE OF CONDUCT OF PRINCIPAL
Sonamukhi College, Sonamukhi, Bankura

1) As administrator to impart Good Governance.
2) Co-ordinating different sectors and committees for developmental planning.
3) To ensure equality, justice, unity, integrity and well-being.
4) Observance and implementation of orders from Higher Authority from time to time.
5) Transparency in every spheres.

7/10/21

Principal
Sonamukhi College
P.O- Sonamukhi, Dt- Bankura

Seminars, Workshop of Women Cell, NSS, Prevention of Sexual Harassment Cell etc.


UGC SPONSORED NATIONAL SEMINAR
SONAMUKHI COLLEGE


UGC SPONSORED NATIONAL LEVEL SEMINAR
MICROFINANCE AND RURAL
LIVELIHOOD DIVERSIFICATION
February 27 - 28, 2017
Organised by :-
DEPARTMENT OF COMMERCE
&
DEPARTMENT OF ECONOMICS
SONAMUKHI COLLEGE
SONAMUKHI, BANKURA, W.B.
In collaboration with
D.R.D. CELL
BANKURA ZILLA PARISHAD
VENUE
SONAMUKHI COLLEGE


UGC SPONSORED NATIONAL SEMINAR
Vice-Chancellor
Bankura University


UGC SPONSORED NATIONAL SEMINAR
ON
"PLANTS, THE NATURAL WONDER :
ISSUES & CONCERN"
4-5 October, 2018
SONAMUKHI COLLEGE
SONAMUKHI COLLEG

Celebration of International women's day
Date-8th March, 2021

This year's International Women's Day is like no other. As countries and communities start to slowly recover from a devastating pandemic, we have the chance to finally end the exclusion and marginalization of women and girls. But to do that, we need immediate action. Women *must* have the opportunity to play a *full* role in shaping the pivotal decisions being made right now as countries respond to and recover from the COVID-19 pandemic – *choices* that will affect the wellbeing of people and the planet for *generations* to come.

To do this, we must break down the deep-seated historic, cultural, and socio-economic barriers that prevent women from taking their seat at the decision-making table to make sure that resources and power are more equitably distributed. For instance, across the world, women remain concentrated in the lowest paid jobs, many in extremely vulnerable forms of employment. The United Nations Development Programme (UNDP) is working with countries across the globe to address these inequalities. It would also contribute to the *economic security* and *independence* that is necessary for women to engage more deeply in the decisions that could change their future.

Despite the barriers, women, especially young women, are at the forefront of diverse and inclusive movements for social change -- online and in the streets. That includes their leading role in taking a stand against climate change, fighting for a green economy and pushing for women's rights. And we know that more inclusive leadership and representation leads to stronger democracies, better governance, and more peaceful societies. To *build forward better* from the COVID-19 crisis, and to get the Global Goals firmly back on track, we cannot simply return to the world we had before. That means *shattering* the barriers that hold women and girls back. This year's International Women's Day is a rallying cry for Generation Equality. It is time to finally fully harness the power of women's leadership to realise a more equal, more inclusive and more sustainable future.

NSS volunteers of Sonamukhi College took the courage to let everyone know the importance of women coming forward for the development of the country. The volunteers prepared handwritten posters and through still pictures and videos spread the message on this day. A total of 15 volunteers took part in online mode.

Participation in Quiz competition by NSS volunteer
1st October, 2020

On 1st October, 2020, our beloved volunteer from NSS Unit-II took part in the state level quiz competition organized by West Bengal State AIDS prevention & Control Society, Department of Health & Family Welfare, Govt. of West Bengal. He was one of the five participants who represented Bankura University NSS. The team ranked 2nd in the competition and garnered certificates and prizes on the occasion of National Youth Day.

WBSAP&CS West Bengal State AIDS Prevention & Control Society
Department of Health & Family Welfare
Govt. Of West Bengal

NACO
National AIDS Control Organisation
India's Voice against AIDS
Ministry of Health & Family Welfare, Government of India
www.naco.gov.in

Certificate of Participation

This is to Certify that Kazi Warish

From Sonamukhi College *College under* Bankura University

University has been participated in the State Level Quiz competition on 1st October 2020 (NVBDD) and placed 2nd *Position. We wish his/her success in every field of life.*

WBSAP&CS

Piyali Das
Asst. Director (YA)
WBSAP&CS

S. Samanta
Sumita Samanta
Dy. Director (IEC)
WBSAP&CS

Dr. Gopal Chadra Biswas
Dy. Director (Blood Safety)
WBSAP&CS

Fit India
Freedom Run

Fit India Freedom Run
From 15th August to 2nd October, 2021
Organized by DEPARTMENT OF YOUTH AFFAIRS, GOVT OF INDIA

Ministry of Youth Affairs and Sports, Government of India launched Fit India Youth Club and in this context directed to continue Fit India Freedom Run upto 2nd October 2020.
With the objective to promote fitness, all the NSS Units were urged to organize Fit India Freedom Run for engagement of NSS volunteers in a large scale. It was informed that NSS volunteers can run individually or in groups with proper precautions hygiene and maintenanoe of social distancing as well as following safety advisories and guidelines issued by Government and District Administration.
Some important points for NSS Volunteers to participate in Fit India Freedom Run were:

- They can run a route of their choice, at a time that suits them;
- They should run their own race at their own pace;
- They will track kms manually or by using any tracking app or GPS watch;
- They have to post their pictures on their social media

Accordingly, the NSS volunteers of Sonamukhi College were involved in this programme. They posted pictures on their social media while performing the fitness activities and they were duly forwarded to the concerned department of Bankura University for necessary action.


REDMI NOTE 7S
AI DUAL CAMERA

Celebration of International Yoga Day

Celebration of international Yoga Day
Date- 21st June, 2021

The **International Day of Yoga** has been celebrated annually on 21 June since 2015, following its inception in the United Nations General Assembly in 2014.Yoga is a physical, mental and spiritual practice which originated in India. The Indian Prime Minister in his UN address in 2014, had suggested the date of 21 June, as it is the longest day of the year in the Northern Hemisphere and shares a special significance in many parts of the world. Following this initial proposal, the UN adopted the draft resolution, entitled Day of Yoga", on 2014. The consultations were convened by the delegation of India. In 2015 Reserve Bank of India issued a 10 rupees commemorative coin to mark the International Day of Yoga. In April 2017, UN Postal Administration (UNPA) issued 10 stamps on Asanas on a single sheet to mark International Day of Yoga.

By understanding the importance of this day, NSS volunteers of the college on 21st June, 2021, performed different asanas in their home and captured still pictures. Many of the important postures like padmasana, matsasana, bhujanghasana and many more were performed beautifully by the students. A total of 20 volunteers took part in the programme and made it successful.

INTERNATIONAL YOGA DAY CELEBRATION (Date- 21/06/2020)

21ST June of 2020 added a new feather to the crown of NSS Unit of Sonamukhi College as on that day, the Units of NSS celebrated The International Yoga Day in a befitting manner. On that day the volunteers of

NSS performed different types of Yoga in a dazzling manner. All the performances occurred in the Seminar Room. The observers were charmed and spell- bound visualizing the mind-blowing performances. Our Principal sir also delivered a valuable speech on the importance of Yoga in the present stressful and tensional world. All enjoyed the ceremony with their heart's content. Total 12 volunteers took part in the programme.

