

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



SONAMUKHI COLLEGE

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

NAAC - B(2.37) 2016 - 1st Cycle

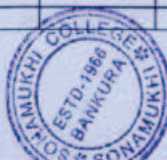
www.sonamukhicollegebankura.com
sonamukhicol@gmail.com
(91)93244-275291

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	✓				

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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			✓	✓	
Social Work	II	UG/SW/201 C-3	Understanding of Society for Social Work Practice	✓		✓	✓	
Social Work	III	UG/SW/301 C-5	Working with Individuals		✓	✓	✓	✓
Social Work	III	UG/SW/302 C-6	Working with Groups		✓	✓	✓	✓
Social Work	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	✓		✓	✓	✓

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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	✓		✓	✓	



*Compilation made
by*

Bmr
Principal
Sonamukhi College
Sonamukhi, Bankura

Code of Conduct



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AISHE 11 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.



J. Chaudhary
Principal
7-10-21

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



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AISHE 12 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.



J. Chandra


Principal

Sonamukhi College
P.O. Sonamukhi, Dt. Bankura

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 maintenance 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.





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

SEMESTER –III

Course Code	Course Title	Credit	Marks			No. of Hours		
			LA.	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			



Bankura University

B.Sc. Zoology (Honours)

CBCS w.e.f. 2018-19

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, Barlett Steven, Pittblado 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		
			L.A.	ESE	Total	Lec.	Tu.	Pr.
UG/ZOOH / 101/C-1	CT-1: Non-chordates I	4	10	25	50			
	CP-1: Non-chordates I Lab	2		15				
UG/ZOOH / 102/C-2	CT-2: Perspectives In Ecology	4	10	25	50			
	CP-2: Perspectives In Ecology Lab	2		15				
UG/ZOO/ 103/GE-1	GE T : Animal Diversity	4	10	25	50			
	GE P: Animal Diversity Lab	2		15				
UG/104/ AECC-1	Environmental Studies	4	10	40	50			
Total in Semester - I		22	40	160	200			



Bankura University

Environmental Studies (AECC-1)

CBCS w.e.f. 2017-18

BANKURA UNIVERSITY

CBCS SYLLABUS

Ability-Enhancement Compulsory Course (AECC)

COURSE TITLE: Environmental Studies

COURSE CODE: ACSHP/ 104/ AECC-I

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 and Importance of environmental studies
- Types and Components of environment
- 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 flow models
- Food chains, food webs and ecological pyramids
- Ecological Succession

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

- Land resources: Land degradation, Landslides, Soil erosion
- Forest resources: Uses, types and importance, deforestation and its effects, 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 of biodiversity; Endangered and endemic species of India

Unit 5: Environmental Pollution

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



Forest Conservation 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 environmental Conservation
- Environment and human health: Concept of health and diseases (Vector Borne Diseases)
- Human Rights, Value Education, Role of Information Technology in Environment

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. & Datta A.K. 1987. Waste Water Treatment, Oxford and IBH Publishing Co. Pvt. Ltd.
3. Raven, P.H. Hassenzahl, D.M. & Berg L.R. 2012 Environment. 8th Edition. John Wiley & Sons.
4. Singh, J.S. Singh, S.P. and Gupta, S.R. 2014. Ecology, Environmental Science and Conservation. S. Chand Publishing, New Delhi.
5. Agarwal, K.C. 2001. Environmental Biology, Nidi Publication. Ltd. Bikaner.
6. Bharucha Erach, The Biodiversity Biology of India, Mapin Publishing Pvt. Ltd. Ahmedabad, India
7. Cunningham, W.P. Cooper, T.H. Gorhani, E. & Hepworth, M.T. 2001, Environmental Encyclopedia. Jaico Publ. House. Mumbai. 1196p.
8. Heywood, V. & Watson, R.T. 1995. Global Biodiversity Assessment. Cambridge University Press.
9. Jadhav, H. & Bhosale V.M. 1995. Environmental Protection and Laws, Himalaya Publishing House, Delhi
10. McKinney, M.L. & Schoch R.M. 1996. Environmental Science systems & Solutions, Web enhanced edition.
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, Prayag Pustak Bhawan, 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. Erach Bharucha, 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 -I

Course Code	Course Title	Credit	Marks			No. of Hours		
			L.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.

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

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COURSE TITLE: Environmental Studies

COURSE CODE: ACSHP/ 104/ AECC-1

Marks: 50 (40+10)

Credit: 04

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(Arts, Science and Commerce)**

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- Forest resources: Uses, types and importance, deforestation and its effects, 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)
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Forest Conservation Act, 1920, 1988; International agreements: Montreal protocols, 1987 and Kyoto protocols, 1997 and Convention on Biological Diversity (CBD)

- Tribal populations and rights.

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- Disaster management: floods, earthquake, cyclones and landslides.
- Environmental movements: Chipko, Silent valley
- Environmental ethics: Role of Indian and other religions and cultures in environmental Conservation
- Environment and human health: Concept of health and diseases (Vector Borne Diseases)
- Human Rights, Value Education, Role of Information Technology in Environment

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.
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4. Singh, J.S. Singh, S.P. and Gupta, S.R. 2014. Ecology, Environmental Science and Conservation. S. Chand Publishing, New Delhi.
5. Agarwal, K.C. 2001. Environmental Biology, Nidi Publication. Ltd. Bikaner.
6. Bharucha Erach, 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. Jaico Publ. House. Mumbai. 1196p.
8. Heywood, V. & Watson, R.T. 1995. Global Biodiversity Assessment. Cambridge University Press.
9. Jadhav, H. & Bhosale V.M. 1995. Environmental Protection and Laws, Himalaya Publishing House, Delhi
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12. Santra S.C. 2005. Environmental Science, New Central Book Agency (P) Ltd. Kolkata.
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14. Roy, S. 2003. Environmental Science, Publishing Syndicate, Kolkata
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21. Text book of Ecology: The Experimental Analysis of distribution & abundance—(Charles J. Krebs). Pearson Education.
22. Erach Bharucha, 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		
			IA.	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			



Bankura University

B.Sc General Degree Course (Programme)

CBCS w.e.f. 2019-20

4.5 DSE T2b - Aquatic Biology

Aquatic Biology

4 Credits

15 Theory

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 3rd Edition
2. Goldman : Limnology, 2nd Edition
3. Odum and Barrett : Fundamentals of Ecology, 5th Edition
4. Pawlowski : Physicochemical Methods for Water and Wastewater Treatment, 1st Edition
5. Trivedi and Goyal : Chemical and biological methods for water pollution studies
6. Welch : Limnology Vols. I-II
7. Wetzel : Limnology, 3rd edition



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 Role 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 Patriarchal); Women, Law and Citizenship.

II. Movements and Issues:

1. History of the Women's Movement in India



BANKURA UNIVERSITY, B.A. (HONOURS) POLITICAL SCIENCE CBCS SYLLABUS, 2017-18

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

Syllabus - pers.ppt - Adobe Acrobat Pro

File Edit View Window Help

Create + 12 / 17 125% Tools Comment Share

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. Tietenberg: *Environmental Economics*
5. Rabindranath Bhattacharya (ed.): *Environmental Economics – An Indian Perspective* (OUP)
6. Robert S. Pindyck, Daniel L. Rubinfeld, Prem L. 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)



Bankura University

Environmental Studies (AECC-1)

CBCS w.e.f. 2017-18

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 and Importance of environmental studies
- Types and Components of environment
- 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 flow models
- Food chains, food webs and ecological pyramids
- Ecological Succession

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

- Land resources: Land degradation, Landslides, Soil erosion
- Forest resources: Uses, types and importance, deforestation and its effects, 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 of biodiversity; Endangered and endemic species of India
-

Unit 5: Environmental Pollution

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



Forest Conservation 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 environmental Conservation
- Environment and human health: Concept of health and diseases (Vector Borne Diseases)
- Human Rights, Value Education, Role of Information Technology in Environment

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. Carlsen, R. 2002. Silent Spring. Houghton Mifflin, Harcourt.
2. Rao, M.N. & Datta, A.K. 1987. Waste Water Treatment, Oxford and IBH Publishing Co. Pvt. Ltd.
3. Raven, P.H. Hassenzahl, D.M. & Berg L.R. 2012 Environment. 8th Edition. John Wiley & Sons.
4. Singh, J.S. Singh, S.P. and Gupta, S.R. 2014. Ecology, Environmental Science and Conservation. S. Chand Publishing, New Delhi.
5. Agarwal, K.C. 2001. Environmental Biology, Nidi Publication, Ltd. Bikaner.
6. Bharucha Erach, The Biodiversity Biology of India, Mapin Publishing Pvt. Ltd. Ahmedabad, India.
7. Cunningham, W.P. Cooper, T.H. Gorhani, E. & Hepworth, M.T. 2001. Environmental Encyclopedia. Jaico Publ. House. Mumbai. 1196p.
8. Heywood, V.H. & Watson, R.T. 1995. Global Biodiversity Assessment. Cambridge University Press.
9. Jadhav, H. & Bhosale V.M. 1995. Environmental Protection and Laws, Himalaya Publishing House, Delhi.
10. McKinney, M.L. & Schoch R.M. 1996. Environmental Science systems & Solutions, Web enhanced edition.
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, Prayag Pustak Bhawan, 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. Erach Bharucha, 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

Extension and
outreach programs
conducted by the
institution through
NSS

Short Report

NSS Activities for Academic Yr. 2021-2022

1. Tree Plantation programme.

Date : 15/08/2021

Organized by – NSS Unit Sonamukhi College

Number of volunteers-15

Aim:

- To plant a good number of saplings for environmental safety.
- To generate awareness in people about environment.

Tree Plantation programme
Date : 15/08/2021



2. Food Distribution to Hospitalized persons.

Date : 15/08/2021

Organized by – NSS Unit Sonamukhi College

Number of volunteers-10

Aim:

- Generous to Humanity when the are in distress.

Food Distribution to Hospitalized persons.
Date: 15/08/2021



3. NSS Day Celebration

Date : 24/09/2021

Organized by – NSS Unit Sonamukhi College

Number of volunteers-20

Aim:

- To celebrate the foundation day of NSS and generate knowledge among volunteers regarding the scope of NSS.

NSS Day Celebration

Date : 24/09/2021



4. NSS Special Camp

Date : 23/12/2021 – 29/12/2021

Organized by – NSS Unit Sonamukhi College

Number of volunteers-150

Aim:

- To involve volunteers for the sake of wellness of society, especially at the adopted villages.
- Generation of awareness through seminars.
- Blood Donation awareness.

Some Activities in NSS Special camp :-

- Inaugural session.
- Seminar on “Small scale enterprise development”.
- seminar on “The importance of physical activities from the perspective of NSS”.

- Health Camp in Adopted Village.
- Blood Conation Camp.
- Firefighting Training Programme.
- Cultural programme by NSS Volunteers.

Photo Gallery

Inaugural session

Seminar on "Small scale enterprise development" by KVK



Health checkup programme at adopted village





Blood donation camp in the college



Firefighting Training Programme



Cultural programme by NSS Volunteers



5. Republic Day celebration

Date : 26/01/2022

Organized by – NSS Unit Sonamukhi College

Number of volunteers-15

Aim:

- To celebrate the Republic day of India, along with NSS volunteers of the college.

