

## Department of Construction Engineering

1. Name of the Department/School/Centre: CONSTRUCTION ENGINEERING
2. Year of establishment: 1989
3. Faculty to which the Department/School/Centre is attached: FET
4. Names of programmes offered (UG, PG, MPhil, PhD, Integrated Masters; Integrated PhD, DSC, DLitt, etc.): 1. Bachelors Degree in Construction Engineering 2. Masters Degree in Construction Engineering with Specialization in Structural Repair and Retrofit Engineering.
5. Interdisciplinary programmes being conducted and other departments involved:
  - a) Collaborative consultancy for PMGSY roads as state technical Agency with P&RD Dept, Govt. of West Bengal.
  - b) The department has set up  
Centre for Corrosion Control Services in collaboration with Association of Corrosion Engineers  
Centre for Quality Construction
  - c) Collaborative Training program for skill development of technical personnel with Indian Concrete Institute
  - d) Conducting seminars and workshops in association with Indian Concrete Institute
  - e) Collaborative Study of Earthquake Vulnerability with TATA Steel Company limited.
  - f) Worked as teaching resource person with adult continuing department in their Building Supervisor Course.
  - g) Organized seminar, symposium in association Corrosion of control society.
6. Courses in collaboration with other universities, industries, foreign institutions, etc.:
  - a) Joint PhD Supervision with industry personnel.
  - b) Organized seminar, symposium in association with Indian Concrete Institute.
  - c) Organized short term course for skill development of technical personnel with Indian Concrete Institute
7. Details of programmes discontinued, if any, with reasons: Nil
8. Examination System: Annual/Semester/Trimester/Choice Based Credit System: Semester
9. Participation of the department in courses offered by other departments: Yes
10. Number of teaching posts sanctioned, filled and actual (Professor/Associate Professor/Asst. Professor/others):

	Sanctioned	Filled	Actual (including CAS & MPS)
Professor	01	-	04
Associate Professor	05	01	01
Asst. Professor	06	03	03
Other	NA	NA	NA

11. Faculty profile with name, qualification, designation, area of specialization, experience and research under guidance:

Name	Qualification	Designation	Specialization	Years of Experience	Ph.D./ M.Phil. students, last 4 years
Prof. S. Saraswati	PhD(Engg)	Professor	Geotechnical Engineering, Concrete Technology	29	02
Prof. P. P. Biswas	PhD(Engg)	Professor	Geotechnical Engineering, Pavement Engineering	25	02

Prof. D. Bandyopadhyay	PhD(Engg)	Professor	Structural Engineering	25	01
Prof. K. Bandyopadhyay	PhD(Engg)	Professor	Geotechnical Engineering, Pavement Engineering	20	04
Dr. G. C. Mandal	PhD(Engg)	Associate Professor	Environmental Engineering	20	Nil
Dr. P. Ghosh	PhD(Engg)	Asst. Professor	Structural Engineering	8	01
Mr. S. Nandi	BE, MS (Engg)	Asst. Professor	Construction Management	20	Nil
Mr. M. K. Sahis	BE,ME	Asst. Professor	Geotechnical Engineering	4	Nil

12. List of senior Visiting Fellows, adjunct faculty, emeritus professors, visiting professors, etc.:

- Dr. Subrata Chowdhury  
Head – Research and Development  
Ultratech Cement Ltd. India  
INAE Distinguished Visiting Professor
- Mr. Partho Gangopadhyay  
Superintending Engineer,  
PWD, Govt. of West Bengal  
Visiting Professor
- Dr. Arunava Majumdar  
Emeritus Professor  
School of Water Resource Engineering,  
Jadavpur University  
Visiting Professor
- Prof. Achyut Ghosh  
Technical Adviser (International) – Mageba  
SA, Switzerland  
Visiting Professor and member of board of studies
- Dr. A. P. Gupta  
Professor (Retired)  
Civil Engineering Department, IIT, Kharagpur  
Visiting Professor and member of board of studies

13. Percentage of classes taken by temporary faculty – programme-wise information:

UG :15% and PG:20%

14. Programme-wise Student Teacher Ratio: UG: 1:10 (including the visiting professors)

PG: 1:5 (including the visiting professors)

15. Number of academic support staff (technical) and administrative staff – sanctioned, filled and actual:

	Sanctioned	Filled	Actual
Support staff (technical)	3	3	3
Administrative staff	5	5	5

16. Research thrust areas as recognized by major funding agencies: Structural Health Monitoring, Earthquake Damage Evaluation, High Performance Concrete, Environmental Geotechnique, Characterization of Layered Surface

17. Number and names of faculty with ongoing projects from a) national b) international funding agencies and c) Total grants received. Give the names of the funding agencies, project titles and grants received project-wise.