Green Audit

ENVIRONMENTAL ASSESSMENT REPORT

SONAMUKHI COLLEGE

Sonamukhi, Bankura

ACADEMIC SESSION 2018-2019

Campus Area:

Sonamukhi College has 29056.42 sq.mts areas with green fields, gardens in front side and a medicinal plant garden in the central position. The campus is decorated with flowering plants and harbor many large trees. Moreover, the campus is green having perfect match with adjacent deep forests.

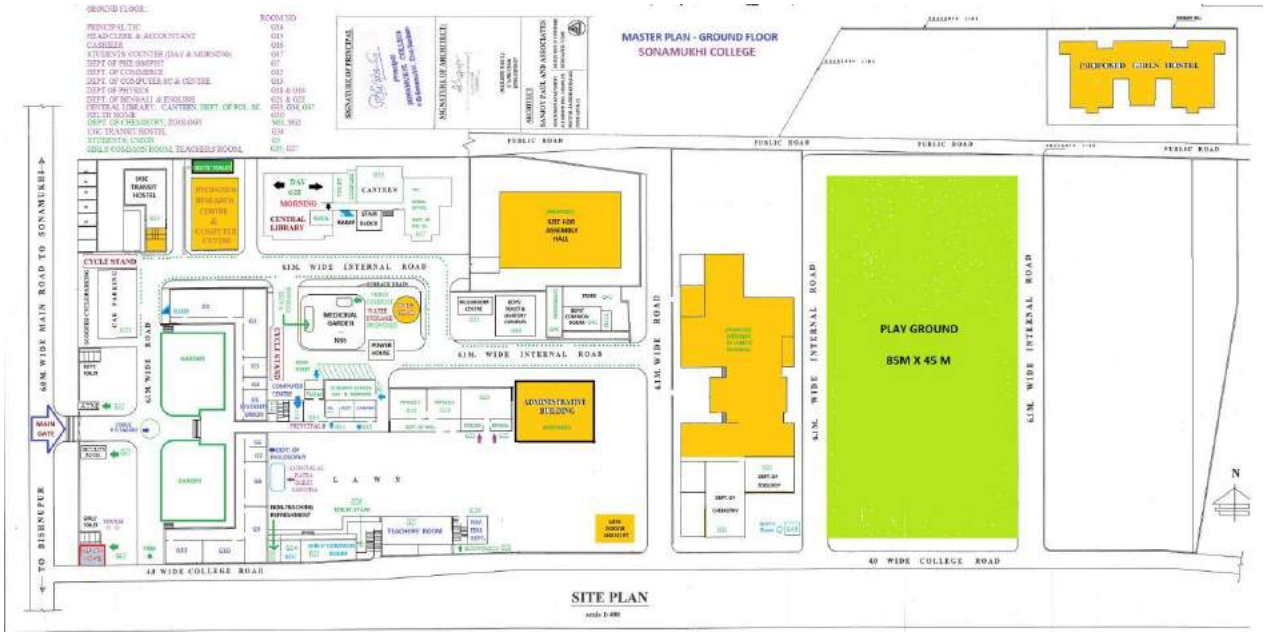
Vision:

In an eco-friendly geographical location & within a backward socio-economic rural base, the college started its journey on 17th August, 1966. The conceptualization to establish this college was to create a class of intellectuality, morally and spiritually sound and committed citizen, who will become a human resource of high caliber, to cater to the needs of the society and the country as a whole.

Mission:

The mission of the college encompasses the following ideals:

- To spread higher education among the first generation learners with particular emphasis on SC and SC students who form a large part of the Sonamukhi Block and broadly at Bankura district.
- To provide qualitative education mainly to the students coming from the poor, backward community of Sonamukhi.
- To motivate the students in academic events, cultural events and sports.
- To uplift ecological and environment awareness, to infix values like self-respect, social quality, secularism, brotherhood and national integration by organizing various activities in the college.
- To orient discipline among the students in terms of sincerity, regularity, punctuality, humanity and inspire them to develop socially responsible citizen of India.
- To drive the students as well as the teachers into innovative research by organizing Seminar lectures and workshops with the speeches of eminent persons of different fields.
- Moreover, to qualify the students to reach national and global standard.



Map of the Campus of Sonamukhi College

Google Map of the Campus of Sonamukhi College

List of Plants in College Campus:

BOTANICAL NAME	FAMILY
1. *Polyalthia longifolia*	Anonaceae
2. *Tectona grandis*	*Verbenaceae*
3. *Roystonia regia*	Arecaceae
4. *Mangifera indica*	Anacardiaceae
5. *Mussandus frondus*	Rubiaceae
6. *Acacia moliniformis*	Mimosaceae
7. *Croton bonplandianum*	Euphorbiaceae
8. *Cycas circinalis*	Cycadaceae
9. *Duranta pulmieri*	Verbenaceae
10. *Gardenia latifolia*	Rubiaceae
11. *Hibiscus rosa-sinensis*	Malvaceae
12. *Ixora parviflora*	Rubiaceae
13. *Thuja oxidentalis*	Cupressaceae
14. *Rosa indica*	Rosaceae
15. *Euphorbia hirta*	Euphorbiaceae
16. *Caesalpinia pulcherima*	Caesalpinaceae
17. *Canna indica*	Cannaceae
18. *Melia azadirachta*	Meliaceae
19. *Araucaria excelsa*	Araucariaceae
20. *Chrysanthemum sp.*	Asteraceae
21. *Switenia mehagini*	Meliaceae
22. *Sida cordifolia*	Malvaceae
23. *Madhuca indica*	Sapotaceae
24. *Borasus flabelifer*	Arecaceae
25. *Leucus aspera*	Lamiaceae
26. *Zymnema sylvestris*	Apocynaceae
27. *Datura metel*	Solanaceae
28. *Oldenlandia corymbosa*	Rubiaceae
29. *Adhatoda vasica*	Acanthaceae
30. *Bacopa moneri*	Scrophulariaceae
31. *Linderdia sp*	Scrophulariaceae
32. *Ficus religiosa*	Moraceae
33. *Peltoforum sp.*	Fabaeae
34. *Eupatorium sp.*	Asteraceae
35. *Michenia sp.*	Asteraceae
36. *Spermacoce hispida*	Rubiaceae
37. *Clerodendron sp.*	Acanthaceae
38. *Achyranthus aspera*	Amaranthaceae
39. *Spilanthus sp.*	Asteraceae
40. *Cassia sophera*	Caesalpiniaceae
41. *Cassia oxidentalis*	Caesalpiniaceae

42. Cassia tora	Caesalpiniaceae
43. Vernonia sp.	Asteraceae
44. Blumia sp.	Asteraceae
45. Paperomia sp.	Piperaceae
46. Scoparia dulcis	Scrophulariaceae
47. Sida cordifolia	Malvaceae
48. Cyperus sp.	Cyperaceae
49. Cynodon sp.	Cyperaceae
50. Cephalandra indica	Cucurbitaceae
51. Tephrosia purpurea	Fabaceae
52. Crotalaria pallida	Fabaceae
53. Jatropha sp.	Euphorbiaceae
54. Calotropis procera	Asclepiadaceae
55. Eragrostis sp.	Poaceae
56. Vitex negundo	Verbenaceae
57. Ruellia prostrata	Acanthaceae
58. Eclipta alba	Asteraceae
59. Centella asiatica	Apiaceae
60. Aloe vera	Asphodelaceae
61. Rhoeo discolor	Commelinaceae
62. Curcuma longa	Zingiberaceae
63. Curcuma amada	Zingiberaceae
64. Mentha spicata	Lamiaceae
65. Dryospyros melanoxylon	Ebenaceae
66. Syzygium aromaticum	Myrtaceae
67. Gmelina arboria	Verbenaceae

