

ABOUT THE COURSE

This refresher course on bridge foundation is designed to assist practicing engineers in the understanding and review of principles of structural / geotechnical engineering for various types of bridge foundations. The course is suitable for Young Engineers (Graduate / Post Graduates) having 0-15 years of experience in the design of bridges and who are not fully well conversant with the subject. The course philosophy is to provide the participants with the information they need to design all types of bridge foundations. After completing this course, participants should be able to select the best foundation solution for different situations and should be able to carry out design of deep and shallow bridge foundations independently with minimum guidance from their seniors.

This intensive course begins with a broad overview of various types of foundations, familiarization with various codes and standards relevant to bridge foundation design. This will be followed by detailed explanation on all aspects of foundation design, including the geotechnical aspect, calculation of SBC, settlement, liquefaction potential analysis procedure, basic foundation analysis and design procedures. The Faculty for this course are all eminent members from academic institutions as well as from the industry, who are seasoned professionals and who will bring years of experience and professional understanding into the class room. Ample number of worked out examples and case studies will be presented during the workshop for various types of foundations. The course will be coordinated by Mr Alok Bhowmick, Honorary Secretary, IAStructE, who is an eminent bridge engineer himself with more than 37 years of experience in the field of bridge engineering.

CONTINUING EDUCATION

Continuing Education of practicing as well as serving professional engineers is an integral part of their overall professional development. Professional Engineers undertake continuing education activities to extend or update their knowledge, skill or judgement in their areas of practice. This enables them to: * Enhance their Productivity * Understand and Apply Advances in Technology * Face Changes in Career Direction * Better Serve the Community and / or their Employing Organization. All progressive minded modern professional firms/ organizations encourage their professional staff to participate in continuing education because this enhances the professional credibility of the organization.

ABOUT IAStructE

Indian Association of Structural Engineers (IAStructE) is national apex body of structural engineers in India established with the objective to cater to the overall professional needs of structural engineers. The association has become the source of expertise and information concerning all issues that involve structural engineering and public safety within the built environment. It has no commercial aim or objective.

IAStructE is purely a professional learned society with the prime objective of supporting and protecting the profession of structural engineering by upholding professional standards and acting as a mouthpiece for structural engineers in India.

IAStructE endeavors to ensure that it's members develop the necessary skill in structural engineering and work to the highest standards by maintaining a commitment to professional ethics and standards within structural engineering.

IAStructE strives for continued technical excellence; advancing safety and innovation across the built environment. It also strives to make available to the Government, Public Sector and Private Sector - a credible source of well qualified and experienced Structural Engineers. A nationwide database of Structural Engineers has been compiled and is being constantly updated.

IAStructE undertakes a broad range of technical activities which are aimed at knowledge sharing and capacity building. The association provides opportunity for all the members to develop skills in structural engineering and helps members to be at the forefront of structural engineering practice. Towards achievement of its aims and objectives, IAStructE is engaged in organizing the following:

CPD Courses for Professionals
Refresher Courses for young engineers
Student's orientation program
Seminars/Workshops
Technical Lectures & Technical Discussions

IAStructE is currently operating from four regional / state centres. These regional centres are located in the Eastern, Western, Northern and Southern parts of the country residing/practicing all over the country.



**Indian Association of
Structural Engineers**

Refresher Course on BRIDGE FOUNDATION DESIGN



Starting from 06 January 2018

Venue

**PHD Chamber of Commerce &
Industry, PHD House, 4/2 Siri
Institutional Area, August Kranti
Marg, New Delhi 110016**

**SECRETARIAT CONTACT:
K-69 A, Basement, Kalkaji New Delhi 110019**

Tel. 011-45794829,

E-mail iastructe@gmail.com

Website : <http://iastructe.co.in>

Refresher Course on Bridge Foundation Design

Lecture Dates: Starting, 06 January 2018, Classes to be held every Saturday till 10th February. (*Lecture Plan attached*)

Duration: Total lecture hours: 24 (12 lectures of 2 hours each)

Time: 4 hrs Lecture between 9:00 am - 1:15pm
Tea Break (11:00 am – 11:15 am)

Venue: PHD Chamber of Commerce & Industry, PHD House, 4/2 Siri Institutional Area, August Kranti Marg, New Delhi 110016

Course Fee: Rs 7500/- (IAStructE members)
Rs 10,000/- (Others)
(Three or more delegates from same organization can avail 10 % discount)

