

## Central University of South Bihar

### Minutes of Centre for Environmental Sciences Board of Studies

A meeting of Board of Studies of Centre for Environmental Sciences was held on 26<sup>th</sup> May 2017 (Friday) in the Conference hall, Central University of South Bihar, Patna to moderate the existing Course Structure and Contents of M.Sc. and Doctoral programme of Centre for Environmental Sciences.

The following members were present:

- |    |   |                    |
|----|---|--------------------|
| 1. | Dr. Pradhan Parth Sarthi<br>Head, Centre for Environmental Sciences                         | -- Convener        |
| 2. | Prof. R. K. Sinha<br>Professor, Department of Zoology, Patna University, Patna              | -- External Member |
| 3. | Prof. R. K. Mall<br>Professor, Institute of Environmental and Sustainable,<br>BHU, Varanasi | -- External Member |
| 4. | Dr. Ajay Kumar Singh<br>Associate Professor, Bioinformatics                                 | -- Cognate Member  |
| 5. | Dr. Nitish Kumar<br>Assistant Professor, Biotechnology                                      | -- Cognate Member  |
| 6. | Dr. Ram Kumar<br>Associate Professor, Centre for Environmental Sciences                     | -- Member          |
| 7. | Dr. Rajesh Kumar Ranjan<br>Assistant Professor, Centre for Environmental Sciences           | -- Member          |
| 8. | Dr. Prashant<br>Assistant Professor, Centre for Environmental Sciences                      | -- Member          |
| 9. | Dr. N. L. Devi<br>Assistant Professor, Centre for Environmental Sciences                    | -- Member          |

Dr. Pradhan Parth Sarthi, Head, Centre for Environmental Sciences welcomed and introduced all members of the BoS committee.

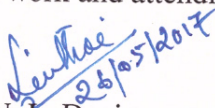
Following points were discussed:-

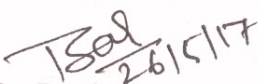
- 1) The existing and proposed syllabi were placed before the BoS members for their suggestions. Members of BoS thoroughly reviewed the existing and the proposed syllabi and agreed on the proposed overall structure of the M. Sc. and Ph. D Environmental Science syllabus and also provided inputs wherever needed.
- 2) Some of the elective courses of 2 credits are changed to 3 credits. There would not be any change in overall credits.
- 3) Course title and contents of ESC 503(Introduction to Environmental Sciences) is changed with consent of BoS members.

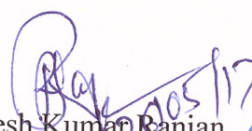
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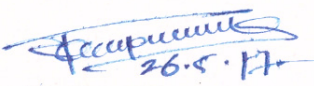
- 4) The proposed 12 credits for Ph. D course work is discussed among BoS members. The title of courses included in Ph.D. programme course work are in line with the suggestion made in the meeting of Head (dated 31.03.2017) with the Hon'ble Vice Chancellor.
- 5) All the suggested changes proposed by the faculty members were reviewed, modified and incorporated in the proposed syllabus.
- 6) Members of BoS went through course contents of the proposed course and suggested changes in the course entitled "Fundamentals of Research Methodology". The expert member gave the input to incorporate the topic 'Ethics in Research' as a separate Unit in the above mentioned course. BoS members incorporated the above suggestion accordingly. The BoS agreed to incorporate the syllabus of "Fundamentals of Research Methodology" of 4 credit course if the University provide the syllabus in place of the proposed 4 credit course approved by the BoS for the same.
- 7) The course content of the course entitled "Scope and Techniques of Research in ~~Environment~~ Sciences" and "Preparation and Presentation of Research Proposal" were accepted without any change.

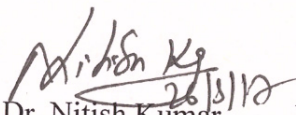
The meeting ended with vote of the thanks to all external and internal members for all the hard work and attending the meeting.

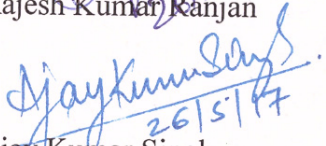
  
Dr. N. L. Devi

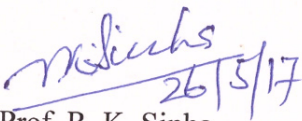
  
Dr. Prashant

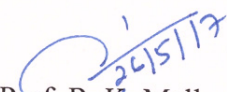
  
Dr. Rajesh Kumar Ranjan

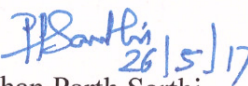
  
Dr. Ram Kumar

  
Dr. Nitish Kumar

  
Dr. Ajay Kumar Singh

  
Prof. R. K. Sinha

  
Prof. R. K. Mall

  
Dr. Pradhan Parth Sarthi

Central university of Bihar

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Centre for Environmental Sciences

Board of Studies of Centre for Environmental Sciences was held on March 02-03, 2013 to formulate course structure of M.Sc. Environmental Science and M.Phil./ Ph.D. Environmental Science