MEDICINAL PLANTS IN COLLEGE MEDICINAL GARDEN

BOTANICAL NAME	**FAMILY**
1.*Centella asiatica*	Apiaceae
2.*Elaeocarpus ganitrus*	Elaeocarpaceae
3.*Averrhoa carambola*	Oxalidaceae
4. *Calotropis gigantia*	Apocynaceae

5. *Terminallia chebula*	Combretaceae
6. *Impatiens psillacina*	Balsaminaceae
7. *Piper longum*	Piperaceae
8. *Syzygium aromaticum*	Myrtaceae
9. *Citrus maxima*	Rutaceae
10. *Citrus limon*	Rutaceae
11. *Citrus limonia*	Rutaceae
12. *Stevia rebandiana*	Asteraceae
13. *Ayapana triplinervis*	Asteraceae
14. *Mentha spicata*	Lamiaceae
15. *Elettaria cardamomum*	Zingiberaceae
16. *Zingiber officinalis*	Zingiberaceae
17. *Mimosa pudica*	Fabaceae
18. *Cinnamomum tamala*	Lauraceae
19. *Murraya koenjgii*	Rutaceae
20. *Citrus aurantifolia*	Rutaceae
21. *Aloe vera*	Asphodelaceae
22. *Ocimum basilicum*	Lamiaceae
23. *Ocimum sanctum*	Lamiaceae
24. *Datura metel*	Solanaceae
25. *Catharanthus roseus*	Apocynaceae
26. *Aegle marmelos*	Apocynaceae
27. *Adhatoda vasica*	Acanthaceae
28. *Centella asiatica*	Apiaceae

29.	*Jatropha gossypifolia*	Euphorbiaceae
30.	*Bacopa moneri*	Scrophulariaceae
31.	*Emblica officinalis*	Euphorbiaceae

List of Animals in College Campus:

Parasitic Protozoa- *Gregarina sp.*

Phleobum sp.

Quadruspinospora sp.

Stylocephalus sp.

Nyctotherus sp.

Annelids- *Pheretima* sp.

Arthopods- Butterflies, several insects and Honey bees.

Birds-

1.	Domestic pigeon	*Columba livia domestica*
2.	Yellow-footed green pigeon	*Treron phoenicoptera*
3.	Rufous Turtle Dove	*Streptopelia orientalis*
4.	Parrot	*Psittacula euparia*
5.		
6.	Koel	*Eudynamis scolopaceus*
7.	woodpecker (Kathphorwa)	*Dendrocopus mahrattensis*
8.	Common house sparrow	*Passer domesticus*
9.	Common house crow	*Corvus splendens*

10. Green bee-eater	*Merops orientalis*
11. White-eared Bulbul	*Pycnonotus leucotis*
12. Red-vented Bulbul	*Pycnonotus cafer*
13. Indian Golden Oriole	*Oriolus kundoo*
14. Indian Scops- Owl	*Otus bakkamoena*

Garden of Sonamukhi College: structure and maintenance

The campus is made as green as possible by planting good number of trees and plants by students and the College gardeners. Tree plantations are organized regularly to create clean and green campus. The college has a well maintained beautiful garden with rich variety of plants. The garden extends from the front gate associated area and extends towards the science building. The frontal area of the canteen is a pleasure to watch due to the proper maintenance of the garden. The garden contains several flowering and non-flowering plants to create an attractive look to the campus. NSS volunteers also maintain the garden at regular intervals. The college uses its own manure generated from canteen waste to nurture the garden plants and sometimes necessary fertilizers are purchased to sustain the soil quality. Regular watering is done by assigned staffs of the college.

Energy Utilization in Campus:

1. Best practice of our college is use of **solar energy** to produce electricity. Actually solar energy system converts the sun's energy into another form of energy, like electricity. Although, we have installed fewer panels to reach a desired power target. This plan was to reduce the cost of electric bills. 4 years back, we have installed these solar panels and hope it will last for another 26 years. This energy source is now very essential for our college; as it is a renewable source of energy. Moreover, it is environment friendly.

2. Near about 10 years back we have planned for **rainwater harvesting**. On the rooftop of first floor, just above the top roof of our new room number 13, we have installed tools to redirect the rainwater to two reservoirs located at medicinal plant garden. We think it is a good way to conserve water in the drought area like Sonamukhi, Bankura. It helps us in

preserving water for future needs. One may say, it is an artificial method. But it helps us to irrigate the garden and green belts of the college campus. So we do not miss use even the rain water. We don't allow the rainwater to run off. It may be said that, this harvesting plan of our college is for sustainable water management. So, in summer we do not feel crisis of water. Though, this water is not of drinkable quality.

3. We have replaced with **LED bulbs** all the previously installed filament lights scattered around the college campus. As these bulbs use more than 75% less energy than the early installed bulbs. LED stands for light emitting diode. 95% of the energy in LEDs is converted into light and only 5% is wasted as heat. However, the inner workings of LED bulbs are quite a bit different from other standard bulbs of the market. It is now the most efficient lights on the market. Replacing the other standard bulbs like CFL in our college campus we found energy efficient light which has lessened our consumed electricity bills. Show the lesson we have learnt by using this LED bulbs that it produce bright light while using very little electricity consumption. Moreover, LED has thermal management capacity and has configuration to manage heats. LED bulb emits light in a specific direction. Actually, we found LED produce light up to 90% more efficiently than the earlier installed CFL bulbs.

Waste Management practices adopted by Sonamukhi College

There is a well-organized practice policy for waste management run in our college. The liquid wastes, solid wastes as well as e-wastes are managed in an eco-friendly way.

i) Liquid Waste management

Liquid waste from the points of generation like the canteen and toilet etc. is let out as effluent into a proper drainage facility and to avoid stagnation. Regular check-ups are made to ensure that the drainage systems are properly functioning. We are following Good Laboratory Practices to ensure the safety of the personnel. Laboratory liquid chemical waste are collected and safely disposed after proper neutralization. Microbiologically contaminated liquid wastes are expelled after proper decontamination process.

ii) Solid Waste Management

As part of the Green initiative, the college always tries to reduce the waste through reuse and recycling which ensures the cleanliness and eco-balance in the campus. The major solid waste materials generated in the college includes food waste, plastic and papers. The food and plastic wastes from the campus are collected by placing waste bins at various locations in the campus. Every day all the academic buildings and other surrounding area in the campus are cleaned by out concerned staffs and they separate out waste and dispose accordingly. Biodegradable solid wastes are dumped at specific area of the college where they are converted into manure. This manure is later on used for gardening purpose of the college.

iii) E-waste management

Electronic goods are used at its optimum level by proper up gradation and maintenance which is done by the suppliers themselves. Periodic checking ensures the proper disposal of non-working electronic items. All the miscellaneous e-waste such as CDs, batteries, fluorescent bulbs, PCBs and electronic items are collected from every department and office and delivered for safe disposal. Useful parts of electronic gadgets like resistors, capacitors, inductors, diodes, transistors, thermostats etc. are removed from the gadgets for reuse in practical/projects of relevant departments.

