Since 1965

தந்தை பெரியார் அரசு கலை மற்றும் அறிவியல் கல்லூரி (த)

THANTHAI PERIYAR GOVERNMENT ARTS AND SCIENCE COLLEGE(A)

(Nationally Re-Accredited with 'A' Grade by NAAC at 3rd Cycle)
(Affiliated to Bharathidasan University,Tiruchirappalli - 24)

No.36/2, RACE COURSE ROAD, KHAJAMALAI, TIRUCHIRAPPALLI - 620 023
TAMILNADU, INDIA.

Tel.No. : 0431 - 2420079 Website: www.thanthaiperiyargasc.ac.in E-mail : periyarevrcollege@yahoo.com

GREEN CAMPUS INITIATIVES

TPGASC has a Green Campus which is healthy and environmental friendly. This institution provides education to promote sustainable and eco-friendly practices in the campus and make the campus as ever green. Environmental studies have been incorporated into the curriculum of all the undergraduate courses as per the guidelines set by the University Grant Commission and the Supreme Court's National Green Tribunal. This mandatory course encompasses both theoretical and practical components. The core module covers various subjects such as pollution, eco systems, environmental social issues etc.

In addition to the core module the students are also assigned specific course work related to Environmental Studies based on their respective disciplines. For instance courses like Ecology, Phytogeography and Conservation Biology-U.G, Ecology, Phytogeography –P.G (Botany).Green chemistry, Environmental Pollution Analysis Techniques (Chemistry), and Environmental Economics (Economics) are offered to the students

Syllabus on Environmental Studies:

CORE XIII

Credits: 5; Instruction Hours: 6

ENVIRONMENTAL ECONOMICS

COURSE OBJECTIVES: The aim of this course is

1. *To help the students to understand the relationship between the environment and Economics.*
2. *To enlighten them on the economic value of the environment.*
3. *To teach them to conduct conservation of environmental resources through Economic Principles.*
4. *To help the students to understand the basic concepts and theories of environmental Economics.*
5. *To enlighten the students on Environmental Policies and Laws.*

COURSE OUTCOME: On completion of the course, the students will be able to

1. *Identify the environmental problems.*
2. *Apply environmental protective practices in day to day life.*
3. *Practice sustainable use of resources.*
4. *Appreciate key concepts of the environment which in turn will lead to designing better environmental policies.*
5. *Explain and Appraise the Environmental Policies of the Government.*

UNIT I: BASIC CONCEPTS OF ENVIRONMENTAL ECONOMICS

Nature and Scope of Environmental Economics - Basic Concepts of Environmental Economics - Nexus between Economics and Environment - Environment and Sustainable development.

UNIT II: THEORIES OF ENVIRONMENTAL ECONOMICS

Theory of Material Balance - Efficiency in a Private Market Economy - Spill Over Effects - Externalities - Efficiency and Social Welfare - Internalization of Externalities - Solutions to the Externalities - Environmental Quality as a Public Good.

UNIT III: ECONOMICS OF ENVIRONMENT

Risks of a Deteriorating Environment - Natural Resources and their Conservation - Population and Environmental Quality - Economic Growth and Environmental Quality - Retarding Impacts - Green House Effect - Acid rain - Climate change - Green accounting and Auditing.

UNIT IV: ECONOMICS OF POLLUTION AND CONTROL

Meaning of Pollution - Types of Pollution - Impacts on Human Health, Animals and Vegetation - Recycling of Wastes - Pollution and Resources Use - Pollution Control - Cost-Benefit Analysis - Direct and Indirect Methods of Pollution Control.

UNIT V: POLICY INITIATIVES AND ENVIRONMENTAL LAWS

Latest Environmental Policy of India - Distributive Effects of Environmental Policy - International Environmental Policies - Carbon Tax - Role of India in COP62 Summit.

TEXT BOOK:

1. Sankaran, S. ***Environmental Economics***. Chennai: Margham Publications, 3rd edition, 2012.

REFERENCE BOOKS:

1. Karpagam, M. ***Environmental Economics***. New Delhi: Sterling Publishers Private Limited, 1st edition, 1991.
2. Varadarajan, S. and S. Elangovan. ***Environmental Economics***. Patna: Speed Publication, 1st edition, 1992.

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SEMESTER VI

18B06C13

CORE PAPER– XIII

ECOLOGY, PHYTOGEOGRAPHY AND CONSERVATION BIOLOGY

Hours: 5
Credits: 4
Code:

Objectives: The world is in a period of unprecedented environmental change. Learning how to live sustainably on this planet is going to require that humanity learns how to utilize and manage our natural resources more effectively and this paper will deal this.

