COURSE OFFERED UNDER CBCS SCHEME

Title: Bird Science and bird watching

Duration: 15 hours	(No. of Teaching & Practical hrs.)

Eligibility: Any Graduate

Intake : Min: (10) Max.: (30)

Course Fee: 3000/-

Number of Credits: 01

Course Contents:

- Introduction to the birds
- Evolution and adaptations of birds
- Place and role of birds in the environment
- Bird Classification
- Birds as a bio-indicators
- Bird Watching equipments
- Bird watching

Examination : (Method & Details)

Method: Theory - 50 Marks,Practical Examination- 50 MarksPassing Rule: Separate for theory and Practical with at least 50 % marks.Structure for Theory:

•	06 Short answer questions each for 5 marks	=30
•	10 Multiple Choice questions each for 2 marks	=20
	Total	=50 marks

Structure for Practical Examination:

Project	=50 M
Theory + Practical	=100 marks

Note: All questions in Theory and Practical will be compulsory.

Type: Add-On

Course Coordinator: Mrs. A. S. Jadhav

- 1. Ali Salim (2003) "The Book of Indian Birds" Oxford University Press,
- 2. Grimmett R, C. Inskipp & T. Inskipp (1999) "Birds of the Indian Subcontinent"
- 3. Grimmett R, C. Inskipp & T. Inskipp (2005) "Birds of South India"
- 4. Pande S, S Tambe, C Francis M & N Sant "Birds of Western Ghats, Kokan and Malabar"

COURSE OFFERED UNDER CBCS SCHEME

Title: Environmental Impact Assessment

Duration : 15 hours		(No. of Teaching & Practical hrs.)
Eligibility: Any Science Graduate		
Intake :	Min: (10)	Max.: (30)

Course Fee: 3000/-

Number of Credits: 01

Course Contents:

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- UNIT-1 (4)Objectives of EIA; projects and its environmental impacts, Environmental impact statement; Projects screening and scoping; Environmental baseline study.
- UNIT-2 Impact Assessment Procedure: Applications of Matrices; Networks and

Overlay maps; Environmental evaluation system; Impact identification; Impact prediction; Evaluation and mitigation; Monitoring and Environmental auditing.

Unit -3 •

(4)

(3)

(4)

Regional and strategic EIA, Environmental management plan; Cost benefit analysis and its dimensions; Public participation in environmental decision making, EIA report and its contents.

UNIT-4 •

> Case Studies: River valley projects; opencast mining projects; urbanization and high way projects.

Examination : (Method & Details)

Method: Theory - 50 Marks, Practical Examination- 50 Marks Passing Rule: Separate for theory and Practical with at least 50 % marks. Structure for Theory:

- 06 Short answer questions each for 5 marks =30
- 10 Multiple Choice questions each for 2 marks =20

Total =50 marks

Structure for Practical Examination:

Case study	=50 marks
Theory + Practical	=100 marks

Note: All questions in Theory and Practical will be compulsory.

Type: Add-On

Course Coordinator: Mrs. A. S. Jadhav

- 1. Environmental Impact Assessment, Canter, L.W., 1977, McGraw Hills New York.
- 2. Environmental Impact Assessment, Peter Wathern, Unwin Hywin, London.
- 3. Environmental Impact Assessment, P. R. Triwedi, APH Publishing Corporation, New Delhi.
- 4. A Handbook of EIA, V.S. Kulkarni, S.N. Kaul and R. K. Trivedi, Karad.

COURSE OFFERED UNDER CBCS SCHEME

	Title: Environn	nental Monitoring		
	Duration: 30 h	nours	(No. of Teaching & Practical hrs.)	
	Eligibility: Any	Science Graduat	e	
	Intake :	Min: (10)	Max.: (30)	
	Course Fee: 50	00/-		
	Number of Cro	edits: 02		
	Course Conten	nts:		
1.	Introduction	:		
	Pollutants, Sour	cces of pollution, l	Basic concepts of environmental monitoring,	
	environmental s	standards: Internat	tional and National, Environmental Legislation	n (2)
2.	Water and was	stewater monitor	ing:	(5)
	Sampling: Sar	npling Procedures	s, preservation and pretreatment of samples	
	Physical paran	neters: Turbidity,	Temperature, Light Transperancy, Colour, etc.	с.
	Chemical Para	meters: Electrica	l Conductivity, Acidity, alkalinity, DO, COD	, BOD,
	TOC, Nitrates,	Phosphates, Sulph	nates, Chlorides, Heavy Metals, etc.	
	Biological para	ameters: SPC, M	PN, Phytoplankton, Zooplankton, etc.	
3.	Air and exhaus	st gas monitoring	: common terms, sampling methods	(5)
	Particles, nit	rogen oxides and	Sulphur dioxide	
4.	Soil monitoring	g: sampling, prepa	aration of samples; pollutants measurement	
	pH, Conductivi	ty, Organic Carbo	on, Organic Matter, Nitrogen, Phosphorus, Po	tassium,
	Water holding of	capacity, Lime and	d Gypum requirement	(3)
5.	Noise Monitori	ng : Principle and	working of Noise Level Meter.	
6.	Instrumentation	: pH meter, Conc	luctivitimeter, UV Spectrophotometer, TKN, I	on
	analyser, HVS,	RSPM 2.5, AAS, S	Stack Monitoring, etc.	
	Practicals : Ba	ased on air, water	, soil and Noise monitoring	(15)
	Examination	n : (Method & De	tails)	
	Method: The	ory - 50 Marks, P	ractical Examination- 50 Marks	
	Passing Rule	: Separate for The	eory and Practical with at least 50 % marks.	