Sl.	Name of the Investigator	Title of the project and duration	Amount sanctioned	Funding Agency
1	Dr. K. Bandyopadhyay	Studies on the efficacy of low cost adsorbents for the removal of fluoride and cadmium from waste water (2006-2009)	8.74 lacs	Department of Environment, Govt of WB

2	Prof. P.P. Biswas & Prof. S. Saraswati	High Performance Concrete with Blended Cement (2008-2012)	33.8 lacs	Board of Research in Nuclear Science
3	Dr. K. Bandyopadhyay	Feasibility Studies for Removal of Heavy Metals from Water and Wastewater Using a few low-cost Technologies. (2009-2012)	9.96 lacs	Department of Environment, Govt. of WB
4	Dr. K. Bandyopadhyay	Study on the Feasibility of Removal Inorganic Toxic contaminants from water and waste water using coagulation – Flocculation method. (Ongoing)	8.08 lacs	Department of Environment, Govt of WB
5	Dr. D. Bandyopadhyay	Comparative Study on Risk & Vulnerability of Earthquake in Different Cities / Countries	2.24 lacs	Tata Steel Company Limited

18. Inter-institutional collaborative projects and associated grants received

National collaboration

Name of the Investigator	Title of the project and duration	Amount sanctioned	Funding Agency
Prof. P.P. Biswas & Prof. S. Saraswati	High Performance Concrete with Blended Cement (2008-2012)	33.8 lacs	Board of Research in Nuclear Science

International collaboration:

19. Departmental projects funded by DST-FIST; UGC-SAP/CAS, DPE; DBT, ICSSR, AICTE, etc.; total grants received. (Give details.)

Heads	MHRD	DST-PURSE	TEQIP	UGC 11 <sup>th</sup> Plan
Building	-	-	-	-
Equipment	10.0 lakh	16.62 lakh	13.16 lakh	5.5 lakh
Books	-	-	-	3.5 lakh
Supplies and Materials	-	1.16 lakh	-	-
Computing & Networking	-	-	-	-
Facilities	-	-	6.5 lakh	-

Sl. No	Name of the Investigator	Title of the project and duration	Amount sanctioned	Funding Agency
1	Dr. K. Bandyopadhyay	Studies on the efficacy of low cost adsorbents for the removal of fluoride and cadmium from waste water (2006-2009)	8.74 lacs	Department of Environment, Govt of WB
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5	Dr. D. Bandyopadhyay	Comparative Study on Risk & Vulnerability of Earthquake in Different Cities / Countries	2.24 lacs	Tata Steel Company Limited
Total			62.82 lacs	

20. Research facility/centre run by the Dept./school/centre which has:
- state recognition
  - national recognition
  - international recognition
21. Special research laboratories sponsored by / created by industry or corporate bodies:
22. Publications:
- \* Number of papers published in peer reviewed journals (national / international)
  - \* Monographs : Nil
  - \* Chapters in Books : Nil
  - \* Edited Books : Nil
  - \* Books with ISBN with details of publishers : One  
Construction Technology  
S. Saraswati & S. Sarkar. Oxford University Press.  
ISBN-13 : 978-0-19-569483-3; ISBN-10 : 0-19-569483-X
  - \* Number listed in International Database (For e.g. Web of Science, Scopus, Humanities International Complete, Dare Database – International Social Sciences Directory, EBSCO host, etc.) : Nil
  - \* Citation Index – range / average
  - \* SNIP
  - \* SJR
  - \* Impact Factor – range / average
  - \* h-index
23. Details of patents and income generated: : Nil
24. Areas of consultancy and income generated: Structural health monitoring  
Failure investigation of structures  
Design of structures  
Retrofitting of structures  
Design of Highway pavements

Financial Year	Industrial Testing/Consultancy values
2008-2009	Rs. 169.14 lakh
2009-2010	Rs. 185.42 lakh
2010-2011	Rs. 392.83 lakh
2011-2012	Rs. 435.83 lakh
2012-2013	Rs. 453.33 lakh
Total	Rs. 1636.55 lakh