This Environmental Report of Sonamukhi College is checked by –

Sailen Madan
08/03/2019

Mr. Sailen Madan
District Co-ordinator
Bankura
West Bengal Biodiversity Board
Dept. of Environment, Govt. of West Bengal

District Co-ordinator
Bankura
West Bengal Biodiversity Board
Dept. Of Environment, Govt. Of West Bengal

Plantation


সোনামুখী কলেজ
অরন্য
২০১৬ -
জাতীয়


212
সোনামুখী কলেজ
অরন্য সপ্তাহ
২০১৬ - ২০১৭
সোনামুখী কলেজ
জাতীয় সেবা প্রকল্প

TREE PLANTATION PROGRAMME: DATE-19/07/17, 20/07/17 & 21/07/17

NSS unit of Sonamukhi College organized a Tree Plantation programme on 19th, 20th & 21st July ,2017. The programme started at 11:00 A.M. NSS volunteers of all units actively participated in the programme. Principal Sir, faculty members, NSS volunteers and Students planted saplings in our college premises. Principal Sir, Dr. Bappaditya Mandal, has also explained about the trees and the importance of tree plantation. Other teachers and non-teaching staff of our college also planted trees and watered them. Some of them also reminded the students to nurture the trees regularly and to carry on their duty unless the saplings become selfdependent. When the program ended, the packets of snacks were distributed. Total 50 volunteers and 25 teachers took part in the programme.

TREE PLANTATION PROGRAMME
DATE-20/09/2019

On 20/09/2019 the NSS Cell of Sonamukhi College organized a Tree Plantation program. On that day the NSS volunteers were asked to distribute saplings among the students and teachers of the college for plantation. All around the college campus, the saplings were planted and the first plantation was obviously done by our honourable Principal Sir. He also gave a short but valuable speech on the necessity of planting trees. Other teachers and non-teaching staff of our college also planted trees and watered them. Some of them also reminded the students to nurture the trees regularly and to carry on their duty unless the saplings become self- dependent. When the program ended, the packets of snacks were distributed. Total 58 volunteers and 30 teachers took part in the programme.


৫ ই জুন বিশ্ব পরিবেশ দিবস
2021
NSS UNIT- I, II & III

Sample Curriculum into Professional Ethics, Gender, Human Values, Environment and Sustainability

SEMESTER –III

Course Code	Course Title	Credit	Marks			No. of Hours		
			I.A.	ESE	Total	Lec.	Tu.	Pr.
UG/ZOO H 301/C-5	CT-5: Diversity of Chordata CP-5: Diversity of Chordata Lab	4 2	10	25 15	50			
UG/ZOO H/ 302/ C-6	CT-6: Animal Physiology: Controlling and Co-ordinating systems CP-6: Animal Physiology: Controlling and Co-ordinating systems Lab	4 2	10	25 15	50			
UG/ZOO H/303/C-7	CT-7: Fundamental of Biochemistry CP-7: Fundamental of Biochemistry Lab	4 2	10	25 15	50			
UG/ZOO/ 304/GE-3	GET : Environment and Public Health GEP : Environment and Public Health Lab	4 2	10	25 15	50			
UG/ZOOH/ 305/SEC-1	SECT: Apiculture	2	10	40	50			
Total in Semester - III		**26**	**50**	**200**	**250**			

6.5 GE T3 Environment and Public Health **4 Credits**

Environment and Public Health

Unit 1: Introduction

Sources of Environmental hazards, Hazard identification and accounting, Fate of toxic and persistent substances in the environment, Dose response evaluation, Exposure assessment, Persistent organic pollutant

Unit 2: Climate Change

Greenhouse gases and global warming, Acid rain, Ozone layer destruction, Effect of climate change on public health

Unit 3: Pollution

Air, water, Land, noise pollution sources and effects, Pollution control

Unit 4: Waste Management Technologies

Sources of waste, types and characteristics, Sewage disposal and its management, Solid waste disposal, Biomedical waste handling and disposal, e-waste management, nuclear waste handling and disposal, Waste from thermal power plants.

Unit 5: Diseases

Causes, symptoms and control of tuberculosis, Asthma, Cholera, Minamata disease, typhoid, filariasis

Reference Books

Cutter, S.L., Environmental Risk and Hazards, Prentice-Hall of India Pvt. Ltd., New Delhi, 1999.
Joseph F Louvar and B Diane Louver Health and Environmental Risk Analysis fundamentals with applications, Prentice Hall, New Jersey 1997.
Kasperson, J.X. and Kasperson, R.E. and Kasperson,R.E., Global Environmental Risks, V.N.University Press, New York, 2003.
Kofi Asante Duah "Risk Assessment in Environmental management", John Wiley and sons, Singapore, 1998.
Kolluru Rao, Bartell Steven, Pitblado R and Stricoff "Risk Assessment and Management Handbook", McGraw Hill Inc., New York, 1996.

SEMESTER –I

Course Code	Course Title	Credit	Marks			No. of Hours		
			I.A.	ESE	Total	Lec.	Tu.	Pr.
UG/ZOOH / 101/C-1	CT-1: Non-chordates I CP-1: Non-chordates I Lab	4 2	10	25 15	50			
UG/ZOOH / 102/C-2	CT-2: Perspectives In Ecology CP-2: Perspectives In Ecology Lab	4 2	10	25 15	50			
UG/ZOO/ 103/GE-1	GE T : Animal Diversity GE P: Animal Diversity Lab	4 2	10	25 15	50			
UG/104/ AECC-1	Environmental Studies	4	10	40	50			
Total in Semester - I		**22**	**40**	**160**	**200**			

BANKURA UNIVERSITY

CBCS SYLLABUS

Ability-Enhancement Compulsory Course (AECC)

COURSE TITLE: Environmental Studies
COURSE CODE: ACSHP/ 104/ AECC-1

Marks: 50 (40+10) **Credit: 04**

FOR ALL STREAMS OF UNDER GRADUATE HONOURS AND PROGRAM COURSES (Arts, Science and Commerce)

Unit 1: Introduction to Environmental Studies
- Multidisciplinary nature of environmental studies
- Definition, Nature, Scope andImportance of environmental studies
- Types and Components ofenvironment
- Sustainable development

Unit 2: Ecosystems
- Concept of Ecology and Eco-system, Structure and Function of an Ecosystem
- Different types of ecosystem; Forest, Desert and Aquatic (Ponds and Oceans) Biomes
- Energy flow in the ecosystem, energy flowmodels
- Food chains, food weds and ecologicalpyramids
- Ecological Succession

Unit 3: Natural Resources: Renewable and Non- Renewable Resources
- Land resources: Land degradation, Landslides, Soilerosion
- Forest resources: Uses, types and importance, deforestation and itseffects, Forest biodiversity and tribal population
- Water resources: Distribution of water on Earth; Use and over-exploitation of surface and ground water; conflicts over water (international & inter-state)
- Energy resources: Renewable and Non-renewable energy sources; Use of alternative energy Sources

Unit 4: Biodiversity and conservation
- Introduction – Definition: Levels of biological diversity: Genetics, Species and Eco-System Diversity, Biodiversity hot spots and mega biodiversity countries.
- Threats to biodiversity; Value (services) of biodiversity; man-wildlife conflicts, biological invasions
- Conservation of biodiversity: *In situ* and *Ex situ* conservation ofbiodiversity; Endangered and endemic species of India

Unit 5: Environmental Pollution
- Environmental pollution: types, causes, effects and controls; Air, water, soil and noise pollution
- Nuclearhazards and human health risks.
- Solid waste management: Control measures of urban and industrial waste.
- Fireworks Pollution

Unit 6: Environmental Policies & Practices
- Climate change, global warming, ozone layer depletion, acid rain and its impacts on human communities and agriculture
- Environment Laws: Environment Protection Act, 1986; Air (Prevention & Control of Pollution) Act, 1981; Water (Prevention and control of Pollution) Act, 1972; Wildlife Protection Act, 1972;

ForestConservation Act, 1920, 1988; International agreements: Montreal protocols, 1987 and Kyoto protocols, 1997 and Convention on Biological Diversity (CBD)

- Tribal populations and rights.