Unit - I

Ecology – Definition; Plant Ecology and its divisions. Approaches to the study of Ecology – Autecology and Synecology. Applications of Plant Ecology. Factors influencing plant environment – climatic, edaphic and biotic factors.

Unit - II

Ecosystem concept – components of ecosystem- biotic and abiotic – producers, consumers and decomposers. Ecological pyramids, Food chain and Food web. Pond ecosystem. Grassland ecosystem. Units of vegetation – formation, association, consociation and society. Development of vegetation – migration, ecesis and colonization. Plant succession – Hydrosere and Xerosere.

Unit - III

Pollution types and its control –air pollution, water pollution, soil pollution, noise pollution, thermal pollution and radioactive pollution.

Unit - IV

Phytogeography – Basic principles – Theories of Continental drift, continuous and discontinuous distribution. Endemism – age and area hypothesis – Altitudinal and Latitudinal distribution of vegetation. Vegetation of India. Characteristic features of different types of forest and forest conservation.

Unit -V

Categories of Flora as per IUCN - Conservation of Genetic Resources – Red Data Book – Need for conservation. *in situ* and *ex situ* Conservation. Biological hot spots. Reserve Forests and Social Forestry. Sacred Groves. Buffer zones and role of tribes in conservation.

Text Books

1. Shukla, R. S. and Chandel, P. S. 2015. Textbook of Plant Ecology. S. Chand Publications

SEMESTER - I

CORE PAPER – III

ECOLOGY AND PHYTOGEOGRAPHY

18PBO1C3

Hours: 6
Credits: 4
Code:

Objectives: The world is in a period of unprecedented environmental change. Learning how to live sustainably on this planet is going to require that humanity learns how to utilize and manage our natural resources more effectively and this paper will deal this.

Unit – I

History and Scope of Ecology. Concept of Ecosystem, its structure and function, Ecological factors; Edaphic, Climatic, Topographic, Biotic and Abiotic factors. Water: Importance of water in plant distribution, Adaptation of plants, Energetics: Productivity, Food chains, Food webs and Tropic levels and energy flow, Ecological pyramids.

Unit – II

Synecology: Methods and purpose of studying plant communities, quadrat, transects frequency, abundance, density cover, ecotone, community, species diversity and dominance, community dynamics. Autecology: Ecological life cycle – ecotypic differentiation study of populations.

Unit – III

Pollution: Sources, nature and impact of different kinds of pollution (air, water, soil, thermal, radioactive and noise pollution). Cumulative effect of pollution on Global environment – Acid rains – green house effect. Depletion of Ozone layer and its causes and consequences. Biodegradation of environmental pollutants (pesticide waste, toxic heavy metals and petroleum products). Treatment of waste water (aerobic and anaerobic), water recycling, Methods of pollution control – treatment of ground water.

Unit – IV

Phytogeography – Basic principles of Phytogeography – Continental drift, continuous and discontinuous distribution and theories. Endemism – age and area hypothesis – Altitudinal and Latitudinal distribution of vegetation . Vegetation of India. Characteristic features of different types of forest and forest conservation.

MAJOR GREEN CAMPUS INITIATIVES IN THE CAMPUS

1. **Restricted entry of automobiles**

Conventional rainwater harvesting pits have been established in each block in the campus to collect the roof top runoff water. This water is directed into the rainwater harvesting pits which in turn seeps and enhances the ground water level. The rainwater thus harvested helps during the dry seasons.

Parking facilities are created for two wheelers and four wheelers separately for faculties and students inside the campus. Vehicle parking sign boards are kept near departments. All staff members and students are instructed to park their vehicles in the allotted areas

2. **Use of Bicycles / Battery Powered Vehicles**

Bicycle is a common mode of transport within our campus. As per the initiative taken by the Tamilnadu Government to issue free of cost bicycle to the female students which encourages them to use the bicycles as their mode of transport to the college.

3. Pedestrian Friendly pathways

In TPGASC all the blocks are well connected by accessible roads lined by full grown trees. Newly constructed buildings have Pedestrian friendly path way adjoining the building. The path ways for every department is broad and shady.

4. **Ban on use of plastics:** Hundred percent plastic free campus is not possible in our campus. However we instruct our students not to use non degradable plastics. We have the practice of using steel plates and glass tumblers in the canteen.