25. Faculty selected nationally / internationally to visit other laboratories / institutions / industries in India and abroad (give details):

Name of professor	Laboratories / institutions / industries visited
Prof. S. Saraswati	Carlbro laboratory, Denmark for NDT of pavements
Prof. P.P. Biswas	Carlbro laboratory, Denmark for NDT of pavements
Prof. P.P. Biswas	University of Sophia antipolis, Nice, France
Prof. K. Bandyopadhyay	Department of Civil Engineering, Hongkong Polytechnic Institute

26. Faculty serving in National committees b) International committees c) Editorial Boards d) any other (please specify and give details, including the name of the committee/s, position/s held, duration, etc.)

- f. Prof. S. Saraswati Vice President 2011 to 2013  
Indian Concrete Institute
- g. Prof. K. Bandyopadhyay National Executive Body 2013 to till date  
Member of Indian  
Geotechnical Society

h. Prof. P.P. Biswas Committee member of 2013 to till date  
Performance Evaluation of  
SQM of WBSRDA

27. Faculty recharging strategies (UGC, ASC, Refresher / orientation programs, workshops, training programs and similar programs) conducted: Young faculty members are encouraged to participate training program and workshop regularly on various emerging areas.

28. Student projects

- percentage of students who have done in-house projects including inter-departmental projects : Student projects is mandatory for all UG students in their final year syllabus.
- percentage of students doing projects in collaboration with other universities / industry / institute : Nine P.G students of final year (50%) are doing project work under the guidance of experts from industry.

29. Awards / recognitions received at the national and international level by

- Faculty

	Name of Award	Number of Award	Name of Awardee
National level	-	-	-
International level	Erramus Mundis Fellowship	1	Dr. Partha Pratim Biswas

- Doctoral / post doctoral fellows : Nil
- Students (Give details) : Nil

30. Seminars/Conferences/Workshops organized and the source of funding (national / international) with brief details (mention any notable features):

Technical Seminar (National) on Structural Repair and Retrofit Engineering in association with Indian Concrete Institute Seminar Hall of Department of Construction Engineering, Jadavpur University (2011)	ACC Limited BASF Construction Chemicals (India) Pvt. Ltd. Unitech Limited JMC Projects (India) Ltd. S.P.A. Consultants
One Day National Workshop on Fast Track Construction for Housing Sector in India in association with Indian Concrete Institute (2011)	Larsen & Toubro Construction National Buildings Construction Corporation Limited Service Masters Simplex Infrastructures Limited ACC Schnell Wire System Building Materials & Technology Promotion Council Ministry of Housing and Urban Poverty Alleviation, Government of India. UltraTech Cement
Technical Seminar (National) on Corrosion in Civil Engineering Structures-Awareness and Mitigation of corrosion in association with Indian Concrete Institute (2012)	Essar Projects (India) Limited Bridge & Roof Co. (India) Limited
Collaborative Training program for skill development of technical personnel with Indian Concrete Institute (2012)	ACC Limited

31. Code of ethics for research followed by the department:

*Plagiarism:* Authors who present the words, data, or ideas of others with the implication that they are their own, without attribution in a form appropriate for the medium of presentation, are committing theft of intellectual property and may be guilty of plagiarism and thus of research misconduct.

*Data:* Integrity of Data: It is a primary responsibility of a researcher to avoid either a false statement or an omission that distorts the research record.

**Use and Misuse of Data:** Research integrity requires not only that reported conclusions are based on accurately recorded data or observations but that all relevant observations are reported.

**Ownership of and Access to Data:** Research data obtained in studies performed at the University and/or by employees of the University are not the property of the researcher who generated or observed them or even of the principal investigator of the research group.

**Authorship and Other Publication Issues:** Publication of research results is important as a means of communicating to the scholarly world so that readers may be informed of research results and other researchers may build on the reported findings.

**Criteria for Authorship:** Publication must give appropriate credit to all authors for their roles in the research.

**Order of Authors:** Customs regarding the order in which co-authors' names appear vary with the discipline.

**Self-citations:** In citing one's own unpublished work, an author must be careful not to imply an unwarranted status of a manuscript.

**Duplicate Publication:** Researchers should not publish the same article in two different places without very good reason to do so, unless appropriate citation is made in the later publication to the earlier one, and unless the editor is explicitly informed.