Unit 7: Human Communities and the Environment

- Human population growth: Population Explosion, Impacts on environment, human health and welfare.
- Disaster management: floods, earthquake, cyclones and landslides.
- Environmental movements: Chipko, Silent valley
- Environmental ethics: Role of Indian and other religions and cultures in environmentalConservation
- Environment and human health: Concept of health anddiseases (Vector Borne Diseases)
- Human Rights, Value Education, Role of Information Technology inEnvironment

Unit 8: Field Work (Project Work)

- Visit to an area to document environmental assets: river/ forest/ flora/fauna, etc.
- Visit to a local polluted site-Urban/Rural/Industrial/Agricultural.
- Study of common plants, insects, birds and basic principles of identification
- Study of simple ecosystems-pond, river etc

Suggested Readings:

1. Carsen, R. 2002. Silent Spring, Houghton Mifflin,Harcourt.
2. Rao,M.N&DattaA.K.1987.WasteWaterTreatment,OxfordandIBHPublishingCo.Pvt. Ltd.
3. Raven, P.H Hassenzahl, D.M. & Berg L.R, 2012 Environment.8thEdition. John Wiley & Sons.
4. Singh, J.S.Singh, S.P. and Gupta, S.R. 2014.Ecology, Environmental Science and Conservation. S. Chand Publishing, NewDelhi.
5. Agarwal, K.C.2001 Environmental Biology, Nidi Publication .Ltd.Bikaner.
6. BharuchaErach, The Biodiversity Biology of India, Mapin Publishing Pvt. Ltd. Ahmedbad,India
7. Cunningham,W.P.Cooper,T.H.Gorhani,E&Hepworth,M.T.2001,Environmental Encyclopedia.JaicoPubl.House.Mumbai.1196p.
8. Heywood,V.h&Watson,R.T. 1995. Global Biodiversity Assessment. Cambridge UniversityPress.
9. Jadhav,H&BhosaleV.M.1995.EnvironmentalProtectionandLaws,HimalayaPublishing House,Delhi
10. Mckinney,M.L. &Schoch.R.M. 1996. Environmental Science systems & Solutions, Web enhancededition.
11. Saha T.K. 2010. Ecology and Environmental Biology, Books and Allied (P) Ltd. Kolkata.
12. Santra S.C. 2005. Environmental Science, New Central Book Agency (P) Ltd. Kolkata.
13. Singh, S. 1991. Environmental Geography, PrayagPustakBhawan, Allahabad.
14. Roy, S. 2003.Environmental Science, Publishing Syndicate, Kolkata
15. Sharma, P. D. 2012. Ecology and Environment, Rastogi Publication
16. Dash, M. C. 2001. Fundamentals of Ecology, Tata McGraw-Hill Publishing Company Ltd
17. Arora, Mohan P. 2009. Ecology, Himalaya Publishing House
18. Saha T.K. 2010. Ecology and Environmental Biology, Books and Allied (P) Ltd. Kolkata.
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20. Environmental Studies—Prof S.V.S Rana.--Rastogi Publication.
21. Text book of Ecology: The Experimental Analysis of distribution & abundance--(Charles J. Krebs).Pearson Education.
22. ErachBharucha, 2016. Text Book of Environmental Studies for Undergraduate Courses (Second Edition) for UGC. University Press.

Marks Division: **40** (Theory) + **10** (Project Work/Field Work/Internal) = **50** Marks

PERSPECTIVE IN ECOLOGY UG-SH/ZOO/102/C-2

SEMESTER –I

Course Code	Course Title	Credit	Marks			No. of Hours		
			I.A.	ESE	Total	Lec.	Tu.	Pr.
UG/ZOOH / 101/C-1	CT-1: Non-chordates I CP-1: Non-chordates I Lab	4 2	10	25 15	50			
UG/ZOOH / 102/C-2	CT-2: Perspectives In Ecology CP-2: Perspectives In Ecology Lab	4 2	10	25 15	50			
UG/ZOO/ 103/GE-1	GE T : Animal Diversity GE P: Animal Diversity Lab	4 2	10	25 15	50			
UG/104/ AECC-1	Environmental Studies	4	10	40	50			
Total in Semester - I		**22**	**40**	**160**	**200**			

3.3 Core T2 - Perspectives in Ecology **4 Credits**

Perspectives in Ecology

Unit 1: Introduction to Ecology
History of ecology, Scope of Ecology, Autecology and synecology, Levels of organization, Laws of limiting factors, Study of Physical factors, The Biosphere.

Unit 2: Population
Unitary and Modular populations
Population: Characteristics, growth forms, geometric, exponential and logistic growth, equation and patterns, r and K strategies
Population regulation - density-dependent and independent factors
Population Interactions, Gause's Principle with laboratory and field examples, Lotka-Volterra equation for competition.

Unit 3: Community
Community characteristics: species diversity, abundance, dominance, richness
Concept of community stratification, Ecotone and edge effect. Ecological succession with one example(Forest)

Unit 4: Ecosystem
Types of ecosystem w.r.t forest and marine ecosystem; Food chain: Detritus and grazing food chains, Linear and Y-shaped food chains, Food web, Energy flow through the ecosystem, Ecological pyramids and Ecological efficiencies
Biogeochemical cycle w.r.t. Nitrogen cycle
Agro ecosystem and its impact

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

Reference Books

Cain, Bowman & Hacker (2014) Ecology, 3rd edition. Sinauer associates
Chapman, R. L. and Reiss, M. J. (2000). Ecology - Principles & Application. Cambridge University Press
Dash, M. C., (2001). Fundamental of Ecology. 2nd Ed. Tata McGraw-Hill Company
Kormondy, E. J. (2002). Concepts of Ecology. 4th Indian Reprint, Pearson Education
Krebs, C. J. (2001). Ecology. VI Edition. Benjamin Cummings.
Odum, E.P., (2008). Fundamentals of Ecology. Indian Edition. Brooks/Cole
Robert Leo Smith Ecology and field biology Harper and Row publisher
Russel, P.J., Wolfe, L. S., Hertz, P.E. Starr, C. & McMillan, B. (2008). Ecology
Stilling P (2009) Ecology: Theories & Application 4th Edition, Prentice Hall of India.
Van Dyke, F. (2008). Conservation Biology: Foundations, Concepts, Application. 2nd Ed. Springer Science and Business Media.

