

Green campus Award application

VI. Courses/projects/seminars/workshops on environmental concerns in the campus

1. Courses related to Environmental Sciences

Course Code	Course Title	Credit		Trimester	Division
		L	P		
AC 511	Agrochemical Decontamination and Disposal	2	1	I	Agriculture Chemicals
AC 604	Agrochemical Dynamics And Environmental Implications	3	1	III	Agriculture Chemicals
AP 610	Physics of Soil and Water Erosion and Their Control	2	1	II	Agriculture Physics
AP 507	Physics of Radiation Interactions in Agriculture	3	0	III	Agriculture Physics
AP 508	Introduction to Nanotechnology	2	0	III	Agriculture Physics
AP 511/ AG 511	Crop Ecology and Agrometeorology	3	1	III	Agriculture Physics
AG 510/ SSAC 510/ WST 510	Management of Problem Soils and Waters	3	1	I	Agronomy
AG 504/ WST 504	Principles and Practices of Water Management	3	1	II	Agronomy
AG 604	Principles and Practices of Organic Farming	2	1	II	Agronomy
AG 502/ SSAC 502/ AP 502	Soil Fertility and Nutrient Management	3	1	III	Agronomy
ES 500	Introduction to Environmental Sciences	3	0	I	Environmental Sciences
ES 501	Analysis of Agroecosystems	3	0	I	Environmental Sciences
ES 502/ WST 502	Environmental Pollution	3	0	I	Environmental Sciences
ES 506	Instrumental Methods of Environmental Analysis	2	1	I	Environmental Sciences
ES 510/ AE 510	Soil and Water Conservation Engineering	3	0	I	Environmental Sciences
ES 601	Biodiversity	2	0	I	Environmental Sciences
ES 612	Crop Geography and Ecology	3	0	I	Environmental Sciences
ES 691	Seminar	1	0	I	Environmental Sciences
ES 503/ PP 503	Global Climate Change and Agriculture	2	1	II	Environmental Sciences
ES 505/MB 505	Microbial Ecology	3	1	II	Environmental Sciences
ES 602	Environmental Impact Assessment	3	0	II	Environmental Sciences
ES 603	Waste Management	2	1	II	Environmental Sciences
ES 604/ SSAC 604	Soil Organic Matter	3	0	II	Environmental Sciences
ES 605	Agroforestry	2	0	II	Environmental Sciences
ES 606/ SSAC 606	Soil and Water Pollution	2	1	II	Environmental Sciences

ES 607	Advanced Environmental Monitoring Techniques	2	2	II	Environmental Sciences
ES 691	Seminar	1	0	II	Environmental Sciences
ES 504	Environmental Chemistry	2	2	III	Environmental Sciences
ES 507	Environmental Microbiology	2	1	III	Environmental Sciences
ES 508	Persistent Organic Pollutants	2	0	III	Environmental Sciences
ES 509	Biofuel and Environmental Protection	2	0	III	Environmental Sciences
ES 608/ AE 608	Renewable Energy Conversion System	2	1	III	Environmental Sciences
ES 609	Simulation of Ecological Processes	2	1	III	Environmental Sciences
ES 610	Air Pollution	2	1	III	Environmental Sciences
ES 611	Introduction to Environment Law and Policy	2	0	III	Environmental Sciences
ES 691	Seminar	1	0	III	Environmental Sciences
MB 606	Applications of Microorganisms in Agriculture	1	2	III	Microbiology
PGR 500	Biodiversity and Plant Genetic Resources	2	0	I	Plant Genetic Resources
PGR 509	Plant Biosecurity	2	0	I	Plant Genetic Resources
PGR 602	In Vitro Conservation and Cryopreservation	2	2	II	Plant Genetic Resources
PGR 603	In Situ Conservation of Plant Biodiversity	2	1	II	Plant Genetic Resources
PGR 606	Ecology and Biodiversity	2	1	III	Plant Genetic Resources
PL PATH 512	Ecology of Soil Borne Plant Pathogens	2	1	III	Plant Pathology
PL PATH 606	Plant Biosecurity and Bio Safety	2	0	III	Plant Pathology
AGR 004	Soils and Environment	2	1	I	Soil Science and Agricultural Chemistry
SSAC 605	Soil Resource Management	3	0	I	Soil Science and Agricultural Chemistry
SSAC 602	Soil Chemical Environment and Plant Growth	3	2	II	Soil Science and Agricultural Chemistry
SSAC 507	Soil Testing, Water Quality and Fertilizer Recommendations	3	2	III	Soil Science and Agricultural Chemistry
SSAC 611/ AP 611	Soil Physical Environment and Plant Growth	3	1	III	Soil Science and Agricultural Chemistry
WST 503	Soil- Water-Plant- Environment System	2	1	I	Water Science and Technology
WST 505	Soil & Water Conservation and Sediment Transport	3	0	I	Water Science and Technology
WST 509	Economic, Social and Institutional Issues in Water Resource Management	3	0	I	Water Science and Technology
WST 500	Water Resource Management - I	3	0	II	Water Science and Technology
WST 511	Soil and Water Quality and Irrigation Management	2	1	II	Water Science and Technology
WST 608	Diagnostic Analysis and Performance Evaluation of Irrigation Projects	1	3	II	Water Science and Technology
WST 600	Water Resource Management-Ii	2	1	III	Water Science and Technology
WST 607	Environmental Impact Assessment of Irrigation Projects	3	0	III	Water Science and Technology
WST 615	Water Management Technologies in Rainfed Agriculture	2	1	III	Water Science and Technology

