

Design and Analysis of Offshore Floating Wind Turbine

Overview

The wind energy is one of the most important renewable energy resources which can cover worldwide energy demands and it is an essential and powerful energy resource for the socio-economic development and economic growth. Over the past few years, a substantial number of offshore wind farms have been put into operation in various countries. The possible development of the design and construction of floating wind turbines in offshore regions are highly essential for the generation of renewable energy. So the assessment on the performance of the offshore floating wind turbine is very important for proper design of the floater. In the proposed course, the lecture on offshore wind turbines for the generation of renewable energy will be covered. The participants will gain the skills and knowledge to assess different types of offshore wind turbine support structures, the challenges of maintenance and safety implications of each design. Further, the participants will be able to identify and quantify appropriate sites, assess the available resource and select the correct technology for the location. The course will promote an understanding of the principles, fundamental concepts, design principles and the novel design benefits to the offshore wind energy.

Course Duration	3rd September 2019 to 7th September 2019
Modules	<p>The course will cover following topics:</p> <ul style="list-style-type: none"> • Introduction of Offshore Wind Energy • Fundamental concepts and the theory behind the conversion of wind energy • Concept of floating offshore wind turbines • Numerical modelling of Floating Offshore Wind Turbine (FOWT) • Design of FOWT and wind energy system configurations • Coupled dynamic analysis of offshore wind turbine • Wind turbine installations and wind farms
Host Institute	National Institute of Technology Karnataka, Surathkal
No. of Credits	1
Maximum No. of Participants	50
You Should Attend If...	<ul style="list-style-type: none"> • You are an Executive/Engineer/Researcher from private and government organizations including R&D laboratories. • You are a student at (BTech/MTech/PhD) of Ocean Engineering and Naval Architecture, Mechanical Engineering, Civil Engineering and Marine Structures, Mathematics and Physics. • You are faculty members from reputed academic and technical institutions.
Course Registration Fees	<p>The participation fees for taking the course is as follows:</p> <p>Industry/Research Organizations: Rs. 5000/- Academic Institutions: College/University Teachers: Rs. 3000/- Students: Rs. 1000/-</p> <p>The above fees include all instructional materials, computer use for tutorials, 24 hr free internet facility.</p>
Accommodation	The participants will be provided with single bed accommodation on payment basis.

Course Faculty



Prof. Motohiko Murai is an Associate Professor at the Department of Environment and System Sciences, Yokohama National University, Japan. His research interest includes hydrodynamic and hydroelastic problem of floating structures and utilization of ocean renewable energy by a floating system

He has been a member of JASNAOE (Japan Society of Naval Architects and Ocean Engineers), JACZS (Japanese Association for Coastal Zone Studies), JSOP (Japan Society of Ocean Policy), ITTC, ISSC, International Energy Agency (IEC). He is involved with a national level high value research, financially supported by Department of the New Energy and Industrial Technology Development Organization (NEDO), Japan and the Ministry of Environment of Japan.



Prof. Arkal Vittal Hegde is Professor at the Department of Applied Mechanics and Hydraulics. His research area includes floating pipe and bottom founded breakwaters, coastal erosion and mitigation and soft computing in coastal engineering.

He has worked as a visiting professor in Asian Institute of Technology, Thailand and also worked as visiting researcher at Faculty of Engineering, Ottawa University, Ottawa, Canada and NCKU, Taiwan. He has guided more than 50 MTech, 9 PhD students. He has published around 180 papers in various International Journal and conference proceedings.



Dr. Debabrata Karmakar is an Assistant Professor at the Department of Applied Mechanics and Hydraulics. His research interest includes Coastal Hydrodynamics, Offshore wave and wind energy and hydroelasticity of floating structures and wave-structure interaction problems.

He has worked as a researcher at Centre for Marine Technology and Ocean Engineering (CENTEC), Instituto Superior Técnico, Lisbon, Portugal and Assistant Professor in the School of Naval Architecture and Ocean Engineering, Indian Maritime University, Visakhapatnam, India. He has worked as Technical Committee Member of the ISSC on Offshore Renewable Energy. He has published peer reviewed papers in various International Journal, conference proceedings and book chapters.

Course Coordinators

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