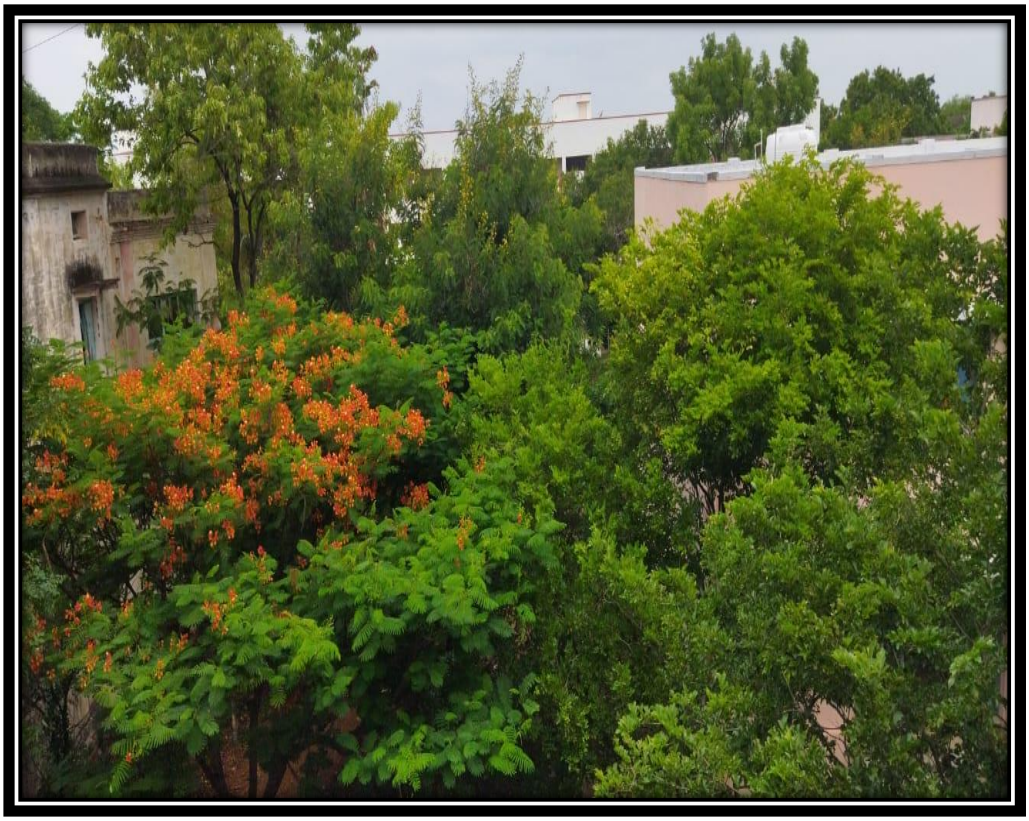
5. Landscaping with trees and plants

The Institute takes up various green initiatives to create a sustainable environment. The students and staff members perform different activities like ***Swatch Bharat Abhiyan***, Environment Day

celebration, Tree plantation day to create the campus environment friendly. The campus is kept neat and clean. The campus is well decorated with trees and plants. Our college staff, Alumnae and students has taken effort to revive the banyan tree whose life time of more than 75 years http://timesofindia.indiatimes.com/articleshow/67984060.cms?utm_source=contentofinterest&utm_medium=text&utm_campaign=cppst

The above is the website link

TPGASC has varieties of trees and plants. Palm trees, Neem trees, Tamarind trees, Bamboo, and *Pongam* trees, Indian cork trees, Flame of the forest etc., which provides oxygen and absorbs CO2 and create green environment inside the campus. Saplings have been planted in the path ways to the classroom. The campus having an area of 52.62 acres is naturally and beautifully landscaped. More than 100 different types of trees and several herbal plants are the proof of our green campus.



GREEN INITIATIVE TAKEN BY THE COLLEGE

1. **Digitalized paperless office**

   The administration is getting digitalized in all department of our college. Enterprise Resource Planning, (ERP) software is used for maintaining the students and faculty details. The library and college office become digitalized to avoid paper usage. The use of computers help our college offices to reduce files and papers Green Campus

2. **Green campus**

   More than 2000 plants have planted with the help of staff and students Name of the plant, trees, species has also been written on the trees to know about the details of trees ,plants and sapling Palm seeds have also been planted in our college and the campus of bharathidasan university. TPGASC staff and students take effort to maintain green initiative by planting saplings, palm trees.

GREEN INITIATIVE TAKEN BY THE COLLEGE

3. **Green Initiatives**

   For pure drinking water, Reverse Osmosis (RO) water is installed successfully. LED bulbs are used for Energy Efficient Lighting System. Roof top solar panels are commissioned. Sewage water is channelized and maintenance is taken care by PWD department and the waste water is used for gardening. Rain water harvesting system is installed in every building in order to harness natural rain water.

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Reason: NAAC
Location: TAMILNADU, INDIA
Date: 05-Aug-2023 13:48:33

Palms Seeds

4. Green campus

More than 2000 plants have planted with the help of staff and students Name of the plant, trees, species has also been written on the trees to know about the details of trees ,plants and sapling Palm seeds have also been planted in our college and the campus of bharathidasan university. TPGASC staff and students take effort to maintain green initiative by planting saplings, palm trees.