Course Coordinator: Mr Alok Bhowmick

TENTATIVE FACULTY

- **Mr Alok Bhowmick** - MD, B&S Engg. Consultants,
- **Mr Ravi Sundaram**, Director, Cengrs Geotechnica Pvt Ltd
- **Dr. Ramanathan Ayothiraman**, Professor, IIT Delhi
- **Prof. S. K. Mazumder**, Retd. Professor, Delhi College of Engineering
- **Mr Vinay Gupta**, Director & CEO, Tandon Consultants Pvt Ltd
- **Mr Harpreet Singh**, Sr. Project Manager, B&S Engg. Consultants,
- **Mr Shailesh Rastogi**, Regional Director, (Highway & Structures)AECOM
- **Dr Bhupinder Singh**, Associate Professor, IIT Roorkee
- **Mr Aditya Sharma**, Director, Ramboll India Pvt Ltd
- **Mr V. N. Heggade**, Sr. Vice President & Head EDMS, Gammon India Ltd
- **Prof. Mahesh Tandon** - MD, Tandon Consultants Pvt Ltd

TOPICS TO BE COVERED

1. Introduction – A broad overview of various types of foundations applicable for bridges and flyovers
2. Applicable Indian Codes of Practices for design of Foundation
3. Geotechnical Aspects, Calculation of Settlement and Safe Bearing Capacity for Open Foundation, Pile Foundation and Well Foundation with worked examples
4. Liquefaction Analysis of Foundation concept with a worked example
5. Calculation for Dynamic Increment of Earth Pressure – concept with worked example
6. Hydrology & Hydraulics Engineering, Scour Calculations for Bridges & Culverts with worked example
7. Loads & Load Combinations as applicable for Foundation Design (For Highway / Railway Bridges)
 - All Loads
 - Load Combinations as per IRC / IRS Code
 - Worked Example for load computations
8. Design of Retaining Walls (With worked Examples) :
 - PCC / RCC retaining walls (Cantilever as well as counterfort type)
 - Stone Masonry Walls for Hilly regions
9. Design of Open Foundation (With worked Examples) :
 - Bridge Piers and
 - Bridge Abutments
 - Arch Bridge Foundations
 - Case studies

10. Design of Well Foundation, including well caps (With worked Examples) for :
 - Bridge Piers and
 - Bridge Abutments
 - Case studies (To include Tilt & Shift Calculations based on actual site information's)
11. Design of Pile Foundation, including Pile caps (With worked Examples) for :
 - Bridge Piers and
 - Bridge Abutments
 - Case studies (To highlight redesign of pile & pile cap due to abandonment of one or more pile in a group).
12. Design of Special Foundations (With worked Examples) :
 - long free standing piles in major rivers with deep scour – Second Order effects in pile foundation design
 - Inclined Foundations
 - Foundation with Raker Piles
 - Anchor Foundation for Foundations subjected to uplift
13. Strengthening and repair of Foundations (Few Case Studies covering bridges with open foundation, Pile foundation and Well foundation)
14. Critical Appraisal of the Code IRC:78
15. Question & Answer session on the Complete Course Content

WHO SHOULD ATTEND

- * **Fresh Civil / Structural Engineers employed in Government / Public and Private Sector / Individual Consultancy Firm**
- * **Civil/Structural Engineers planning to join Structural Engineering Profession**
- * **Other interested professionals Civil/Structural Engineers**

Refresher Course on BRIDGE FOUNDATION DESIGN

PHD Chamber of Commerce & Industry, PHD House, 4/2 Siri Institutional Area, August Kranti Marg, New Delhi 110016

Starting From 06 January 2018

Venue: Shriram Hall (1st Floor)
Time : 09:00 AM to 01:15 PM; Tea Break (11:00 am to 11:15 am)
Duration : Total Lecture Hours : 24 (12 lectures of 2 Hours each)
Course Coordinator– Mr. Alok Bhowmick, Honorary Secretary, IAStructE