**Early Release of Information About to be Published:** It is unethical to release to the media scientific information contained in an accepted manuscript prior to the publication.

**Interference:** Not only withholding of data but intentional removal of, interference with, or damage to any research related property, including instruments and other equipment, is improper and could be classified as research misconduct.

#### *Obligation to Report*

**Reporting Suspected Misconduct:** Reporting suspected research misconduct is a shared and serious responsibility of all members of the academic community.

**Correction of Errors:** If a finding of error, either intentional or inadvertent, or of plagiarism should be made subsequent to publication, the investigator has an obligation to submit a correction or retraction in a form specified by the editor or publisher and, in the case of research misconduct, in a form specified by the University and a sponsoring federal agency.

**Conflict of Interest:** There are some circumstances in which conflicts of interest could compromise the integrity of research or even lead to research misconduct, for example, by the distortion of research outcomes as a result of personal financial interests of a researcher.

**Responsibilities of a Research Investigator:** An investigator who leads a research group has leadership and supervisory responsibilities with respect to the research performed by members of the group.

**Responsibilities to Funding Agencies:** An investigator should be aware that the same standards of accuracy and integrity pertain to grant applications and proposals as to manuscripts submitted for publication.

#### **32. Student profile programme-wise (in the Current Semester):**

Name of the Programme (refer to question no. 4)	Applications received	Admitted		Pass percentage (w.r.t. last graduating batch)	
		Male	Female	Male	Female
BE in Construction Engineering	NA	30	04	100	100
ME in Construction Engineering	110	17	01	Yet to Pass	

### 33. Diversity of students

Name of the Programme (refer to question no. 4)	% of students from the same university	% of students from other universities within the State	% of students from universities outside the State	% of students from other countries
BE in Construction Engineering	NA	NA	NA	NA
ME in Construction Engineering	35	65	-	-

34. How many students have cleared Civil Services and Defence Services examinations, NET, SET, GATE and other competitive examinations? Give details category-wise.

GATE: 75% qualified in current session

### 35. Student progression

Student progression	Percentage against enrolled
UG to PG	25%
PG to M.Phil.	NA
PG to Ph.D.	5%
Ph.D. to Post-Doctoral	NA
Employed	
• Campus selection	90%
• Other than campus recruitment	10%
Entrepreneurs	NA

### 36. Diversity of staff

Percentage of faculty who are graduates	
of the same university	25%
from other universities within the State	45%
from universities from other States	15%
from universities outside the country	15%

37. Number of faculty who were awarded M.Phil., Ph.D., D.Sc. and D.Litt. during the assessment period (2008 – 2013): 02

38. Present details of departmental infrastructural facilities with regard to

- Library : Total no. of book 3852 & Total no. of journals 13 (11 Foreign, 2 National)
- Internet facilities for staff and students : Available
- Total number of class rooms : Six for UG and two for PG
- Class rooms with ICT facility : All rooms
- Students' laboratories : Seven
- Research laboratories : Three

39. List of doctoral, post-doctoral students and Research Associates

a) from the host institution/university

Faculty Name	Name of Associate	Category	Year
Koushik Bandyopadhyay	Chandrima Goswami	Doctoral	Registered 2008
	Devaleena Chowdhury	Doctoral	Registered 2008
	Sunandya Bhattacharjee	Doctoral	Registered 2008
	Biswajit Thakur	Doctoral	Awarded 2012
P. P. Biswas	Arnab Das	Doctoral	Registered 2012
	Sujata Purokayastha	Doctoral	Registered 2012
	Himadri Guha	Doctoral	Registered 2008
Subhajit Saraswati & P. P. Biswas	Dipesh Majumdar	Doctoral	Submitted 2013
Subhajit Saraswati & Debasish Bandyopadhyay	Basudev Bhatta	Doctoral	Awarded 2011
Debasish Bandyopadhyay & P. P. Biswas	Gopal Deb Karmakar	Doctoral	Registered 2010

Debasish Bandyopadhyay	P. Guha	Doctoral	Registered 2010
	J. S. Ali	Doctoral	Registered 2012
	S. Roy	JRF	Registered 2010
	S. Sengupta	JRF	Registered 2013

b) from other institutions/universities

Faculty Name	Name	Category (doctoral/ post-doctoral/RA)	Year	Name of the institution/university
Partha Ghosh	Suresh Thicksom	Doctoral	2011	Manipur Institute of Technology

40. Number of post graduate students getting financial assistance from the university. (Give details.) : Nil; PG program of this department is sponsored and self supported.

