

**Advanced Course on  
Wind loads and Effects on Structures (e-WILES 2020)  
16-18 December 2020**

On-line  
Course



**CSIR-Structural Engineering Research Centre (CSIR-SERC)**

CSIR-SERC, Chennai, India, is one of the national laboratories under the Council of Scientific and Industrial Research (CSIR), India. CSIR-SERC has built up excellent facilities and expertise for the analysis, design and testing of structures and structural components. Services of CSIR-SERC are being extensively used by the Central and State Governments and public and private sector undertakings. Scientists of CSIR-SERC serve on many national and international committees and the Centre is recognised at the national and international levels as a leading research institution in the field of structural engineering. CSIR-SERC has been certified as ISO 9001:2015 quality institution.

**Wind Engineering Laboratory (WEL)**

Wind Engineering Laboratory (WEL) of CSIR-SERC has a state of the art boundary layer wind tunnel facility, which is one of the largest boundary layer wind tunnels in our country. The research group at WEL has developed expertise in conducting wind tunnel investigations on scaled models, full-scale field experiments studies on tower like structures and computational fluid dynamics studies on bluff bodies, which are considered to be complementary tools of wind engineering all over the world. Cyclone disaster mitigation is one of the major thrust areas of research of the laboratory. Further, WEL has contributed towards formulation and revision of Indian codes for wind loads. WEL has also been continuously providing high-end technical service to various clients via consultancy / sponsored / grant-in-aid research projects.

**Organised by**



CSIR INTEGRATED SKILL INITIATIVE

**CSIR-Structural Engineering Research Centre  
CSIR Campus, CSIR Road, Taramani  
Chennai - 600 113, India**

**Background**

With the ever increasing need for residential / office space in urban environment, there is continuous demand for infrastructure like tall buildings with innovative and complex architectural shapes, large span cable stayed bridges, communication towers, etc. Similarly, there is a boom on expansion / setting-up of new, higher capacity thermal / nuclear power plants across the country. This calls for design and construction of tall chimneys, cooling towers, long span industrial structures, etc., which are highly susceptible to dynamic wind action. In addition, due to scarcity of land, these buildings / structures need to be located in close proximity, which lead to wind induced interference effects on the primary building / structure. Further, coastal regions of India are vulnerable to severe cyclonic storms every year. This is evident from the recent severe cyclonic storms (Phailin, Hudhud, Vardah, Gaja, Fani, Amphan, etc.). The structural damage due to such severe cyclonic storms is significant and is proportional to the intensity of the cyclonic storm. Since, wind being random both in time and space, the evaluation of wind loads for the design of buildings / structures necessitates the understanding of the random nature of wind and its effects for the safe and efficient design of buildings / structures. In view of the fact that the present academic curriculum for civil / structural engineering does not cover the wind engineering. Based on the above needs, it is proposed to conduct an advanced course on the fundamentals of wind engineering and background to design practices in evaluating the dynamic wind loads and their effects.

**Objectives**

The primary objective of the course is to provide an opportunity for researchers, academicians, practising design engineers and consultants and other engineering professionals in familiarising themselves with the wind speed, wind pressure, dynamic wind loads and their effects on buildings / various special structures and relevant codes of practice.

**Course contents**

The course will cover the various topics like Introduction to Wind Engineering - Background of basic and design wind speeds given in [IS 875 (part 3)] - Structural dynamics - Bluff-body aerodynamics - Dynamic effects of wind on buildings and structures - Wind loads and their effects on special structures viz. tall buildings including interference effects, chimneys including interference effects, long span industrial buildings, natural draught cooling towers - long span bridges - wind turbine support structures - façade design of tall structures.

**Faculty**

Faculty for the course mainly comprises of scientists from CSIR-SERC and a few experts from reputed academic institutions / industry.

**Duration**

16 - 18 December 2020. Time: 10:00 a.m. to 5.00 p.m.

**Requirements for on-line mode**

Desktop / Laptop / Smartphone with good internet speed and sufficient data pack. A web link will be sent to the registered participants for joining the course.

**Registration**

On-line registration for the course can be completed by using the link (<http://forms.serc.res.in/view.php?id=33087>). Please select the intended course, fill all the particulars and pay the course fee using SBI Collect link in the registration form.

**Course fee**

Rs. 1500/- per participant inclusive of GST for Indian delegates and US\$40 for foreign delegates. Course material (in pdf format) and certificate of participation will be provided to all the registered participants.

**For Further Details, Please Contact:**

**Dr. P. Harikrishna / Dr. A. Abraham**

Course Coordinators (e-WILES 2020),  
CSIR-Structural Engineering Research Centre, CSIR Campus,  
CSIR Road, Taramani, Chennai - 600113, India

Tel: 91 - 44 - 2254 9159 / 4841; Fax: 91 - 44 - 2254 1508

E-mail: [hari@serc.res.in](mailto:hari@serc.res.in) / [abraham@serc.res.in](mailto:abraham@serc.res.in)

Website: <https://serc.res.in>