Republic Day celebration

Date : 26/01/2022



6. Republic Day Parade Camp

Date : 01/01/2022 – 31/01/2022

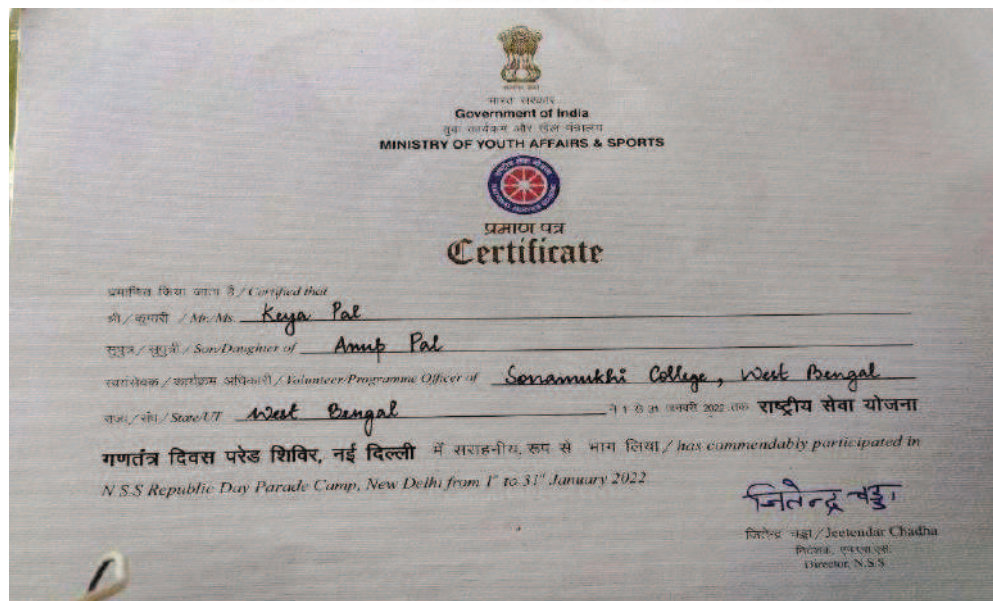
Organized by – Ministry of Youth Affairs & Sports , Govt. of India

Number of volunteers-1

Republic Day Parade Camp News in Daily Newspaper 2022



Certificate for NSS Republic day Parade Camp



7. Campus Cleaning

Date: 08/03/2022

Organized by – NSS Unit Sonamukhi College

Number of volunteers-25

Aim:

- To clean the college campus for cleaner surroundings.

Campus Cleaning

Date: 08/03/2022



8. Blood Donation Camp

Date : 20/04/2022

Organized by – Red Ribbon Club & NSS Unit Sonamukhi College

Number of volunteers-30

Aim:

- To collect blood for blood bank through voluntary blood donation.

Blood Donation Camp

Date 20/04/2022



9. Swachh Bharat Abhiyan

Date : 26/04/2022

Organized by – Bankura University & NSS Unit Sonamukhi College

Number of volunteers-11

Aim:

- To clean the college campus for cleaner surroundings.
- To fulfil the motive of “Swachhta hi Seva programme”, Govt. of India.

Swachh Bharat Abhiyan

Date: 26/04/2022



10. National Integration Camp

Date : 18/05/2022 – 24/05/2022

Organized by – Ministry of Youth Affairs & Sports , Govt. of India

Number of volunteers-1

National Integration Camp

Date : 18/05/2022 – 24/05/2022



11. Bishwa Parivesh Divas Saptah Palan

Date : 05/06/2022 – 11/06/2022

Organized by – NSS Unit Sonamukhi College

Number of volunteers-20

Aim :

- a global platform for public outreach.
- a platform for raising awareness on environmental issues as marine pollution, overpopulation, global warming, sustainable development and wildlife crime.

Bishwa Parivesh Divas Saptah Palan

Date : 05/06/2022 – 11/06/2022



12. International Yoga Day

Date : 21/06/2022

Organized by – NSS Unit Sonamukhi College

Number of volunteers-15

Aim :

- To involve volunteers into the practice of yoga and make them understand its importance.
- Generation of awareness among people regarding importance of yoga.

International Yoga Day

Date : 21/06/2022



Extension and
outreach programs
conducted by the
institution through
NCC

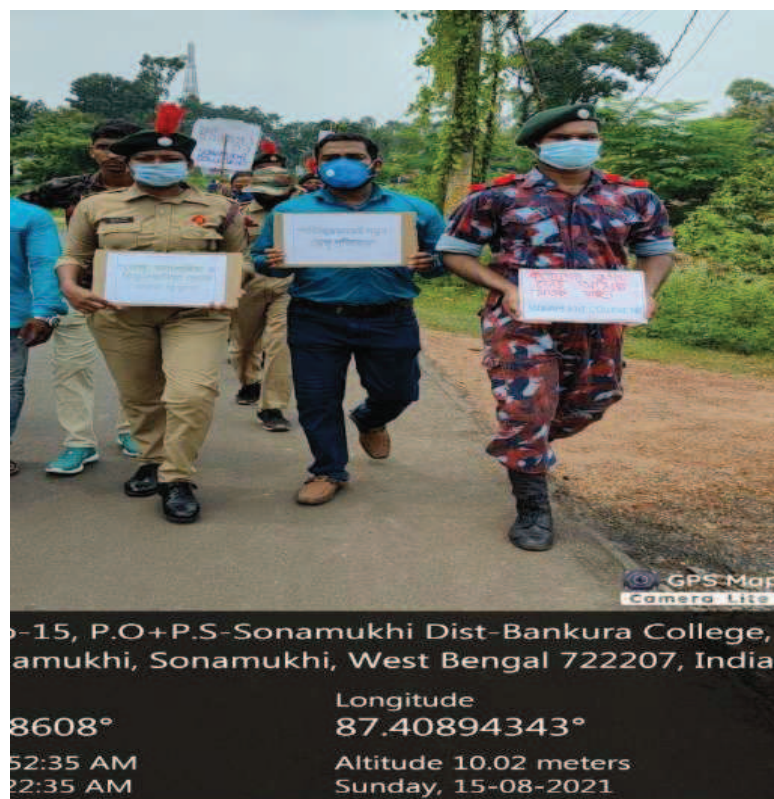
- **Title of the programme:** 75th Independence Day Celebration and Covid-19 Awareness Rally and Fruit Distribution at Sonamukhi Hospital.
- **Organized by :** NCC Unit and Sonamukhi College
- **Date of the programme :** 15th August, 2021
- **Funding Agency :** Sonamukhi College
- **Number of student participants :** 45 Cadets
- **Number of Teacher participated :** 08
- **Place of extension / outreach activity :** College campus and Sonamukhi Hospital

❖ **Aims and Objectives:**

- To show our solidarity towards the Nation.
- To pay our tribute to our freedom fighters who laid down their lives for the country and its freedom.
- To keep the love for India alive.
- To aware people about Dengue and Covid -19.

❖ **Programme Outcome:** Independence Day teaches students about the value of Independence as a nation, as a community. It is the day when we feel the love and patriotism for the country. Cadets will realize the importance of service to the nation, as they will learn about the sacrifices and struggles of the freedom fighters. It increases their self-awareness and sensitivity to others, teaching them to help others around them. It builds other essential traits, including patience, self-help, cooperation, self-discipline and self-confidence.







- **Title of the programme** : FIT INDIA FREEDOM RUN
- **Organized by** : Department of Youth Affairs, Govt of India
- **Date of the programme** : 15th August, 2021
- **Funding Agency** : Sonamukhi College
- **Number of student participants** : 42 cadets participated
- **Number of Teacher participated** : 2
- **Place of extension / outreach activity** : Sonamukhi Locality
- **Beneficiaries** : People of Sonamukhi
- **MOTTO** : Fitness Ka Dose, Aadha Ghanta Roz

❖ **Aims and Objectives:**

- To spread awareness on fitness and various physical activities that promote fitness.
- To encourage people to take up fitness activities such as running and sports in their daily lives and get free from obesity, laziness, stress, anxiety, diseases, etc.
- To promote fitness as easy, fun and free.
- To bring about behavioral changes and move towards a more physically active life style.
- To encourage people to take up fitness activities such as running and sports in their daily life.

❖ **Programme outcome:** The cadets who attended the event created public awareness on the need to maintain good physical condition through regular exercise.





-
- **Title of the programme** : **Tribute to CDS Bipin Rawat.**
- **Organized by** : NCC Unit and Sonamukhi College
- **Date of the programme** : 10th December, 2022
- **Funding Agency** : Sonamukhi College
- **Number of student participants** : 42 cadets participated
- **Number of Teacher participated** : 02
- **Place of extension / outreach activity** : College campus

❖ **Aims and Objectives:**

- To give knowledge about Defense service of our country.
- To give information about First CDS of our Country.
- To ignite the spirit of national integration among the cadets and common people in general.
- To grow Nationhood among the cadets and in the society also.
- To spread awareness and collective consciousness.

❖ **Programme outcome:**

- Cadets have got several informations about Defense service.

- Cadets gain knowledge about our country's first CDS.
- Cadets have realized the importance of service to a nation.
- Cadets have learn about the sacrifices and struggles of a freedom fighter.
- This programme will help them in increasing self-awareness and sensitivity to others.