2. Projects

1. Ongoing institute project

Assessment and mitigation of greenhouse gas emission and air pollution in agriculture under current and future climatic condition (2014-2019).

2. Externally funded research projects

S. No.	Projects	PI	F. Agency	Amount	Duration
1.	National Innovations in Climate Resilient Agriculture (NICRA)	S.D. Singh	ICAR	3688.8 Lakhs	2011-17
2	Development of economically viable conversion technology for ethanol production from rice straw	Renu Singh	DST	24 Lakhs	2012-15
2	Evaluation of Environmental Services in Conventional & non-agro-ecosystems	D.K. Sharma,	DST	27.6 Lakhs	2013-16
3.	Decision Support System for enhancing productivity of grapes under Moisture & Temp. Stress Conditions	S. N. Kumar	ICAR	38.22 Lakhs	2012-16
4.	Assessing water carbon and nitrogen footprints of major crop in some crop of the IGP	B. Chakrabarti	DST	24.95 Lakhs	2014-17
5.	Dynamics of engineered nano-particles (ENPs) in soil and phytotoxicity assessment on food crops	Manoj Shrivastava	BARC	29.38 Lakhs	2015-18
6.	Understanding and Quantification of Radionuclide Transfer in Terrestrial Ecosystem	Bhupinder Singh	BARC	39.86 Lakhs	2014-18
7.	Impacts of primary and secondary pollutants on crops around NTPC-Auraiya, UP.	S. N. Kumar	NTPC	25 Lakhs	2016-18
8.	Impacts of primary and secondary pollutants on crops around NTPC-Anta, Rajasthan	Shiv Prasad	NTPC	28 Lakhs	2016-18
9.	Impacts of primary and secondary pollutants on crops around NTPC-Faridabad, Haryana	S.A. Khan	NTPC	28 Lakhs	2016-18
10.	Emission of Greenhouse Gases during Composting of Municipal Solid Waste	N. Jain	IL&FS	9.7 Lakhs	2015-16
11.	Reducing Loss of Nitrogen and Emission of Greenhouse Gases with Urea Stabilizer in Maize and Wheat	A. Bhatia	BASF	12.9 lakhs	2015-16
12.	Quantification of agroecosystem services from organic and conservation farming systems	D K Sharma	ICAR	15.26 Lakhs	2016-17
13	Greenhouse gas emission inventory from Indian agriculture	N. Jain	MOEFCC	11.02 Lakhs	2016-17
14	Inventory of greenhouse gas emission from Indian agriculture	A. Bhatia	MOEFCC	11.02 Lakhs	2016-17
15.	Inventory of methane and nitrous oxide emission from agricultural soils	A. Bhatia	MOEFCC	28.54 Lakhs	2016-18
16.	Reducing uncertainties in nitrous oxides emissions from rice cultivation	A. Bhatia	MOEFCC	60 Lakhs	2020-22
17.	National Mission for Sustaining the Himalayan Ecosystem: Agriculture	S. N. Kumar	DST	10 crores	2021-26