Lecture No.	TOPICS	FACULTY	DATE & TIME
Lecture 1 (Introduction)	1. Introduction – A broad overview of various types of foundations applicable for bridges and flyovers 2. Applicable Indian Codes of Practices for design of Foundation	Mr Alok Bhowmick, MD, B&S Engg. Consultants	6th January 2018 09 AM to 11:00 AM
Lecture 2 (Geotechnical Issues-1)	3. Geotechnical Aspects, Calculation of Settlement and Safe Bearing Capacity for Open Foundation, Pile Foundation and Well Foundation with worked examples	Mr Ravi Sundaram, Director, Cengrs Geotechnica Pvt Ltd	6th January 2018 11:15 AM to 01:15 PM
Lecture 3 (Geotechnical Issues-2)	4. Liquefaction Analysis of Foundation concept with a worked example 5. Calculation for Dynamic Increment of Earth Pressure – concept with worked example	Dr. Ramanathan Ayothiraman, Professor, IIT Delhi	13th January 2018 09 AM to 11:00 AM
Lecture 4 (Hydrology & Hydraulics)	6. Hydrology & Hydraulics Engineering, Scour Calculations for Bridges & Culverts with worked example	Prof. S. K. Mazumder, Reid. Professor, Delhi College of Engineering & Mr Harpreet Singh, Sr. Project Manager, B&S Engg. Consultants	13th January 2018 11:15 AM to 01:15 PM
Lecture 5 (Action & Action Combinations)	7. Loads & Load Combinations as applicable for Foundation Design (For Highway / Railway Bridges) - All Loads - Load Combinations as per IRC / IRS Code - Worked Example for load computations	Mr Vinay Gupta, Director & CEO, Tandon Consultants Pvt Ltd	20th January 2018 09 AM to 11:00 AM
Lecture 6 (Retaining Wall Design)	8. Design of Retaining Walls (With worked Examples) : • PCC / RCC retaining walls (Cantilever as well as counterfort type) • Stone Masonry Walls for Hilly regions	Mr Harpreet Singh, Sr. Project Manager, B&S Engg. Consultants	20th January 2018 11:15 AM to 01:15 PM
Lecture 7 (Open Foundation Design)	9. Design of Open Foundation (With worked Examples) : • Bridge Piers and • Bridge Abutments : • Arch Bridge Foundations • Case studies	Mr Shailesh Rastogi, Regional Director, (Highway & Structures)AECOM	27th January 2018 09 AM to 11:00 AM
Lecture 8 (Well Foundation Design)	10. Design of Well Foundation, including well caps (With worked Examples) for : • Bridge Piers and • Bridge Abutments : • Case studies (To include Tilt & Shift Calculations based on actual site information's)	Dr Bhupinder Singh, Associate Professor, IIT Roorkee	27th January 2018 11:15 AM to 01:15 PM
Lecture 9 (Pile Foundation Design)	11. Design of Pile Foundation, including Pile caps (With worked Examples) for : • Bridge Piers and • Bridge Abutments : • Case studies (To highlight redesign of pile & pile cap due to abandonment of one or more pile in a group).	Mr Aditya Sharma, Director, Ramboll India Pvt Ltd	3rd February 2018 09:00AM to 11:00 AM
Lecture 10 (Special Foundation Design)	12. Design of Special Foundations (With worked Examples) : • long free standing piles in major rivers with deep scour – Second Order effects in pile foundation design • Inclined Foundations • Foundation with Raker Piles • Anchor Foundation for Foundations subjected to uplift	Mr V. N. Heggade, Sr. Vice President & Head EDMS, Gammon India Ltd	3rd February 2018 11:15 AM to 01:15 PM
Lecture 11 (Strengthening, Repair & Rehab of Foundation)	13. Strengthening and repair of Foundations (Few Case Studies covering bridges with open foundation, Pile foundation and Well foundation)	Prof. Mahesh Tandon - MD, Tandon Consultants	10th February 2018 09 AM to 11:00 AM
Lecture 12 (Critical Appraisal of Existing Code & Conclusion)	14. Critical Appraisal of the Code IRC:78 – Lecture by Alok Bhowmick 15. Question & Answer session on the Complete Course Content	Prof. Mahesh Tandon Mr Alok Bhowmick Mr Ravi Sundaram Mr Vinay Gupta	10th February 2018 11:15AM to 01:15 PM

* The faculty shown above is tentative, subject to their confirmation and availability

REGISTRATION FORM

**Refresher Course on
"BRIDGE FOUNDATION DESIGN"**

Starting from 06 January 2018

Venue: PHD Chamber of Commerce & Industry, PHD House, 4/2 Siri Institutional Area, August Kranti Marg, New Delhi 110016

Name:.....

Designation

Organisation.....

Address

.....

City.....Country.....Pin Code.....

Phone

Mobile.....

Fax

E-mail.....

Signature

REGISTRATION FEE

- IAStructE Members - Rs 7,500/-
- Others - Rs 10,000/-

(Three or more delegates from same organization can avail 10 % discount on registration fee)

MODE OF PAYMENT

Please find enclosed, Cheque/DD No.....Dated.....

In favor of "**Indian Association of Structural Engineers**"

Bank.....Branch.....Payable at New Delhi.

Payment can also be done by bank transfer as per particulars given below, in which case NEFT transaction particulars should be submitted to the Secretariat along with the Registration form.

Beneficiary Name: **Indian Association of Structural Engineers** | AccountNumber:**10151200388** |

Bank Name: **State Bank of India** | BranchCode:**07196** | IFSC:**SBIN0007196** | MICR:**110002034** |

Branch Address: **Flyover Market, Defence Colony, New Delhi 110024**

Reserve your seat by sending this form to the address given below along with the payment:

Indian Association of Structural Engineers
K-69 A, Basement, Kalkaji, New Delhi 110019

For more information please contact:

Mr Vikas Verma (Manager)

IAStructE Secretariat

Landline: 011-45794829

Email: iastructe@gmail.com; Website: www.iastructe.co.in