41. Was any need assessment exercise undertaken before the development of new programme(s)? If so, highlight the methodology. : Yes. Such need analysis was done in consultation with the industrial experts and reputed academicians from national as well as international institutions.

42. Does the department obtain feedback from  
faculty on curriculum as well as teaching-learning-evaluation? If yes, how does the department utilize the feedback? Yes, regular curriculum revision.  
students on staff, curriculum and teaching-learning-evaluation and how does the department utilize the feedback? Yes  
alumni and employers on the programmes offered and how does the department utilize the feedback? Occasionally feedbacks from alumnis and industries are collected though it is not a regular practice.

43. List the distinguished alumni of the department (maximum 10) :

a.	Parijat Kumar Mondal	Business Head (Q & C), Oriental Structural Engineers
b.	Prodosh Sen	Divisional Manager (Design Q & A), ITI Ltd.
c.	Souvik Sengupta	Deputy Chief Engineer, Eastern Railway HQ
d.	Raja Dutta	Construction Manager, L & T Construction

44. Give details of student enrichment programmes (special lectures / workshops / seminar) involving external experts.

Construction Engineering department is one of the students chapter of Indian Concrete Institute. Special Lectures are held regularly in the department involving external experts with support from Indian Concrete Institute.

45. List the teaching methods adopted by the faculty for different programmes. Audio Visual and conventional black board approach. Industrial visit for onsite training.

46. How does the department ensure that programme objectives are constantly met and learning outcomes are monitored? Feedbacks on performance of the students during campus interview by the employers and also the performance in GATE.

47. Highlight the participation of students and faculty in extension activities. Students regularly participate in various programs conducted under NSS scheme.

48. Give details of “beyond syllabus scholarly activities” of the department.: About 20% of the students are getting involved in research activities in UG level and presenting papers in national and international conferences.

49. State whether the programme/ department is accredited/ graded by other agencies? If yes, give details. AICTE, UGC, NAAC

50. Briefly highlight the contributions of the department in generating new knowledge, basic or applied.

This department is actively involved in industrial need-based research as well as in troubleshooting of various industrial problems. This department has well equipped facilities in the field of characterisation of materials and structural health monitoring and



has active interaction with industry for serving their needs. In the process, the department has contributed to applied knowledge in the field of construction engineering.

51. Detail five major Strengths, Weaknesses, Opportunities and Challenges (SWOC) of the department.

*Strengths*

Student Quality

Industry Institute interaction

Teacher-Student Relationship

Regular classes

*Weaknesses*

Space Scarcity

Small Number of Full time Research Fellows

Time of operation of the research laboratories

Travel support to faculty members and students for attending conferences etc.

*Opportunities*

Government funding

More Industry-Institute interaction

*Challenges*

Inadequate government fundings during the Plan period

Obsolescence of resources / technologies

To attract bright students as a State University

Employment opportunities for students

Quality Faculty recruitment

52. Future plans of the department (in as much detail as possible):

Condition and health monitoring of civil engineering structures are gaining more and more importance amongst the field engineers and also to the design engineers. Construction engineering department was established in Jadavpur University separately in spite of existence of its fifty years old Civil engineering Department in order to identify the problems associated with new construction and also to cater the need of repair and retrofitting of inservice structures with damage and distress. The need of comprehensive study in the area of repair is emerging as major area in a developing country like India. The science behind evaluation of damage and durability of structures is yet to be well defined to mitigate different types of disaster. Similarly the characterisation of appropriate materials with suitable methodology is also interlinked with durability study and damage prediction. The future plan of the department is to create Research infrastructure in the department to study the factors associated with prediction of damage and its extent in Indian scenario in concrete and steel structures in order to find out appropriate remedial measures with proper specifications. Meantime, the Department has started its Post Graduate programme in structural repair and retrofit engineering, which is unique in national context. The course has already gained tremendous popularity amongst the practicing engineers. The research infrastructure which will be created shall be used by the Post Graduate students for experimental work. Such experiments are the need of the hour, the outcome of which will lead to research publications. Moreover, creation of such lab infrastructure may be useful to attract research funding from the industries in the area of repair and rehabilitation of industrial structures and infrastructural facilities.