Following members were present

- 1. Dr. Ram Kumar - Chairperson
- 2. Prof. T.R. Rao- Member
- 3. Prof, K.G. Saxena - Member
- 4. Prof. A. K. Ghosh - Special Invitee
- 5. Prof. N. Parthasarathy - Member
- 6. Dr. Pradhan Parth Sarthi – Member
- 7. Dr. Rajesh Kumar Ranjan- Member
- 8. Dr. Prashant - Member
- 9. Dr. Manoj Panchal - Member

The committee after deliberations drafted the following

- 1. Course structure for M.Sc. Environmental science (Annexure I)
- 2. Course structure for M.Phil./ Ph.D. Environmental Science (Annexure II)

Annexure I

**M.Sc. in Environmental Science**  
**List of Courses in M.Sc. Environmental Science (72 Credits)**

Course code	Course Title	Credits
<b>Semester -I</b>		
ESC 501	Introduction to Ecology and Environmental Sciences	3
ESC 503	Social and Developmental perspectives	2
ESC 526	Environmental Chemistry	3
ESC 527	Environmental Geosciences	3
ESC 537	Environmental Biology	3
ESC 550	Practical- I	2
Total Credits		16
<b>Semester -II</b>		
ESC 502	Statistical Methods and Computer Applications	3
ESC 528	Atmospheric Sciences and Climate Change	3
ESC 529	Natural Resources and their Management	3
ESC 530	Energy and Environment	3
ESC 531	Environmental Policies, Laws and Ethics	3
ESC 551	Practical- II	3
Total Credits		18
<b>Summer Session</b>		
ESC 600	Summer internship earned credits will be added to the IV semester credits *	2

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Semester -III		
ESC 506	Analytical Methods	3
ESC 532	Environmental Impact Assessment	3
ESC 533	Water Pollution: Causes, Consequences and Control	3
ESC 534	Air Pollution: Causes, Consequences and Control	3
ESC 606	Remote Sensing and GIS	3
ESC 691	Research: Methodology and Proposal	2
ESC ***	Any elective course from the given list	3
Total Credits		20
Semester - IV		
ESC ***	Select any electives course (s) from the given list	6
ESC 692	Dissertation	10
ESC 600 Summer Internship *		
Total credits		18

**Elective Basket**

Course code	Course Title	Credits
ESC 505	Environmental Economics	2
ESC 535	Environmental Biotechnology	3
ESC 538	Soil Science	3
ESC 539	Hydrology and Water Resources	3
ESC 540	Industrial Environment Management	2
ESC 541	Environmental Education	2
ESC 601	River and Wetland Ecosystems	3
ESC 602	Biodiversity and Conservation Biology	3
ESC 603	Solid Waste Management	2
ESC 604	Eco-toxicology and Environmental Health	3
ESC 605	Restoration Ecology	3
ESC 607	Environmental Modeling	2
ESC 608	Disaster Management	2
ESC 609	Bio-geo chemical cycles	2

Annexure II

**Integrated M.Phil. - Ph.D. in Environmental Science**

Semester	I	II	III	IV	Total
	Credits				
Papers	15	15	0	0	30 Credits
Thesis	0	5	10	15	30 Credits
Total	15	20	10	15	60* Credits

\*One credit is equivalent to one contact hour in a week

Admission in integrated M.Phil. - Ph.D. (Environmental Science)

Themes / topics shall be specified in the advertisement


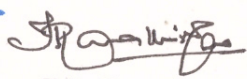

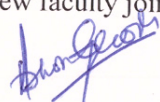

Eligibility – M.Sc. Environmental science or in related disciplines (as per UGC guidelines)


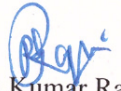
Semester I (15 Credits)		
Course Code	Course Title	Credits
	General Research Methodology	5
	Research Tools and techniques	5
	Seminar	5
Semester II (20 Credits)		
	Thesis synopsis	5
	Any elective (s) from the given list	15
Total Credits		
Semester III (10 Credits)		
	Thesis work and evaluation	10
Semester IV(15 Credits)		
	Thesis Defence and Submission	15

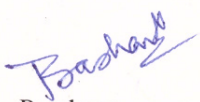
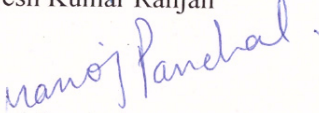
List of elective courses

1. Bioremediation
2. Environmental Biotechnology
3. Advanced Biogeochemistry
4. Aquatic Biodiversity and Conservation
5. Environmental Toxicology
6. Community Ecology
7. Population Ecology
8. Earth System Modelling
9. Coastal and Marine processes
10. Earth System Processes
11. Hydrometeorology
12. Advanced Water and Wastewater Treatment
13. Waste Management
14. Riverine and estuarine processes
15. Climate change

More courses may be added as and when required or new faculty joins.






  
 Ram Kumar    T.R. Rao    K.G. Saxena    A. K. Ghosh    N. Parthasarathy



  
 Pradhan Parth Sarthi    Rajesh Kumar Ranjan



  
 Prashant    Manoj Panchal