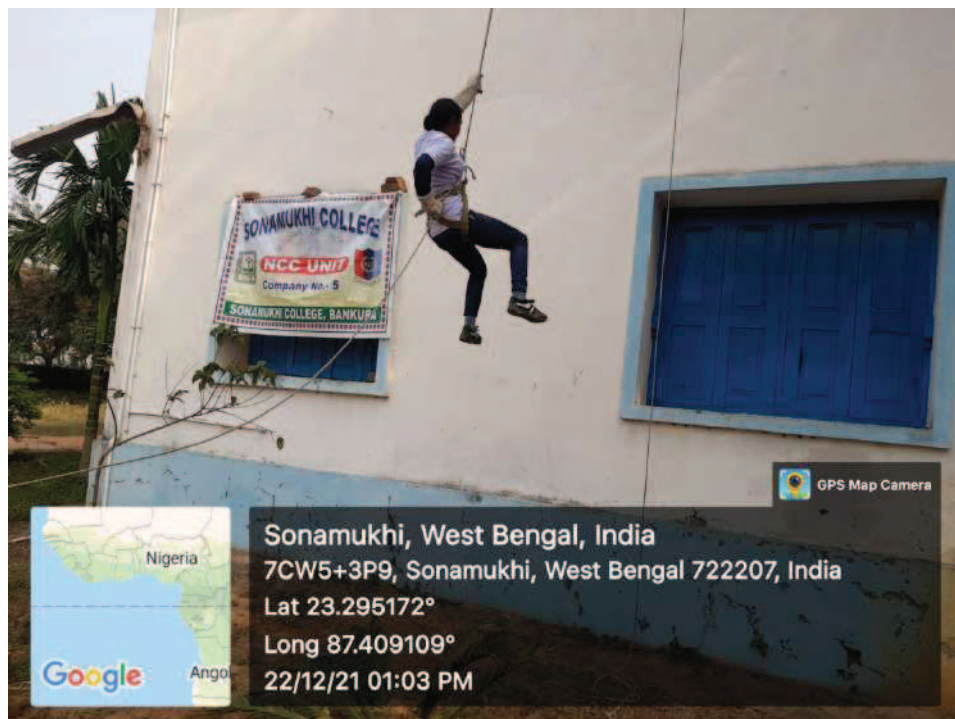
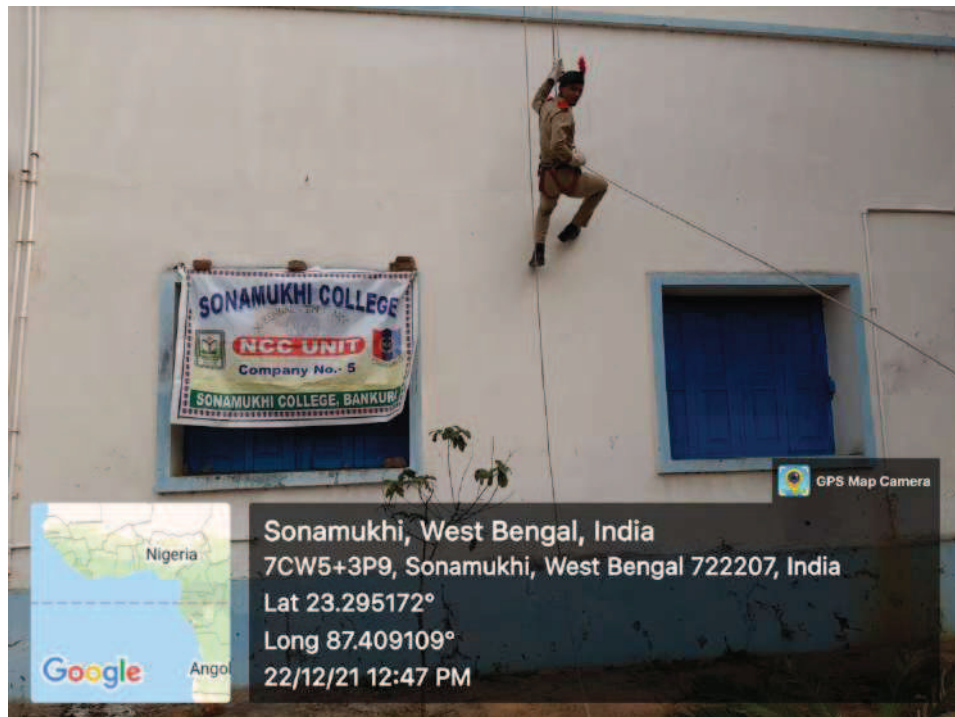
- **Title of the programme** : **Trekking and Rapling**
- **Organized by** : NCC Unit & DMA
- **Date of the programme** : 22th December, 2021
- **Funding Agency** : Sonamukhi College
- **Number of student participants** : 34 cadets participated
- **Number of Teacher participated** : 4
- **Place of extension / outreach activity** : College campus
- **Beneficiaries** : Teachers & Cadets

❖ **Aims and Objectives:**

- To promote national integration, camaraderie, and a spirit of adventure.
- To develop character, personality and ideals of selfless service.
- The cadets would become familiar with the culture of various places.

❖ **Programme outcome:**

- Improve Fitness and Weight loss of the cadets.
- Trekking & Rapling enables the cadets to reduce the risk of diabetes, strokes, heart failures, and heart attacks.
- Trekking & Rapling enables cadets to grow leadership skills and enhance their character qualities.
- It would also build self-confidence, self-discipline and gain problem solving skills, leadership skills and enhance awareness about the environment.



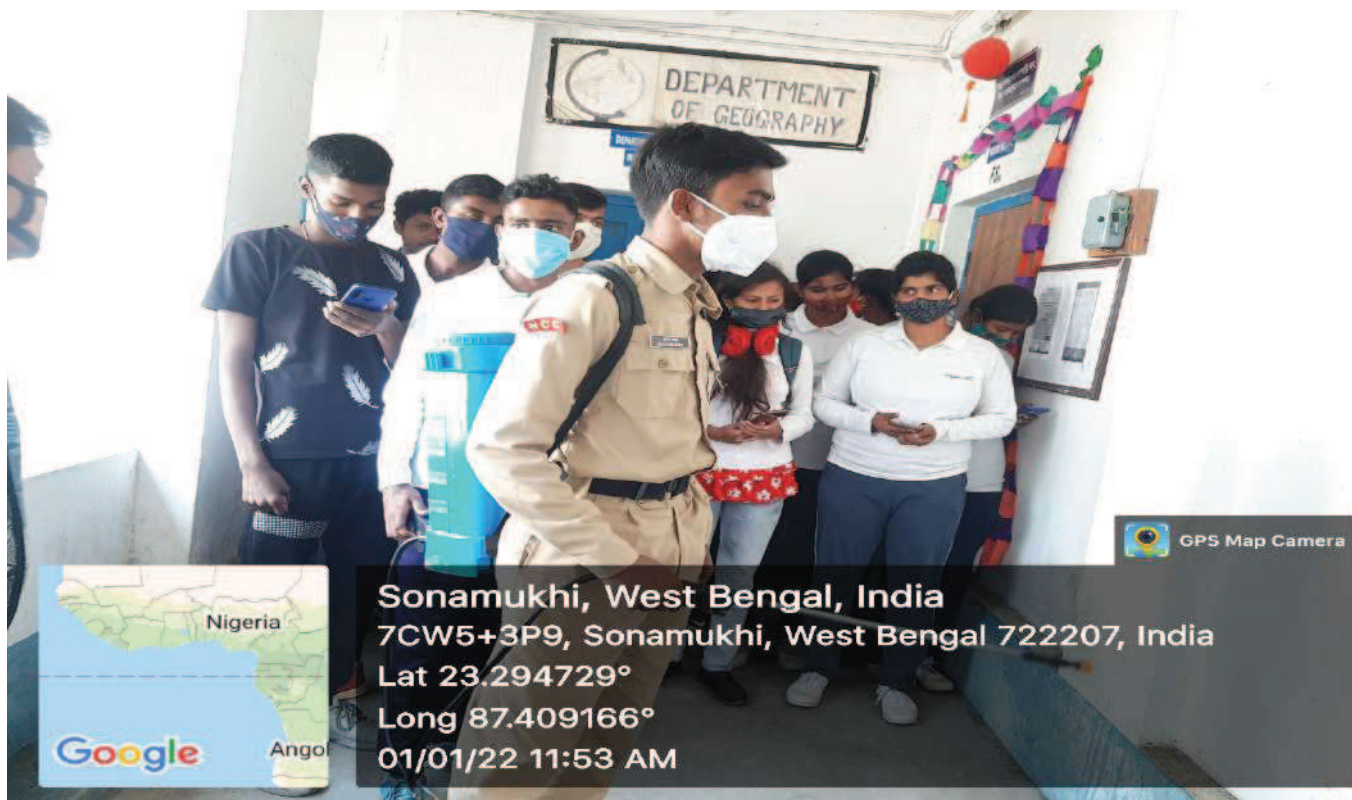
- **Title of the programme** : **COLLEGE CAMPUS SANITIZATION**
- **Organized by** :NCC UNIT
- **Date of the programme** : 1st JANUARY, 2022
- **Funding Agency** :Sonamukhi College
- **Number of student participants** : 77 cadets participated
- **Number of Teacher participated** : 2
-

❖ **Aims and Objectives:**

- To spread awareness about cleanliness and sanitization.
- To encourage people to be clean and hygiene in their daily lives and get free from obesity, laziness, stress, anxiety, diseases, etc.
- To promote awareness and collective consciousness among the students.
- To bring about behavioral changes and move towards a more physically active life style.

❖ **Programme outcome:**

- Cadets have got several informations about Sanitization.
- Cadets gain knowledge about health and hygiene.
- Cadets have realized the importance of cleanliness.
- Cadets have learn about themaintananeof social distancing and sanitization.
- This programme will help them in increasing self-awareness ans sensitivity to others.



- Title of the programme** : BirthDay celebration of Netaji Subhas Chandra Bose
- **Organized by** : NCC Unit and Sonamukhi College
 - **Date of the programme** : 23rd January, 2022
 - **Funding Agency** : Sonamukhi College
 - **Number of student participants** : 71 Cadets
 - **Number of Teacher participated** : 08

❖ **Aims and Objectives:**

- To show our solidarity towards the Nation.
- To pay our tribute to our freedom fighters who laid down their lives for the country and its freedom.
- To keep the love for India alive.
- To show our love and respect to the freedom fighters of our country.

❖ **Programme outcome:-**

It is traditionally observed in all over India. It is an official holiday in West Bengal, Jharkhand, Tripura and Assam. The Government of India pays tribute to Netaji on this day. Netaji Jayanti was observed as Parakram Diwas from 2021. 23rd January teaches students about the value of love and patriotism for the country. Cadets will realize the importance of service to the nation, as they will learn about the sacrifices and struggles of the freedom fighters. It increases their self-awareness and sensitivity to others, teaching them to help others around them. It builds other essential traits, including patience, self-help, cooperation, self-discipline and self-confidence.



V



- Title of the programme** : Republic Day Celebration
- **Organized by** : NCC Unit and Sonamukhi College
- **Date of the programme** : 26th January, 2022
- **Funding Agency** : Sonamukhi College
- **Number of student participants** : 75 Cadets
- **Number of Teacher participated** : 12

❖ **Aims and Objectives:**

- To show our solidarity towards the Nation.
- To pay our tribute to our freedom fighters who laid down their lives for the country and its freedom.
- To keep the love for India alive.
- To show our love and respect to the freedom fighters of our country.

❖ **Programme Outcome:-**

It is traditionally observed in all over India. It is an official holiday in West Bengal, Jharkhand, Tripura and Assam. The Government of India pays tribute to Netaji on this day. Netaji Jayanti was observed as Parakram Diwas from 2021. 23rd January teaches students about the value of love and patriotism for the country. Cadets will realize the importance of service to the nation, as they will learn about the sacrifices and struggles of the freedom fighters. It increases their self-awareness and sensitivity to others, teaching them to help others around them. It builds other essential traits, including patience, self-help, co-operation, self-discipline and self-confidence.



