

Introduction to Marine Renewable Energy

Overview

The course will describe the origins and nature of the natural resources and deliver the basic theory and practice of their conversion to electricity and delivery to the electricity network. It will highlight the technical, economic and environmental reality of installing and operating devices in the sea and describe the research challenges remaining and international progress in deployment.

The objectives of the course are to create and stimulate knowledge and understanding in marine renewable energy and its conversion, specifically of:

- the origins of the natural resource;
- the theory that describes its power and energy content;
- its conversion to mechanical and electrical power;
- controlling and delivering the electricity to network;
- the network interaction;
- the necessary ancillary equipment for seabed fixing;
- operating in the marine environment;
- economic implications and appraisal;
- need for further supporting research;
- Technology status and international progress.

Course participants will learn these topics through lectures and case studies. Assignments will stimulate the participants interest in the understanding of the subject.

Dates for the Course	15th February 2016 to 20th February 2016
Host Institute	IIT Madras
No. of Credits	1
Maximum No. of Participants	60
You Should Attend If...	<ul style="list-style-type: none">▪ You are a Civil/ Mechanical/ Electrical/ Marine engineer or Naval architect interested in designing an ocean renewable energy device.▪ You are an Oceanographer or Physics background interested to learn basics of ocean energy forms and its extraction principles in your profession.▪ You are a student or faculty from academic institution interested in learning how to initiate a course or to obtain a research theme in Ocean energy system.
Course Registration Fees	<p>The participation fees for taking the course is as follows: Student Participants: Rs.1000 Faculty Participants: Rs.3000 Government Research Organization Participants: Rs.5000 Industry Participants: Rs.10000</p> <p>The above fee is towards participation in the course, the course material, computer use for tutorials and assignments, and laboratory equipment usage charges.</p> <p>Mode of payment: Demand draft in favour of “Registrar, IIT Madras” payable at Chennai</p>
Accommodation	<p>The participants may be provided with hostel accommodation, depending on the availability, on payment basis. Request for hostel accommodation may be submitted through the link: http://hosteldine.iitm.ac.in/iitmhostel</p>

Course Faculty



Prof. A.R. Wallace is the Executive Director of the EPSRC SuperGen UK Centre for Marine Energy Research (UKCMER), a Director of the FloWave Ocean Energy Research Facility and a founding Co-Director of the Scottish Energy Technology Partnership. His research interests include marine energy development and smart-grids, specifically the interaction of distributed renewable energy generation with the autonomous electricity networks.



Prof. S.A. Sannasiraj is a faculty of Department of Ocean Engineering, Indian Institute of Technology Madras. His research interest includes wave modeling, wave energy, data assimilation, dynamics of wave breaking & impact on offshore structures and Nonlinear free surface wave simulation using FEM and particle methods to simulate wave impact on vertical wall and piles.



Prof. Vallam Sundar is a faculty of Department of Ocean Engineering, Indian Institute of Technology Madras. His research interest includes wave hydrodynamics and coastal engineering. He has been carrying out research on wave energy resource estimate and potential devices for over the past three decades.

Course Coordinator

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