ENVIRONMENTAL
STUDIES UG/104/AECC-ENV

SEMESTER – I

Course Code	Course Title	Credit	Marks			No. of Hours		
			I.A.	ESE	Total	Lec.	Tu.	Pr.
UGP/SC/101/C-1A	**Animal Diversity**	6	10	40	50		25	15
UGP/102/ C-2A	Discipline-2	6	10	40	50			
UGP/103/ C-3A	Discipline-3	6	10	40	50			
UG/ 104/ AECC-ENV	Environmental Studies	4	10	40	50			
Total in Semester - I		**22**	**40**	**160**	**200**			

BANKURA UNIVERSITY

CBCS SYLLABUS

Ability-Enhancement Compulsory Course (AECC)

COURSE TITLE: Environmental Studies
COURSE CODE: ACSHP/ 104/ AECC-1

Marks: 50 (40+10) **Credit: 04**

FOR ALL STREAMS OF UNDER GRADUATE HONOURS AND PROGRAM COURSES (Arts, Science and Commerce)

Unit 1: Introduction to Environmental Studies

- Multidisciplinary nature of environmental studies
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- Concept of Ecology and Eco-system, Structure and Function of an Ecosystem
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- Land resources: Land degradation, Landslides, Soilerosion
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- Environmental pollution: types, causes, effects and controls; Air, water, soil and noise pollution
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- Tribal populations and rights.

Unit 7: Human Communities and the Environment

- Human population growth: Population Explosion, Impacts on environment, human health and welfare.
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- Environmental ethics: Role of Indian and other religions and cultures in environmentalConservation
- Environment and human health: Concept of health anddiseases (Vector Borne Diseases)
- Human Rights, Value Education, Role of Information Technology inEnvironment

Unit 8: Field Work (Project Work)

- Visit to an area to document environmental assets: river/ forest/ flora/fauna, etc.
- Visit to a local polluted site-Urban/Rural/Industrial/Agricultural.
- Study of common plants, insects, birds and basic principles of identification
- Study of simple ecosystems-pond, river etc

Suggested Readings:

1. Carsen, R. 2002. Silent Spring, Houghton Mifflin,Harcourt.
2. Rao,M.N&DattaA.K.1987.WasteWaterTreatment,OxfordandIBHPublishingCo.Pvt. Ltd.
3. Raven, P.H Hassenzahl, D.M. & Berg L.R, 2012 Environment.8thEdition. John Wiley & Sons.
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8. Heywood,V.h&Watson,R.T. 1995. Global Biodiversity Assessment. Cambridge UniversityPress.
9. Jadhav,H&BhosaleV.M.1995.EnvironmentalProtectionandLaws,HimalayaPublishing House,Delhi
10. Mckinney,M.L. &Schoch.R.M. 1996. Environmental Science systems & Solutions, Web enhancededition.
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15. Sharma, P. D. 2012. Ecology and Environment, Rastogi Publication
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17. Arora, Mohan P. 2009. Ecology, Himalaya Publishing House
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19. Santra S.C. 2005. Environmental Science, New Central Book Agency (P) Ltd. Kolkata.
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21. Text book of Ecology: The Experimental Analysis of distribution & abundance--(Charles J. Krebs).Pearson Education.
22. ErachBharucha, 2016. Text Book of Environmental Studies for Undergraduate Courses (Second Edition) for UGC. University Press.

Marks Division: **40** (Theory) + **10** (Project Work/Field Work/Internal) = **50** Marks

SEMESTER – VI

Course Code	Course Title	Credit	Marks			No. of Hours		
			I.A.	ESE	Total	Lec.	Tu.	Pr.
UGP/S.C. / 601/DSE-1B	**DSET 2a Aquatic biology** **Or 2b Immunology** **DSEP 2a Aquatic biology Lab** **Or 2b Immunology Lab**	6	10	40	50		25	15
UGP/ 602/DSE-2B	Discipline - 2	6	10	40	50			
UGP/ 603/DSE-3B	Discipline - 3	6	10	40	50			
UGP/S.C./ 604/SEC-4	**Medical Techniques**	2	10	40	50			
Total in Semester – VI		**20**	**40**	**160**	**200**			

4.5 DSE T2b - Aquatic Biology

Aquatic Biology	4 Credits

15Thteory

Theory

UNIT 1: Aquatic Biomes

Brief introduction of the aquatic biomes: Freshwater ecosystem (lakes, wetlands, streams and rivers), marine ecosystem; estuaries; intertidal zones, oceanic pelagic zone, marine benthic zone and coral reefs.

UNIT 2: Freshwater Biology

Lakes: Origin and classification, Lake as an Ecosystem, Lake morphometry, Physico–chemical Characteristics: Light, Temperature, Thermal stratification, Dissolved Solids, Carbonate, Bicarbonates, Phosphates and Nitrates, Turbidity; dissolved gases (Oxygen, Carbon dioxide). Nutrient Cycles in Lakes-Nitrogen, Sulphur and Phosphorous.

Streams: Different stages of stream development, Physico-chemical environment, Adaptation of hill-stream fishes.

UNIT 3: Marine Biology

Salinity and density of Sea water, Continental shelf, Adaptations of deep sea organisms, Coral reefs, Sea weeds.

UNIT 4: Management of Aquatic Resources

Causes of pollution: Agricultural, Industrial, Sewage, Thermal and Oil spills, Eutrophication, Management and conservation (legislations), Sewage treatment ;Water quality assessment- BOD and COD

SUGGESTED READINGS

1. Anathakrishnan : Bio resources Ecology 3rdEdition
2. Goldman : Limnology, 2ndEdition
3. Odum and Barrett : Fundamentals of Ecology, 5thEdition
4. Pawlowski : Physicochemical Methods for Water and Wastewater Treatment, 1stEdition
5. Trivedi and Goyal : Chemical and biological methods for water pollution studies
6. Welch : Limnology Vols. I-II
7. Wetzel : Limnology, 3rdedition

SEMESTER- V

Course Title (Discipline Specific Elective): Human Rights in a Comparative Perspective

Course Code: AHPLS-503/DSE-1
(Students to choose one of the two Courses)

Credit: 06 **Contact Hours/week: 06**

Maximum Marks: 50 (ESE-40; IA-10) **Examination Duration: 2 Hours**

Course Objective: This course attempts to build an understanding of human rights among students through a study of specific issues in a comparative perspective. It is important for students to see how debates on human rights have taken distinct forms historically and in the contemporary world. The course seeks to anchor all issues in the Indian context, and pulls out another country to form a broader comparative frame. Students will be expected to use a range of resources, including films, biographies, and official documents to study each theme. Thematic discussion of sub-topics in the second and third sections should include state response to issues and structural violence questions.

I. Human Rights- Theory and Institutionalization:

a. Understanding Human Rights: Three Generations of Rights

b. Institutionalization: Universal Declaration of Human Rights

c. Rights in National Constitutions: South Africa and India

II. Issues:

a. Torture: USA and India

b. Surveillance and Censorship: China and India

c. Terrorism and Insecurity of Minorities: USA and India

III. Structural Violence:

a. Caste and Race: South Africa and India

b. Gender and Violence: India and Pakistan

c. Adivasis/Aboriginals and the Land Question: Australia and India.

SEMESTER- V

Course Title (Generic Elective Course): Human Rights, Gender and Environment

(to be opted by students from other departments)

Course Code: APPLS-503/GE-1

Credit: 06 **Contact Hours/week: 06**

Maximum Marks: 50 (ESE-40; IA-10) **Examination Duration: 2 Hours**

Course Objective: This course aims at enabling the students to understand the issues concerning the rights of citizens in general and the marginalized groups in particular, and assess the institutional and policy measures which have been taken in response to the demands of various movements. Conceptual dimensions, international trends and the Indian experience form the contents of the course.