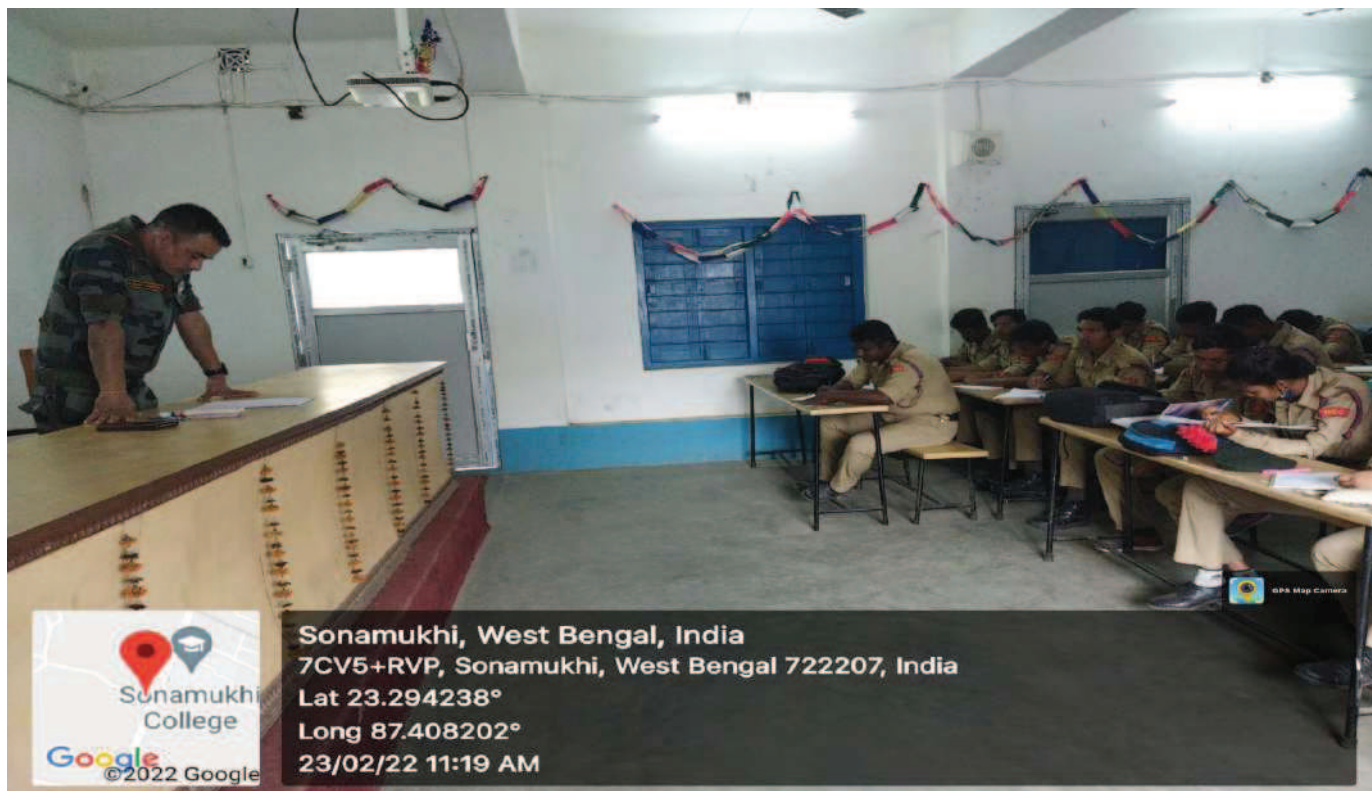
- **Title of the programme** :Theory class taken by Army officials
- **Organized by** :NCC Unit and Sonamukhi College
- **Date of the programme** :23rd February, 2022
- **Funding Agency** :Sonamukhi College
- **Number of student participants** :49 cadets participated
- **Number of Teacher participated** :01
- **Place of extension / outreach activity** : College campus

❖ **Aims and Objectives:**

- To give knowledge about Defense and NCC.
- To give information about NCC Army Wing.
- To ignite the spirit of national integration among the cadets and common people in general.
- To grow Nationhood among the cadets and in the society also.
- To discuss on the syllabus pattern, exam etc.

❖ **Programme outcome:**

- Cadets have got several information about Defense services.
- Cadets gain knowledge about our country's first CDS.
- Cadets have realized the importance of service to a nation.
- Cadets have learn about the sacrifices and struggles of army personals.
- This programme will help them in increasing self-awareness and sensitivity to others.



- **Title of the programme** : **MEDICINAL GARDEN AND CAMPUS CLEANING**
- **Organized by** :NCC UNIT
- **Date of the programme** : 25th March , 2022
- **Funding Agency** :Sonamukhi College
- **Number of student participants** : 36 cadets participated
- **Number of Teacher participated** : 01
-

❖ **Aims and Objectives:**

- To spread awareness about cleanliness and sanitization.
- To encourage people to be clean and hygiene in their daily lives and get free from obesity, laziness, stress, anxiety, diseases, etc.
- To promote awareness and collective consciousness among the students .
- To bring about behavioral changes and move towards a more physically active life style.

❖ **Programme outcome:**

- Cadets have got several information about Medicinal Plants.
- Cadets gain knowledge about health and hygiene.
- Cadets have realized the importance of cleanliness.
- Cadets have learn about the maintenance of garden and medicinal plants.
- This programme will help them in increasing self-awareness and sensitivity to others.



, West Bengal, India
Sonamukhi, West Bengal 722207, India



Sonamukhi, West Bengal, India
7CW6+3P9, Sonamukhi, West Bengal 722207, India
Lat 23.294672°
Long 87.408788°
25/03/22 10:01 AM



Sonamukhi, West Bengal, India
7CW5+3P9, Sonamukhi, West Bengal 722207, India
Lat 23.294672°
Long 87.408788°
25/03/22 10:01 AM

- **Title of the programme** :Blood Donation Camp
- **Organized by** :NCC Unit and Sonamukhi College
- **Date of the programme** :20th April , 2022
- **Funding Agency** :Sonamukhi College
- **Number of student participants** : 51 cadets participated
- **Number of Teacher participated** : 05
- **Place of extension / outreach activity** : College campus

❖ Aims and Objectives:

- To donate Blood.
- To give social service and to support Blood Bank.
- To ignite the spirit of national integration among the cadets and common people in general.
- To grow Nationhood among the cadets and in the society also.

❖ Programme outcome:

- Cadets have got several informations about Blood Donation.
- Cadets gain knowledge about Blood Donation Bank.
- Cadets have realized the importance of service to a nation.
- This programme will help them in increasing self-awareness and sensitivity to others.





- **Title of the programme:** ANTI TOBACCO DAY CELEBRATION
- **Organized by** : NCC UNIT
- **Date of the programme** : 31st MAY, 2022
- **Funding Agency** : Sonamukhi College
- **Number of student participants** : 49 cadets participated
- **Number of Teacher participated** : 01
- **Place of extension / outreach activity** : SonamukhiBDO Office
- **Beneficiaries** : People of Sonamukhi
- **MOTTO** : Tobacco free Life.

❖ **Aims and Objectives:**

- To spread awareness on Tobacco free life.
- To encourage people to leave Smoking and get free from obesity, laziness, stress, anxiety, diseases, etc.
- To promote fitness as easy, fun and free.
- To bring about behavioral changes and move towards a more physically active life style.
- To encourage people to take up fitness activities such as running and sports in their daily life.

❖ **Programme outcome:** The cadets who attended the event created public awareness on Tobacco free life and to maintain good physical condition through regular exercise and smoking free life.





- **Title of the programme** : **INTERNATIONAL YOGA DAY CELEBRATION**
- **Organized by** :NCC UNIT
- **Date of the programme** : 21st JUNE, 2022
- **Funding Agency** :Sonamukhi College
- **Number of student participants** : 64 cadets participated
- **Number of Teacher participated** : 04
- **MOTTO** : Fitness Ka Dose, Aadha Ghanta Roz.

❖ **Aims and Objectives:**

- To spread awareness on fitness and various physical activities that promote fitness through Yoga.
- To encourage people to take up fitness activities such as running and sports in their daily lives and get free from obesity, laziness, stress, anxiety, diseases, etc.
- To promote fitness as easy, fun and free.
- To bring about behavioral changes and move towards a more physically active life style.

❖ **Programme outcome:** The cadets who attended the event created public awareness on the need to maintain good physical condition through regular Yoga practice.





Sonamukhi, West Bengal, India
7CV5+WM6, Sonamukhi, West Bengal 722207, India
Lat 23.294652°
Long 87.409291°
21/06/22 09:03 AM



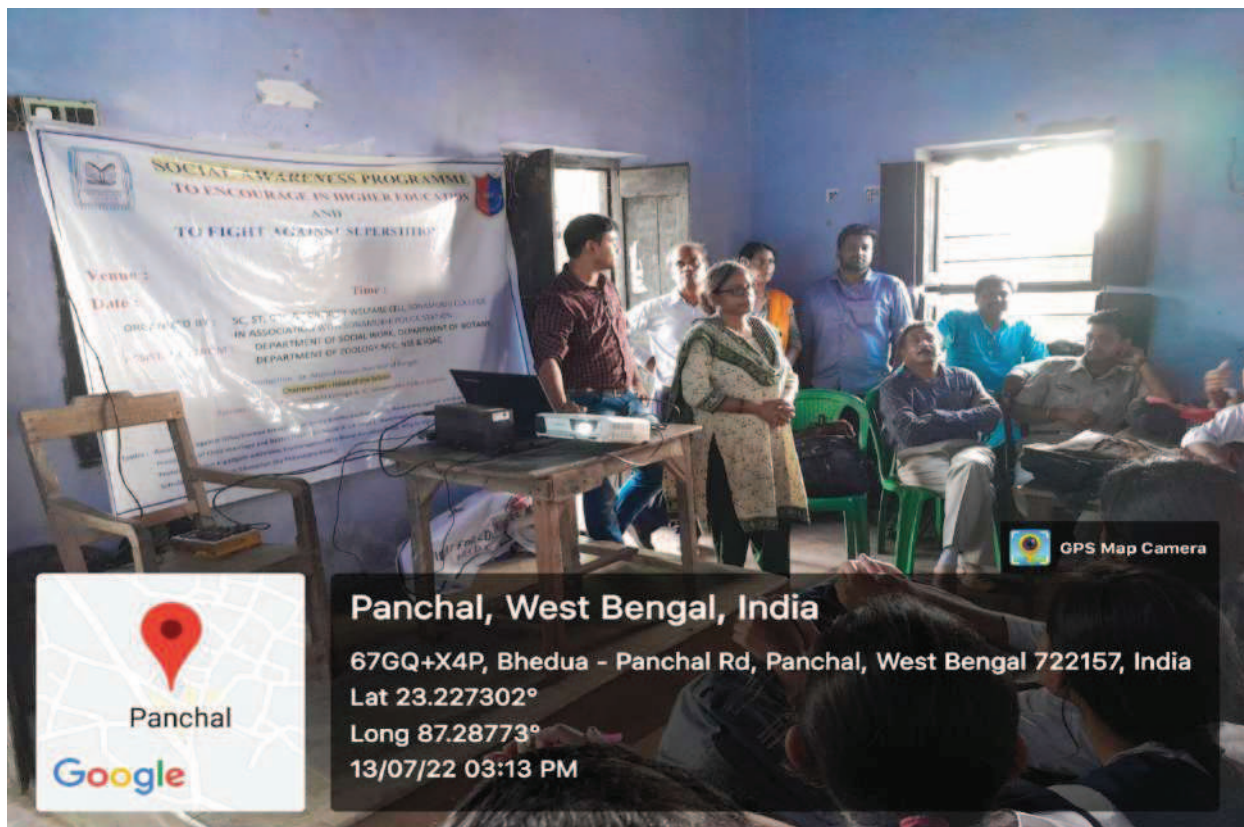
Sonamukhi, West Bengal, India
7CV5+WM6, Sonamukhi, West Bengal 722207, India
Lat 23.294651°
Long 87.409191°
21/06/22 09:08 AM

- **Title of the programme** : **SOCIAL AWARENESS PROGRAMME**
- **Organized by** : NCC UNIT AND POLICE STATION
- **Date of the programme** : 18th July, 2022
- **Funding Agency** : Sonamukhi College
- **Number of student participants** : School Students
- **Number of Teacher participated** : 04

❖ Aims and Objectives:

- To spread awareness about cleanliness and sanitization.
- To spread awareness on some issues like Snake Bite, Child Marriage.
- To promote awareness and collective consciousness among the school students.
- To bring about behavioral changes and move towards a more physically active life style.