18.	Emissions of carbon dioxide from application of urea to agricultural soils	Niveta Jain	MoEFCC	42 lakhs	2020-22
19.					
20.					

3. Seminars/workshops on environmental concerns in the campus

- ✓ The Division of Environment Science, IARI, New Delhi celebrated World Environment Day 2020 on 5th June. On this occasion, a vision talk was delivered by Eminent Environmentalist Dr. Anil Prakash Joshi, Padma Bhushan and Padma Shri, on "Ecology is the stable Economy".
- ✓ The Division of Environment Science, IARI, New Delhi organized an online Impromptu speech competition in Hindi/English on "Environmental Challenges in Agriculture" on Saturday, June 5th, 2021 at 3.00 - 4.30 PM on the occasion of World Environment Day 2021.
- ✓ The Division of Environment Science, IARI, New Delhi organized a lecture during the Hindi Chetna Mas on the topic " Ozone Layer Depletion: Present Situation & Future Challenges" on 16th Sept. 2020 at 2:30-4 PM. This lecture will be delivered by Dr. Madhoolika Agrawal, *Professor, Dept. of Botany, BHU, Varanasi, UP.*
- ✓ The Division of Environment Science, IARI, New Delhi organized a lecture during the Hindi Chetna Mas on the topic "Value Addition through Strategic Management of Plastic, Electronic and Agri-wastes" on 25th Sept. 2021 at 3-4 PM. This lecture will be delivered by Prof. Kamal Kishore Pant, *Dean (faculty) and Professor, Dept. of Chemical Engineering, IIT, New Delhi.*
- ✓ A five days online training program conducted in the Division of Environment Science, IARI, New Delhi on "**Appropriate sampling techniques including sample preparation and preservation for soil, water, plant and air samples for various analyses**" (02-07 August, 2021) for the Technical Personnel of ICAR sponsored by HRM, ICAR.
- ✓ In the Division of Environment Science, IARI, New Delhi, a group of students and faculty (Study Group) for the interactions and presentations of current environmental issues was formed in 2019.

C. waste management methods

03 Farm (includes animal) waste: compost pit

4 compost pits of capacity approx. 600 L/15 days semisolids

Biogas plant

1 Functional biogas plant of 2m³ capacity floating drum type

Organic waste utilizes 20 kg/day (admixture of cattle dung and biomass)

Any other (innovative)

Improvisation of floating drum biogas plant by introducing central guiding pre-mixing tank with manual blade for agitating the substrate for farmers' friendly use.

d. On campus waste treatment

S. No.	Types	Quantity in kgs	
		2019-20	2020-21
01	Dry waste	1500 kg	1825 kg
02	Kitchen waste		

Green Campus Award

Registration Form

IV. Water Conservation practices: Water harvesting structures (WHS):

S.No.	Types	Number	Area	Capacity
01	Roof top (Greenhouse)	15	15,000 sq meter	10,000 cubic meter
02	Farm pond (1 RCC, 1 Geo Membrane Lined and 1 Un lined)	3	6000 sq meter	20,000 cubic meter
03	Percolation tank			
04	Check dam			
05	Innovation			
06	Any others (Water harvesting drains and pit)	1 complete Main, Laterals and pit	250 sq meter	125 cubic meter

Photographs of Water Harvesting Infrastructures at CPCT:



Fig 1: RCC Farm Pond/Reservoir Capacity 40,000 cubic meter



Fig 2: Geomembrane Lined Pond/Reservoir Capacity 40,000 Cubic Meter



Fig 3: Greenhouse Roof Top rain Water Harvesting System with Drains