Expected Learning Outcome: The study of the course will equip the students with theoretical and conceptual understanding of socio – economic and political problems of marginalized groups in society such as women, dalits, minorities and adivasis and repercussions of contemporary developments on globalization on them.

I. Understanding Social Inequality:

Caste, Gender, Ethnicity and Class as Distinct Categories and their Interconnection.

Globalisation and its Impact on Workers, Peasants, Dalits, Adivasis and Women.

II. Human Rights:

Human Rights: Various Meanings.

UN Declarations.

Human Rights and Citizenship Rights.

Human Rights and the Indian Constitution.

The Rrole of the National Human Rights Commission.

Human Rights of Marginalized Groups: Dalits, Adivasis, Women, Minorities and Unorganized Workers.

Human Rights Movement in India.

III. Gender:

Gender, Culture and History.

Economic Development and Women.

The issue of Women's Political Participation and Representation in India.

Women's Movements in India.

IV. Environment:

Environmental and Sustainable Development.

UN Environment Programme: Rio, Johannesburg and after.

Environment Policy in India.

Environmental Movement in India.

Or,

Course Title (Discipline Specific Course): Women, Power and Politics

Course Code: AHPLS-603/DSE-3

Credit: 06 **Contact Hours/week: 06**

Maximum Marks: 50 (ESE-40; IA-10) **Examination Duration: 2 Hours**

Course Objective: This course opens up the question of women's agency, taking it beyond 'women's empowerment' and focusing on women as radical social agents. It attempts to question the complicity of social structures and relations in gender inequality. This is extended to cover new forms of precarious work and labour under the new economy. Special attention will be paid to feminism as an approach and outlook. The course is divided into broad units, each of which is divided into three sub-units.

I. Groundings:

1. Patriarchy

a. Sex-Gender Debates

b. Public and Private

c. Power

2. Feminism: History; Feminist Political Thought.

3. Family, Community, State

a. Family: Gender Socialisation and Family; Gender Relations in Family.

b. Community: Forms of Community; Social Reform of the Women's Question.

c. State: Ideologies of the State (Paternalistic and Patriarchical); Women, Law and Citizenship.

II. Movements and Issues:

1. History of the Women's Movement in India

2. Violence against women

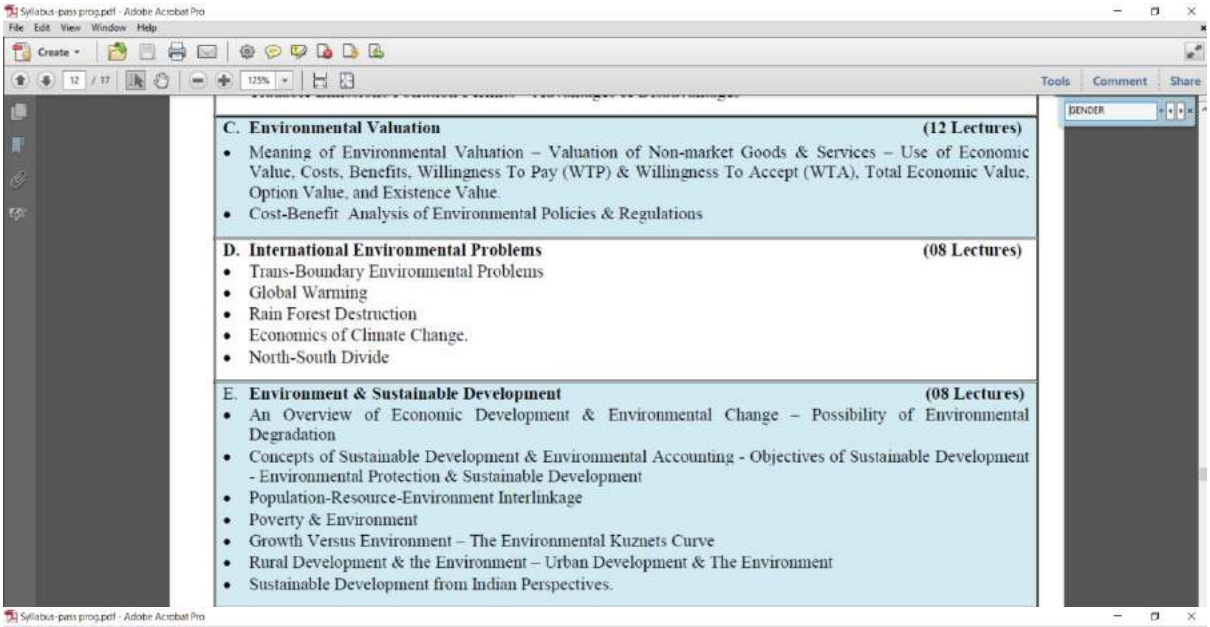
3. Work and Labour

a. Visible and Invisible work--- Unpaid Work.

b. Reproductive and care work.

c. Sex work.

ENVIRONMENTAL ECONOMICS



C. Environmental Valuation **(12 Lectures)**

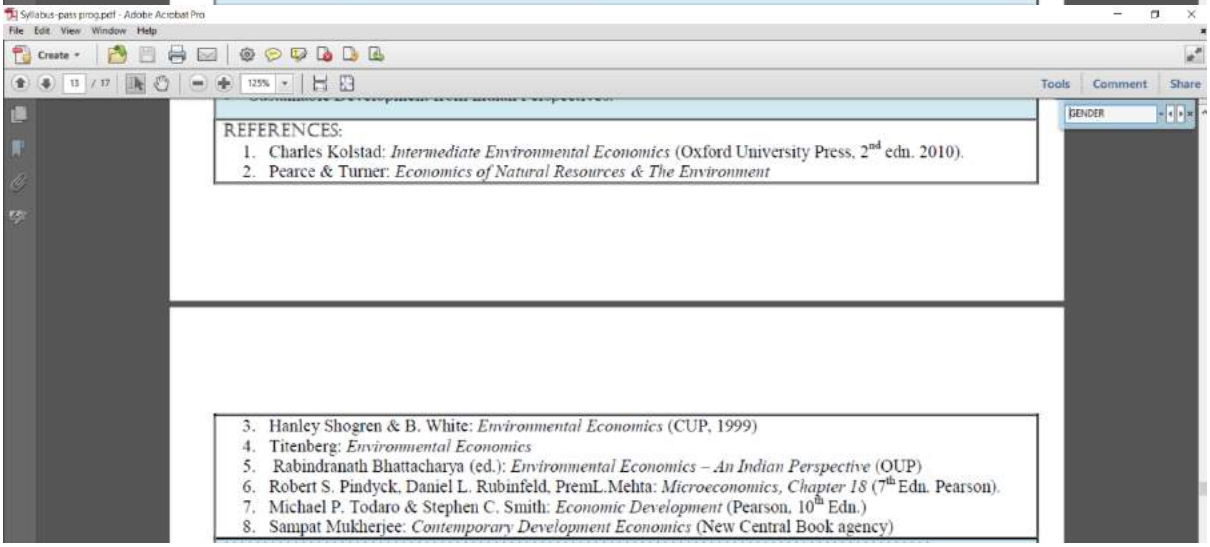
- Meaning of Environmental Valuation – Valuation of Non-market Goods & Services – Use of Economic Value, Costs, Benefits, Willingness To Pay (WTP) & Willingness To Accept (WTA), Total Economic Value, Option Value, and Existence Value.
- Cost-Benefit Analysis of Environmental Policies & Regulations

D. International Environmental Problems **(08 Lectures)**

- Trans-Boundary Environmental Problems
- Global Warming
- Rain Forest Destruction
- Economics of Climate Change.
- North-South Divide

E. **Environment & Sustainable Development** **(08 Lectures)**

- An Overview of Economic Development & Environmental Change – Possibility of Environmental Degradation
- Concepts of Sustainable Development & Environmental Accounting - Objectives of Sustainable Development - Environmental Protection & Sustainable Development
- Population-Resource-Environment Interlinkage
- Poverty & Environment
- Growth Versus Environment – The Environmental Kuznets Curve
- Rural Development & the Environment – Urban Development & The Environment
- Sustainable Development from Indian Perspectives.