Motto :- To Spread awareness on some important issues among the School Students.





Extension and
outreach programs
conducted by the
institution through
Government and
Government
recognized bodies

Awareness Programme



Title of the programme : SOCIAL AWARENESS PROGRAMME TO FIGHT AGAINST SUPERSTITION

- **Organized by** : Sonamukhi College and Police Station
- **Date of the programme** : 13th July, 18th July, 25th July and 18th July
- **Number of student participants** : School Students

❖ **Aims and Objectives:**

- To spread awareness on some issues related to superstition like Snake Bite, Child Marriage and supernatural activity.
- To promote awareness and collective consciousness among the school students in cross-cultural lens.
- To bring about behavioral changes and move towards a more physically active and healthy life style.
- To spread awareness about some specific diseases (like dengue, malaria etc), cleanliness and sanitization

Green Audit



Sonamukhi College

Sonamukhi, Bankura

Academic Session 2021-22

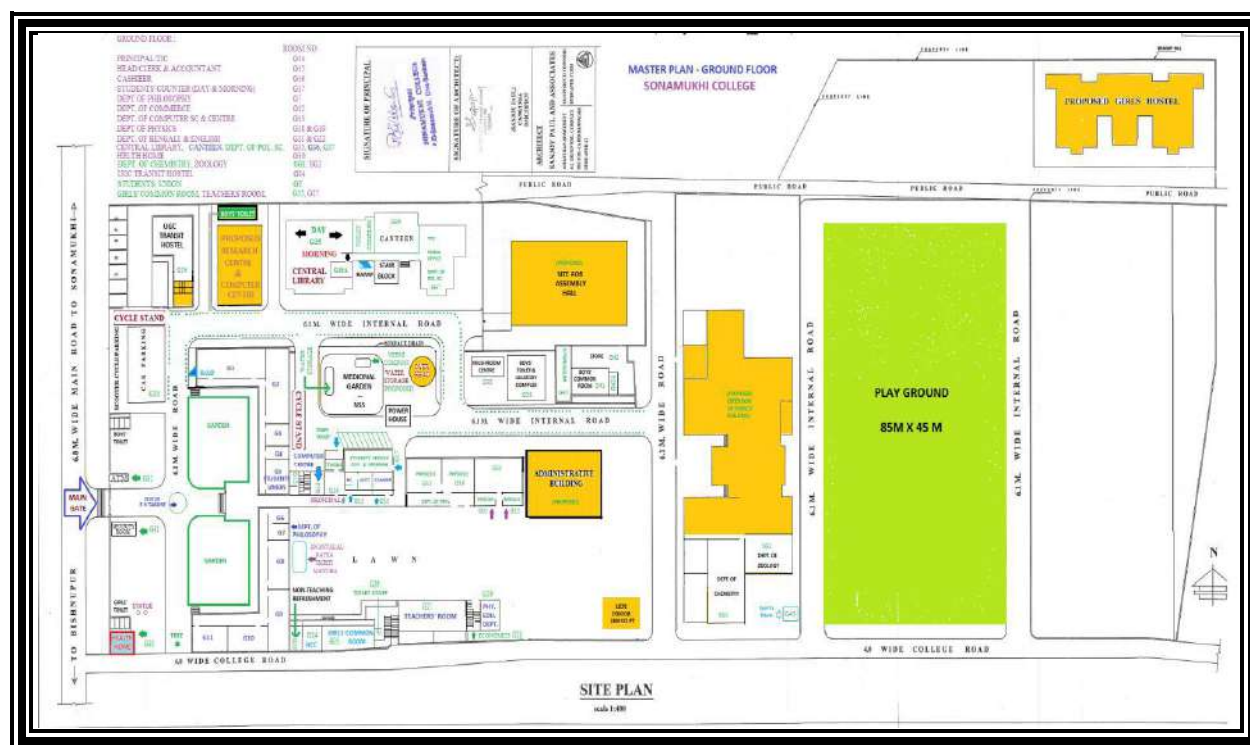
Sonamukhi is a municipality town and in Bankura District of West Bengal and located at 23°18'N latitude and 87°25'E longitude. It has an average elevation of 66 msl (217 ft). Temperature of Sonamukhi ranges from 11°C to 42°C with average rainfall of 109 mm, tropical climatic condition, the soil mainly belong to laterite group, pH 5-6.9 which favour green vegetation in Sonamukhi. Sonamukhi college is situated beside the forest of Sonamukhi Range. It is a tropical dry deciduous forest under Bankura North Forest Division, West Bengal.

The forest is dominated by plants like *Shorea robusta* Gaertn. (sal), admixed with several *Madhuca latifolia* (Roxb.) J.F. Macbr., *Diospyros melanoxylon* Roxb., *Phoenix acaulis* Roxb., *Ziziphus oenopolia*(L.) Mill., some climbers and lianas. Some forest plants are remain in college campus like *Madhuca latifolia* (Roxb.) J.F. Macbr., *Diospyros melanoxylon* Roxb. etc.

Different types of plants (trees, shrubs and herbs) are present in college campus. Some medicinal plants are preserved in medicinal garden under human care. Some plants are grown naturally, some are planted by plantation programme by NSS volunteers.

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.



Map of the Campus of Sonamukhi College

To maintain eco-friendly ambience 12 point programmed is followed within college campus:

- Green building for quality living.
- Know green and think green is promoted on the campus.
- Water conservation and prevention of water wastage.
- Use CFL/LED bulbs instead florescent bulbs.
- New solar panel is set up on the roof top of administrative building.
- 20 KVA & 10 KVA generators are used to save diesel.
- Usage of recycled paper bags was promoted among students .
- Reduce – reuse – recycle methods are followed
- Biodegradable wastes are used in vermicomposting unit.
- Carbon dioxide neutrality is maintained on the campus by developing greenery.
- Turning off monitors after the work.
- Global warming, bio-diversity and pollution incorporated in the curriculum.

The initiatives taken by the college to make the campus ecofriendly

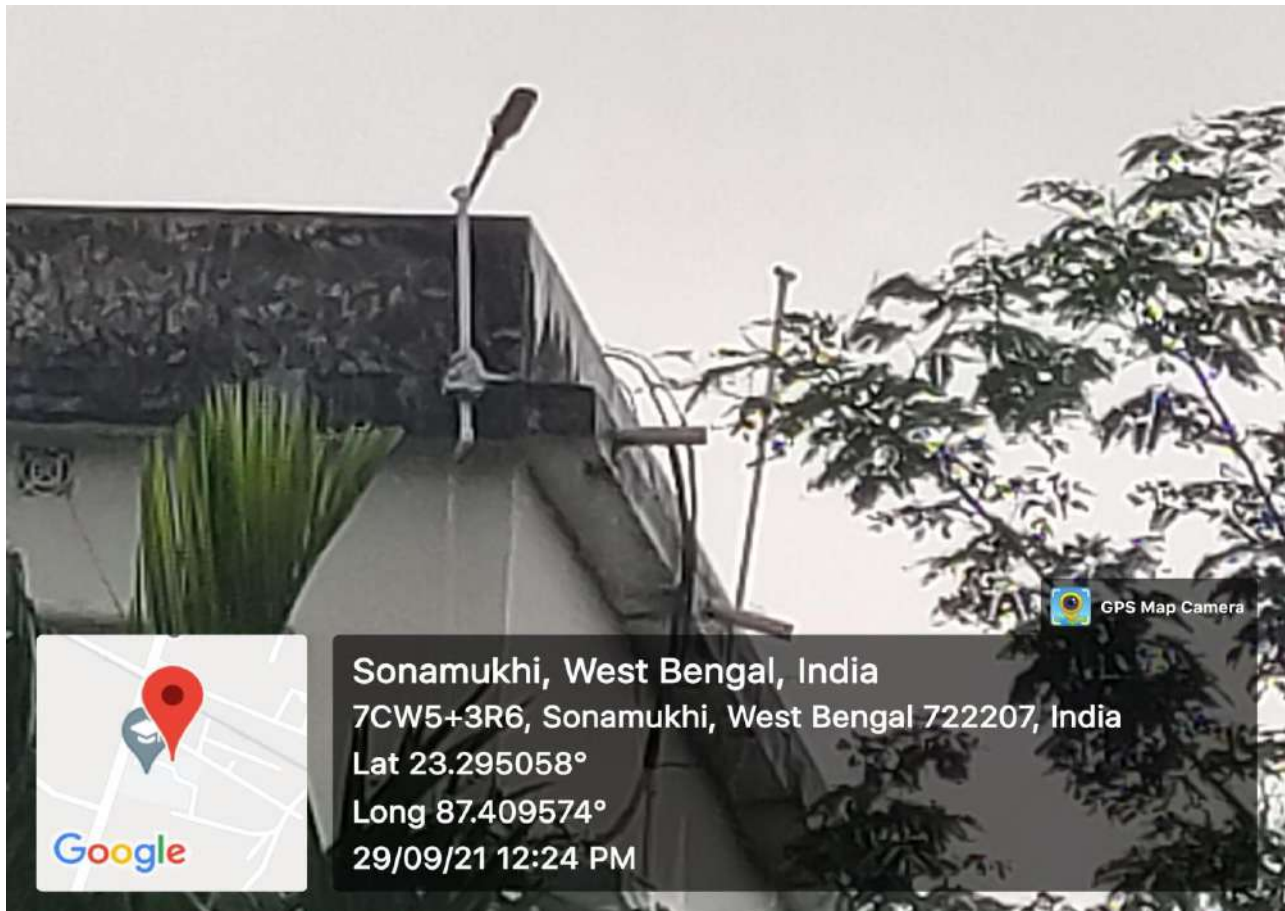
1. Energy conservation :

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. 5 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. In this year (2021-22) we have installed another solar panel on the roof top of administrative building. Electric lights are rarely switched on during the day. Sunlight is our principle source of lighting .

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.