Structure for Theory:

- 06 Short answer questions each for 5 marks =30
- 10 Multiple Choice questions each for 2 marks =20

Total =50 marks

=100 marks

Structure for Practical Examination:

Two major practical's	= 30 M	
One Minor Practical	= 10 M	
Journal + Viva	= 10 M	
	Total = 50 marks	

Theory + Practical

Note: All questions in Theory and Practical will be compulsory.

Type: Add-On

Course Coordinator: Mrs. A. S. Jadhav

- 1. Waste water engineering, Met Calf and Eddy, INC, Tata Mc Graw Hill
- 2. Indian Standard For Drinking Water, BSI, New Delhi.
- 3. Environmental Pollution Control, C.S.Rao, Wiley Eastern Ltd., 1993
- 4. Air Pollution Control and Engineering, De Nevers, Mc Graw Hills, 1993 10
- 5. Fundamentals of Air Pollution, Samuel, J.W., 1971, Addison Wesley Publishing
- Fundamentals of Environmental Pollution, Krishnan Khannan, S. Chand and Company Ltd., 1994.
- 7. Noise Pollution, Vandana Pandey, Meerut Publishers, 1995. 11
- 1. Environmental Pollution Control, C.S. Rao, Wiley Eastern Ltd., 1993
- 2. Air Pollution Control and Engineering, De Nevers, Mc Graw Hills, 1993
- 3. Fundamentals of Environmental Pollution, Krishnan Khannan, S.Chand and Company Ltd., 1994. 12
- 4. Environmental Chemistry, A.K.De., New Age Intl. pub Co, New Delhi, 1990.
- 5. Environmental Pollution Anlysis- Khopkar 13

COURSE OFFERED UNDER CBCS SCHEME

Title: Vermi composting

Duration: 15 hours (No. of Teaching & Practical hrs.)

Eligibility: Any Science Graduate

Intake : Min: (10) Max.: (30)

Course Fee: 3000/-

Number of Credits: 01

Course Contents:

- Introduction to Vermicomposting
- Requirements for Vermicomposting
- Earthworms
- Vermicomposting Methods:
 - 1. Vermicomposting of wastes in field pits.
 - 2. Vermicomposting of wastes on ground heaps
- Worms, Food , bedding, optimization of compost ecosystem
- Setting up of vermicomposting system and harvesting
- Trouble shooting

Examination :(Method & Details)

Method: Theory - 50 Marks,	Practical Examination- 50 Marks
Passing Rule: Separate for theory and	Practical with at least 50 % marks.
Structure for Theory:	

•	06 Short answer questions each for 5 marks	=30	
•	10 Multiple Choice questions each for 2 marks	=20	

Total =50 marks

Structure for Practical Examination:

05 questions each for 10 marks	=50 marks
Theory + Practical	=100 marks

Note: All questions in Theory and Practical will be compulsory.

Type: Add-On

Course Coordinator: Mrs. A. S. Jadhav

- Bhatt J.V. & S.R. Khambata (1959) "Role of Earthworms in Agriculture" Indian Council of Agricultural Research, New Delhi.
- Dash, M.C., B.K.Senapati, P.C. Mishra (1980) "Worms and Vermicomposting" Proceedings of the National Seminar on Organic Waste Utilization and Vermicomposting Dec. 5-8, 1984, (Part B), School of Life Sciences, Sambalpur University, Jyoti Vihar, Orissa.
- 3. Rahudakar V.B. (2004). Gandul khatashivay Naisargeek Paryay, Atul Book Agency, Pune.
- 4. Satchel, J.E. (1983) "Earthworm Ecology" Chapman Hall, London.