REFERENCES:

1. Charles Kolstad: *Intermediate Environmental Economics* (Oxford University Press, 2nd edn. 2010).
2. Pearce & Turner: *Economics of Natural Resources & The Environment*
3. Hanley Shogren & B. White: *Environmental Economics* (CUP, 1999)
4. Titenberg: *Environmental Economics*
5. Rabindranath Bhattacharya (ed.): *Environmental Economics – An Indian Perspective* (OUP)
6. Robert S. Pindyck, Daniel L. Rubinfeld, PremL.Mehta: *Microeconomics, Chapter 18* (7th Edn. Pearson).
7. Michael P. Todaro & Stephen C. Smith: *Economic Development* (Pearson, 10th Edn.)
8. Sampat Mukherjee: *Contemporary Development Economics* (New Central Book agency)

ENVIRONMENTAL STUDIES

BANKURA UNIVERSITY

CBCS SYLLABUS

Ability-Enhancement Compulsory Course (AECC)

COURSE TITLE: Environmental Studies
COURSE CODE: ACSHP/ 104/ AECC-1

Marks: 50 (40+10) **Credit: 04**

FOR ALL STREAMS OF UNDER GRADUATE HONOURS AND PROGRAM COURSES
(Arts, Science and Commerce)

Unit 1: Introduction to Environmental Studies

- Multidisciplinary nature of environmental studies
- Definition, Nature, Scope andImportance of environmental studies
- Types and Components ofenvironment
- Sustainable development

Unit 2: Ecosystems

- Concept of Ecology and Eco-system, Structure and Function of an Ecosystem
- Different types of ecosystem; Forest, Desert and Aquatic (Ponds and Oceans) Biomes
- Energy flow in the ecosystem, energy flowmodels
- Food chains, food weds and ecologicalpyramids
- Ecological Succession

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

- Land resources: Land degradation, Landslides, Soilerosion
- Forest resources: Uses, types and importance, deforestation and itseffects, Forest biodiversity and tribal population
- Water resources: Distribution of water on Earth; Use and over-exploitation of surface and ground water; conflicts over water (international & inter-state)
- Energy resources: Renewable and Non-renewable energy sources; Use of alternative energy Sources

Unit 4: Biodiversity and conservation

- Introduction – Definition: Levels of biological diversity: Genetics, Species and Eco-System Diversity, Biodiversity hot spots and mega biodiversity countries.
- Threats to biodiversity; Value (services) of biodiversity; man-wildlife conflicts, biological invasions
- Conservation of biodiversity: *In situ* and *Ex situ* conservation ofbiodiversity; Endangered and endemic species of India

Unit 5: Environmental Pollution

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

Unit 6: Environmental Policies & Practices

- Climate change, global warming, ozone layer depletion, acid rain and its impacts on human communities and agriculture
- Environment Laws: Environment Protection Act, 1986; Air (Prevention & Control of Pollution) Act, 1981; Water (Prevention and control of Pollution) Act, 1972; Wildlife Protection Act, 1972;

ForestConservation Act, 1920, 1988; International agreements: Montreal protocols, 1987 and Kyoto protocols, 1997 and Convention on Biological Diversity (CBD)

- Tribal populations and rights.

Unit 7: Human Communities and the Environment

- Human population growth: Population Explosion, Impacts on environment, human health and welfare.
- Disaster management: floods, earthquake, cyclones and landslides.
- Environmental movements: Chipko, Silent valley
- Environmental ethics: Role of Indian and other religions and cultures in environmentalConservation
- Environment and human health: Concept of health anddiseases (Vector Borne Diseases)
- Human Rights, Value Education, Role of Information Technology inEnvironment

Unit 8: Field Work (Project Work)

- Visit to an area to document environmental assets: river/ forest/ flora/fauna, etc.
- Visit to a local polluted site-Urban/Rural/Industrial/Agricultural.
- Study of common plants, insects, birds and basic principles of identification
- Study of simple ecosystems-pond, river etc

Suggested Readings:

1. Carsen, R. 2002. Silent Spring, Houghton Mifflin,Harcourt.
2. Rao,M.N&DattaA.K.1987.WasteWaterTreatment,OxfordandIBHPublishingCo.Pvt. Ltd.
3. Raven, P.H Hassenzahl, D.M. & Berg L.R, 2012 Environment.8thEdition. John Wiley & Sons.
4. Singh, J.S.Singh, S.P. and Gupta, S.R. 2014.Ecology, Environmental Science and Conservation. S. Chand Publishing, NewDelhi.
5. Agarwal, K.C.2001 Environmental Biology, Nidi Publication .Ltd.Bikaner.
6. BharuchaErach, The Biodiversity Biology of India, Mapin Publishing Pvt. Ltd. Ahmedbad,India
7. Cunningham,W.P.Cooper,T.H.Gorhani,E&Hepworth,M.T.2001,Environmental Encyclopedia.JaicoPubl.House.Mumbai.1196p.
8. Heywood,V.h&Watson,R.T. 1995. Global Biodiversity Assessment. Cambridge UniversityPress.
9. Jadhav,H&BhosaleV.M.1995.EnvironmentalProtectionandLaws,HimalayaPublishing House,Delhi
10. Mckinney,M.L. &Schoch.R.M. 1996. Environmental Science systems & Solutions, Web enhancededition.
11. Saha T.K. 2010. Ecology and Environmental Biology, Books and Allied (P) Ltd. Kolkata.
12. Santra S.C. 2005. Environmental Science, New Central Book Agency (P) Ltd. Kolkata.
13. Singh, S. 1991. Environmental Geography, PrayagPustakBhawan, Allahabad.
14. Roy, S. 2003.Environmental Science, Publishing Syndicate, Kolkata
15. Sharma, P. D. 2012. Ecology and Environment, Rastogi Publication
16. Dash, M. C. 2001. Fundamentals of Ecology, Tata McGraw-Hill Publishing Company Ltd
17. Arora, Mohan P. 2009. Ecology, Himalaya Publishing House
18. Saha T.K. 2010. Ecology and Environmental Biology, Books and Allied (P) Ltd. Kolkata.
19. Santra S.C. 2005. Environmental Science, New Central Book Agency (P) Ltd. Kolkata.
20. Environmental Studies—Prof S.V.S Rana.--Rastogi Publication.
21. Text book of Ecology: The Experimental Analysis of distribution & abundance--(Charles J. Krebs).Pearson Education.
22. ErachBharucha, 2016. Text Book of Environmental Studies for Undergraduate Courses (Second Edition) for UGC. University Press.

Marks Division: **40** (Theory) + **10** (Project Work/Field Work/Internal) = **50** Marks