2. Use of renewable energy :

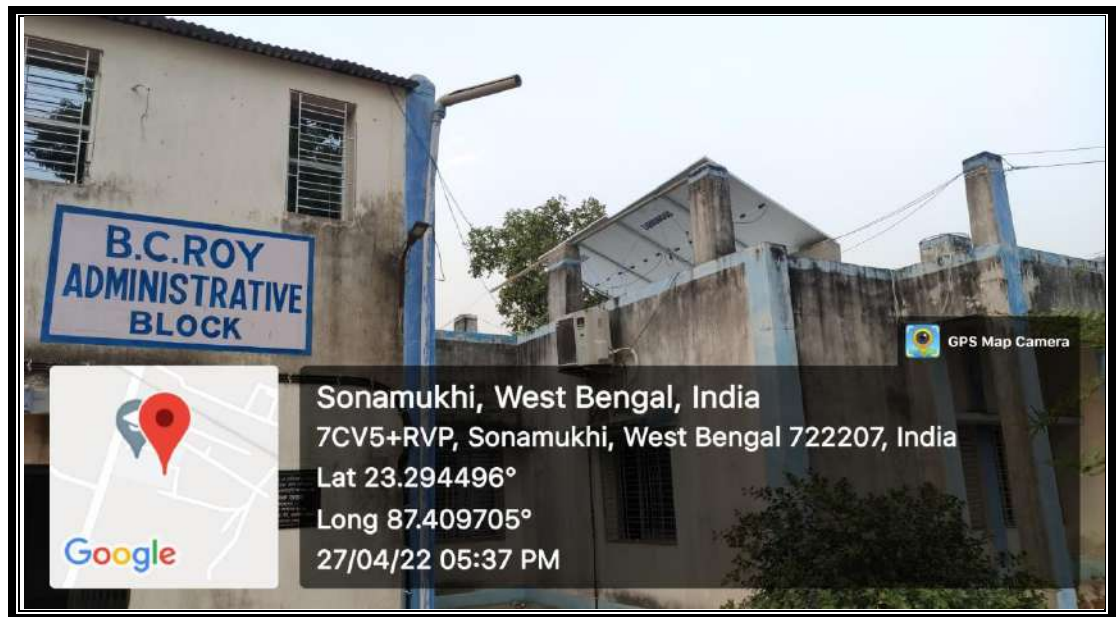
Renewable energy is **useful energy that is collected from renewable resources**, which are naturally replenished on a human timescale, including carbon neutral sources like sunlight, wind, rain, tides, waves, and geothermal heat energy. Sunlight is one of our planet's most abundant and freely available energy resources. By using photovoltaic cells to capture and convert the sun's rays into electricity, solar panels transform light into usable energy. College has set up solar plant to light up the college campus and the area in front of the college building .



SOLAR LIGHT FOR CAMPUS LIGHTENING



SOLAR PANEL (3 KILOWATT) ON ROOF TOP



New set up of Solar Panel



Use of LED bulbs in Laboratory

3. Water harvesting :

Rain water is harvested in two tanks located in medicinal garden. The college has roof top harvesting method by directing rain water into a large storage tank in medicinal garden, which has capacity around 4000 liter. This water is used mainly to irrigate plants in medicinal garden.

Some portion of roof top water is directed through pipe towards the garden in front of our college to irrigate garden plants specially in summer season when small precipitation occur due to summer depression.

Some portion of roof top water is directed to open well through water recharge point.

To create awareness on conservation of water to the public NSS volunteers campaign about the importance of water in daily life in their adopted village.

Water leakages are continuously checked to prevent wastage of water by the employee.



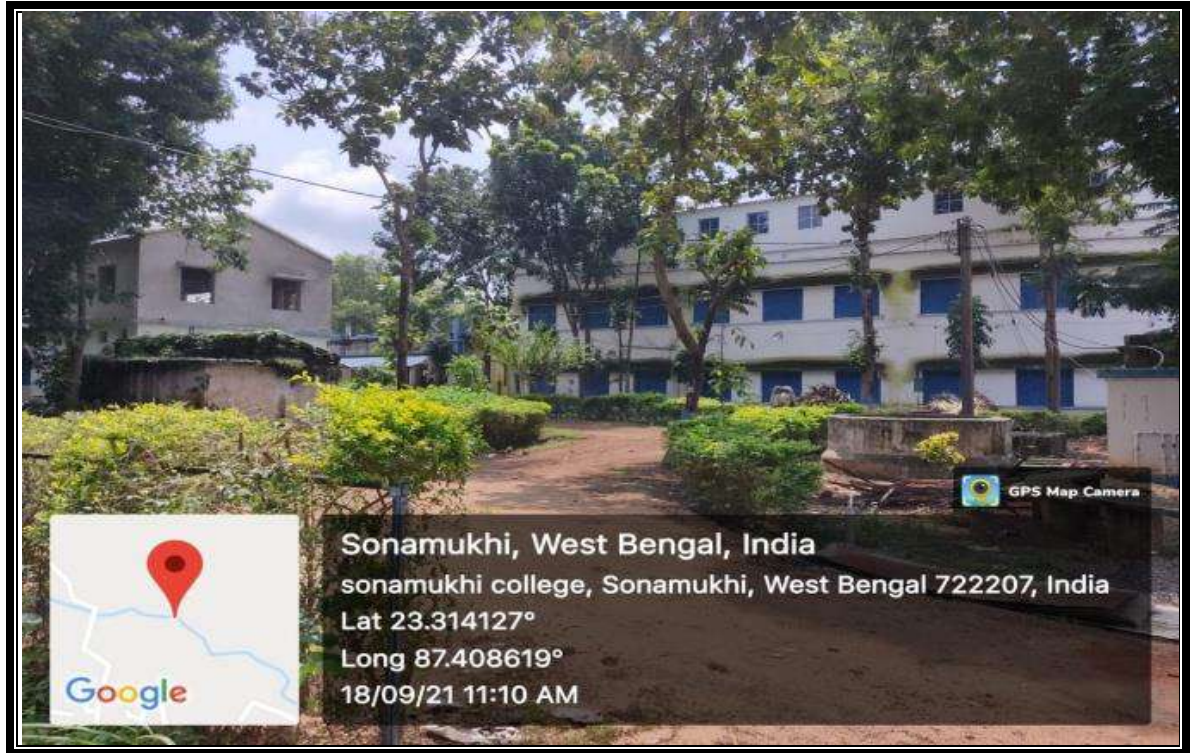
BOREWELL /OPEN WELL RECHARGE



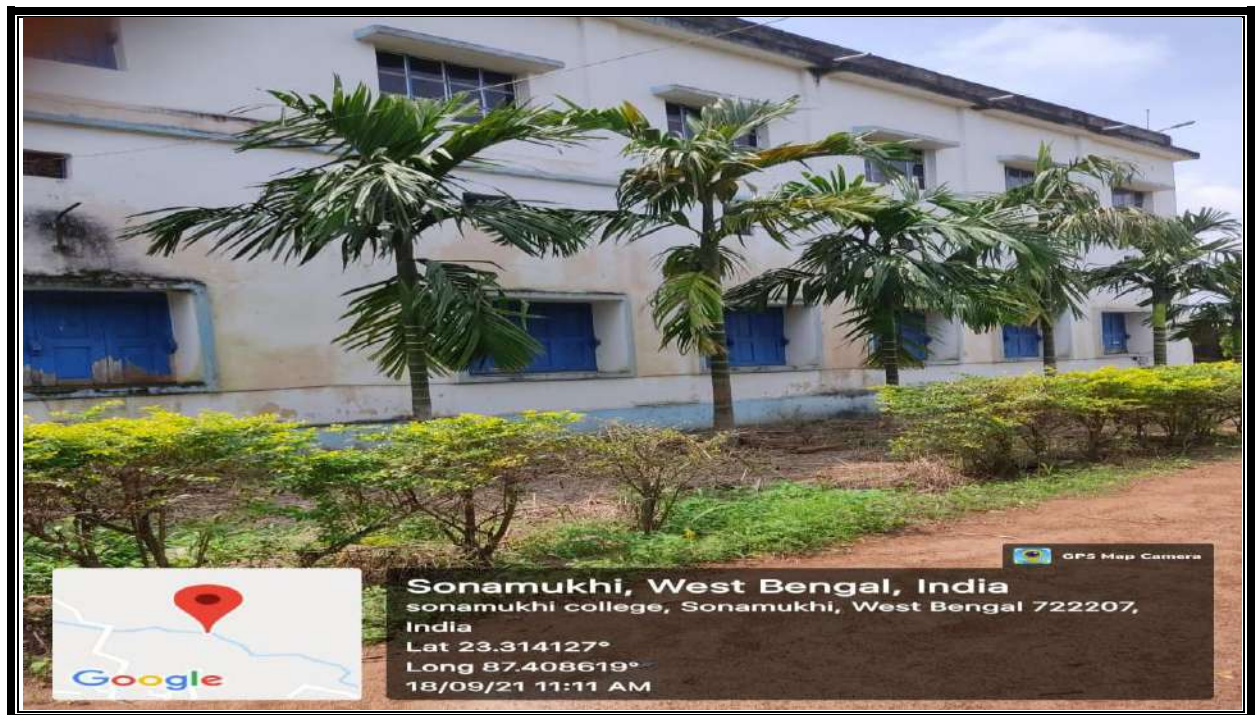
RAIN WATER HARVESTING

4. Plantation :

The college has trees and plants that make the college campus green. The college campus has around 100 trees and many herbs including medicinal plants.



LANDSCAPING WITH TREES AND PLANTS



LANDSCAPING WITH TREES AND PLANTS

Different types of plants found in college campus are given below:

PLANTS IN COLLEGE CAMPUS

BOTANICAL NAME	FAMILY
1. <i>Polyalthia longifolia</i>	Anonaceae
2. <i>Tectona grandis</i>	Verbenaceae
3. <i>Roystonea regia</i>	Arecaceae
4. <i>Mangifera indica</i>	Anacardiaceae
5. <i>Mussandus frondus</i>	Rubiaceae
6. <i>Acacia moliniformis</i>	Mimosaceae
7. <i>Croton bonplandianum</i>	Euphorbiaceae
8. <i>Cycas circinalis</i>	Cycadaceae
9. <i>Duranta pulmieri</i>	Verbenaceae
10. <i>Gardenia latifolia</i>	Rubiaceae
11. <i>Hibiscus rosa-sinensis</i>	Malvaceae
12. <i>Ixora parviflora</i>	Rubiaceae
13. <i>Thuja occidentalis</i>	Cupressaceae
14. <i>Rosa indica</i>	Rosaceae
15. <i>Euphorbia hirta</i>	Euphorbiaceae
16. <i>Caesalpinia pulcherima</i>	Caesalpinaceae
17. <i>Canna indica</i>	Cannaceae
18. <i>Melia azadirachta</i>	Meliaceae
19. <i>Araucaria excelsa</i>	Araucariaceae
20. <i>Chrysanthemum sp.</i>	Asteraceae
21. <i>Switenia mehagini</i>	Meliaceae
22. <i>Sida cordifolia</i>	Malvaceae
23. <i>Madhuca indica</i>	Sapotaceae
24. <i>Borassus flabelifer</i>	Arecaceae
25. <i>Leucus aspera</i>	Lamiaceae
26. <i>Zymnema sylvestris</i>	Apocynaceae
27. <i>Datura metel</i>	Solanaceae
28. <i>Oldenlandia corymbosa</i>	Rubiaceae
29. <i>Adhatoda vasica</i>	Acanthaceae
30. <i>Bacopa moneri</i>	Scrophulariaceae
31. <i>Lindernia sp</i>	Scrophulariaceae

32. <i>Ficus religiosa</i>	Moraceae
33. <i>Peltoforum sp.</i>	Fabaceae
34. <i>Eupatorium sp.</i>	Asteraceae
35. <i>Michenia sp.</i>	Asteraceae
36. <i>Spermacoce hispida</i>	Rubiaceae
37. <i>Clerodendron sp.</i>	Acanthaceae
38. <i>Achyranthus aspera</i>	Amaranthaceae
39. <i>Spilanthus sp.</i>	Asteraceae
40. <i>Cassia sophera</i>	Caesalpiniaceae
41. <i>Cassia oxidentalis</i>	Caesalpiniaceae
42. <i>Cassia tora</i>	Caesalpiniaceae
43. <i>Vernonia sp.</i>	Asteraceae
44. <i>Blumia sp.</i>	Asteraceae
45. <i>Paperomia sp.</i>	Piperaceae
46. <i>Scoparia dulcis</i>	Scrophulariaceae
47. <i>Sida cordifolia</i>	Malvaceae
48. <i>Cyperus sp.</i>	Cyperaceae
49. <i>Cynodon sp.</i>	Cyperaceae
50. <i>Cephalandra indica</i>	Cucurbitaceae
51. <i>Tephrosia purpurea</i>	Fabaceae
52. <i>Crotalaria pallida</i>	Fabaceae
53. <i>Jatropha sp.</i>	Euphorbiaceae
54. <i>Calotropis procera</i>	Asclepiadaceae
55. <i>Eragrostis sp.</i>	Poaceae
56. <i>Vitex negundo</i>	Verbenaceae

57. <i>Ruellia prostrata</i>	Acanthaceae
58. <i>Eclipta alba</i>	Asteraceae
59. <i>Centella asiatica</i>	Apiaceae
60. <i>Aloe vera</i>	Asphodelaceae
61. <i>Rhoeo discolor</i>	Commelinaceae
62. <i>Curcuma longa</i>	Zingiberaceae
63. <i>Curcuma amada</i>	Zingiberaceae
64. <i>Mentha spicata</i>	Lamiaceae
65. <i>Dryospyros melanoxylon</i>	Ebenaceae
66. <i>Syzygium aromaticum</i>	Myrtaceae
67. <i>Gmelina arboria</i>	Verbenaceae

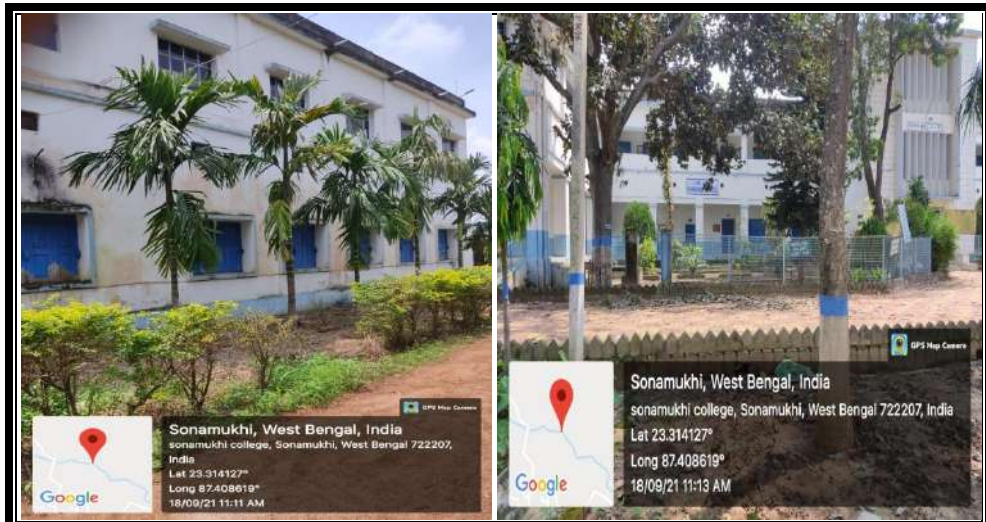
A special days like environment day/banomahotsab we celebrate it by new plantation in our campus mainly by the NSS volunteers, staff and teachers.

We wel come of our guests by giving sapling .

The college employs persons for periodic pruning of trees and plants.

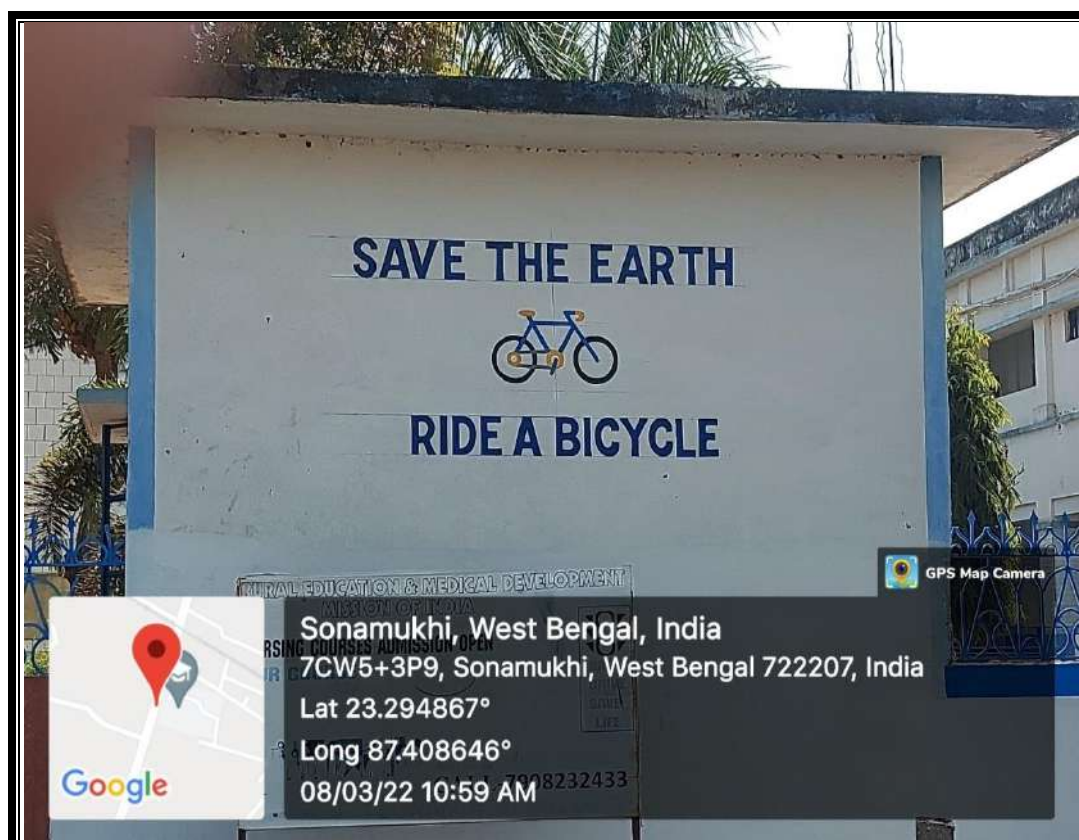
As an effort towards creating awareness on plantation, our students are encouraged to plant saplings in their homes following the policy of 'one house, five trees'.

Newly appointed teachers and staffs plant a sapling within the campus on his or her date of joining. Teacher or staff also plant a sapling on his/her date of retirement.

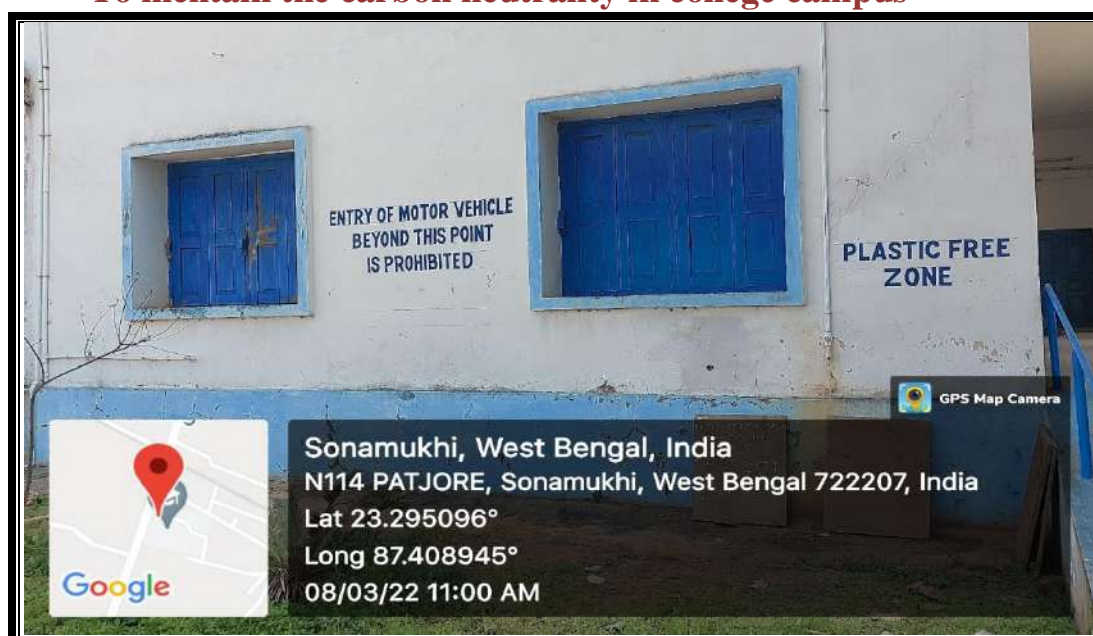




Plantation Programme by NSS volunteers in college campus



USE OF BICYCLES/ BATTERY POWERED VEHICLES
To maintain the carbon neutrality in college campus



RESTRICTED ENTRY OF AUTOMOBILES
To maintain the carbon neutrality in college campus

5. waste management :

The functioning of the college exerts negligible stress on waste management. This has been achieved owing to the consciousness programmes arranged periodically for the students and staff. These programmes have highlighted the influence of anthropogenic activities on the environment. Moreover, a number of practices have been initiated to reduce the generation of wastes.

1. *Solid Waste:*

Biodegradable waste products originate from college canteen are store in small pit for composting which are later used as compost fertilizer in garden plant. Soft weeds and waste from canteen are sometimes dipose in a digesting chamber for use in vermicomposting .. Our college has set up a Mushroom cultivation unit and vermicomposting unit mainly for teaching purpose. Mushroom Culture Technology is a SEC paper(**SHBOT/405/SEC-2 and SPBOT/604/SEC-4**) in Botany UG curriculum of Bankura University and vermicomposting process is included in another SEC paper(**Biofertilizer- Course Code: SHBOT/305/SEC-1 and SPBOT/304/SEC-1**) in Botany UG curriculum. Another purpose of vermicomposting unit is to manage biodegradable wastes generated in college campus and from college canteen.

Botany Department in collaboration with IQAC of Sonamukhi College organised a two days workshop on “**Mushroom Cultivation and Vermicomposting**” in our college premises on **10th and 11th March 2022**. Students of Bio science of our college participated in this workshop and learn about technique of vermicomposting and mushroom culture.

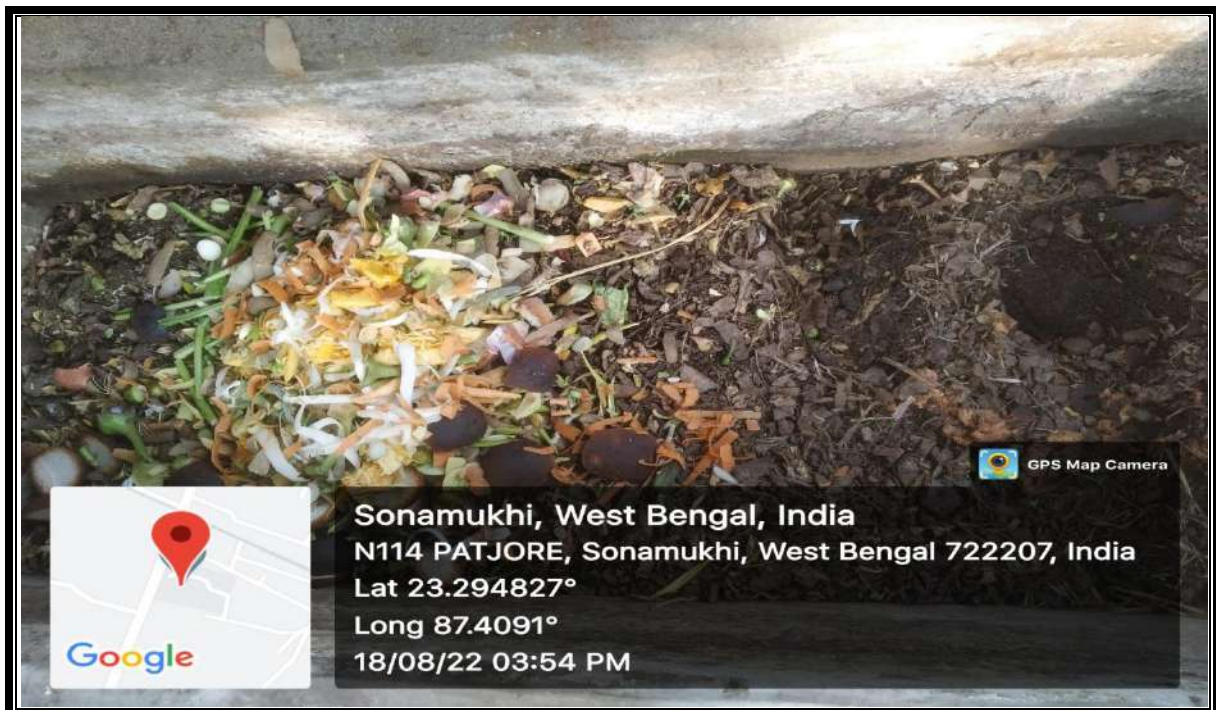


Inaugural Function of Workshop

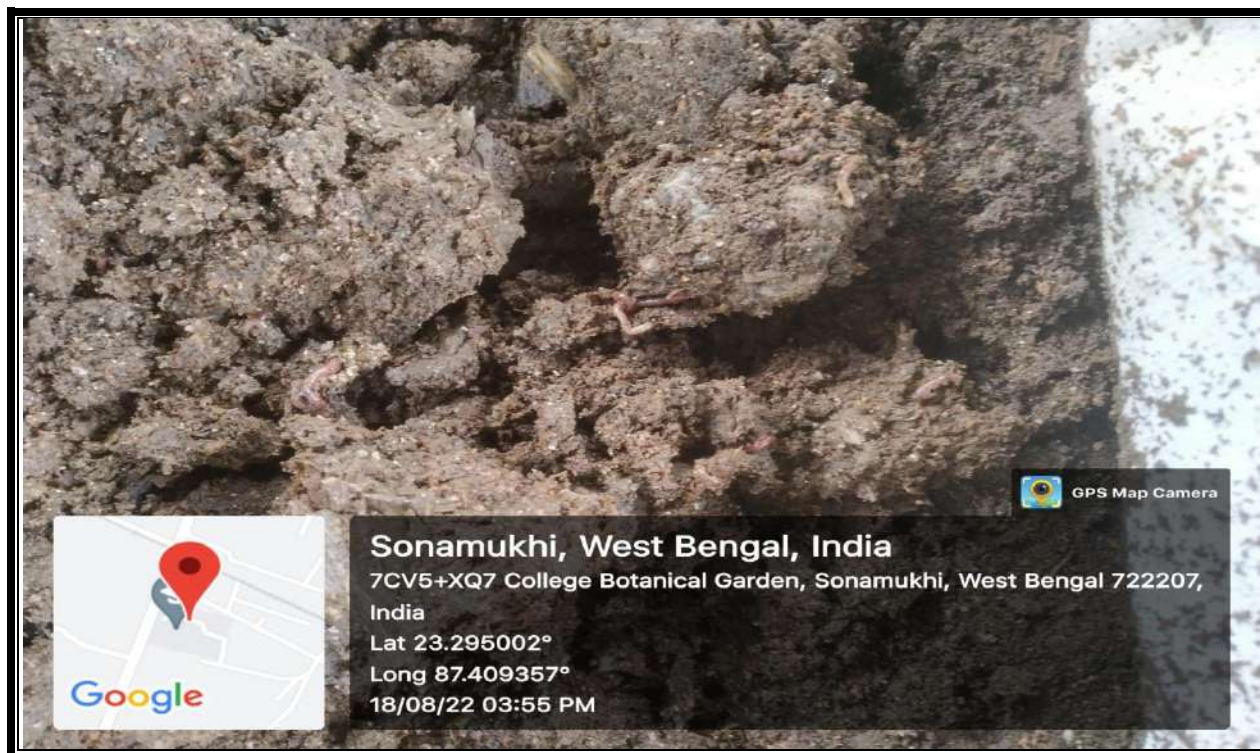




Vermicompost Preparation



Kitchen wastes in Vermicomposting pit



Vermi present in pit

Nondegradable solid wastes are produced through routine activities includes paper, plastics, glass, metals and packaging materials etc. The wastes are collected and segregated properly at each level and source. The care taker of the college has the responsibility of overseeing the timely collection of waste at each floor.

The sweepers collect the solid waste, segregate it and gather it in separate dustbins based on the recyclability and biodegradability. Cleanliness drives organized by also NSS units regularly. The institution discourages plastic use in the campus.

2. E-waste

There are electronic wastes as well. Outdated /damaged electronic wastes which include computers, printers, routers, mouse, UPS. photocopiers etc. are store in separate room and mostly disposed of and or sometimes reparable for reuse.



SONAMUKHI COLLEGE

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

NAAC : B(2.37) 2016 - 1st Cycle

www.sonamukhicollegebankura.com
sonamukhi.col@gmail.com
(91) 93244-275251

AISHE :: C-44762

Criteria 7.1.2, 7.1.3, 7.1.4

Waste management, Energy Source, Water Harvesting, Mushroom Culture technology and Vermicomposting are integrated in UG Curriculum

Programme	SEM	Course Code	Course Title	Remark
ENVS	I	AECC-1	Environmental Studies	Waste management, Energy source, Water management etc. in syllabus
Botany H	IV	SHBOT/405/SEC-2	Mushroom Culture Technology	Full paper
Botany P	VI	SPBOT/604/SEC-4	Mushroom Culture Technology	Full paper
Botany H	III	SHBOT/305/SEC-1	Biofertilizer	Vermicomposting in syllabus
Botany P	III	SPBOT/304/SEC-1	Biofertilizer	Vermicomposting in syllabus
Botany H	V	SHBOT/503/DSE-1	Natural Resource Management	Waste management, Energy source, Water management carbon footprint etc in syllabus
Geography H	IV	SHGEO/403/C-10	Environmental Geography	Waste Management in syllabus
Physics H	III	SHPHS/305/SEC-1	Renewable Energy & Energy Harvesting	Full Paper
Physics P	III	SPPHS/304 SEC-1	Renewable Energy & Energy Harvesting	Full paper
Zoology H	III	SHZOO/304/GE-3	Environment and Public Health	Waste Management in syllabus
Geography H	V	SHGEO/503/DSE-1	Hydrology and Oceanology	Water Harvesting and Management in syllabus

Signature



Signature 7.10.21

Principal
Sonamukhi College

Sonamukhi College
D. Sonamukhi, Dt. Bankura

GREEN AUDIT RESULT

SL No	Environmental Aspect	Compliance		Comment	Remarks
		Yes	No		
1	Energy Conservation	✓		Modern equipment installed and good housekeeping practices followed.	CO ₂ consumption and O ₂ emission should be properly mentioned in respect of total full grown plant, half grown plants, Bushes and green lawn within the college campus area.
2	Water management quality	✓		Amount of waste water insignificant, Water harvesting tank in college campus	Pre-treatment of chemical wastes bio-medical wastes (through autoclaving) should be made before final disposal to the drainage system.
3	Plantation	✓		Greenery and plantation satisfactory	
4	Waste Management	✓		Insignificant generation of solid waste. Composting of biodegradable waste with vermicomposting unit	Different coloured dustbins may be used for disposal of bio-degradable, non-degradable, chemical and bio-medical wastes.
5	Air Quality Management	✓		Negligible amount	
6	Disaster Management	✓		College is equipped with adequate emergency fire extinguishers	
7	Risk Management	✓		Good housekeeping. No accident reported	
8	Environmental Aesthetics	✓		College campus with green cover	
9	Noise	✓		Entry to vehicles with loud sound is strictly prohibited	
10	Drinking water provision	✓		Deep tube wel, aqua guard machines are installed for drinking water	
11	Sanitary Waste Management	✓		Insignificant quantity generated, which is disposed of through proper sanitation	

Audited by

Principal

(Dr. Samir Kumar Mukherjee)

Bankura Sammilani College

Bankura

PRINCIPAL
Bankura Sammilani College
Kenduadihi, Bankura





Bankura Sammilani College

P.O. - KENDUADIHI • DIST - BANKURA - 722102

ESTD. - 1948

(NAAC ACCREDITED B+)

Ref. No.

Dated the.

From : **Principal**

This is to certify that Sonamukhi College performed different activities to maintain the green environment within college campus in 2021-22 academic session. Different committees and units such as NSS, NCC, Antiragging cell etc. Show their good gesture in this field. Different departments such as Botany, Zoology and Geography also were actively involved in this field and helped to make the environment green within the campus.

After verification of all documents regarding the green audit in Sonamukhi College GREEN AUDIT RESULTS are shown in the tabular form

SL No	Environmental Aspect	Compliance		Comment	Remarks
		Yes	No		
1	Energy Conservation	✓		Modern equipment installed and good housekeeping practices followed.	CO ₂ consumption and O ₂ emission should be properly mentioned in respect of total full grown plant, half grown plants, Bushes and green lawn within the college campus area.
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7	Risk Management	✓	Good housekeeping. No accident reported
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11	Sanitary Waste Management	✓	Insignificant quantity generated, which is disposed of through proper sanitation

Audited by

SK Mukherjee

Principal

22/4/22

(Dr. Samir Kumar Mukherjee)

Bankura Sammilani College

Bankura



PRINCIPAL
Bankura Sammilani College
Kenduadihi, Bankura