



Mangalore University

Department of Marine Geology

Global Initiative on Academic Network (GIAN)

A course for PG Students, Researchers, Faculty members, Officers / Policy Makers on

Managing Coastal Systems, A Biogeochemical Perspective

September 24 to 28, 2018

By

Prof. Tim Jickells, School of Environmental Sciences, University of East Anglia UK

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Prof. B.R. Manjunatha, Department of Marine Geology, Mangalore University, India

Preamble

Global Initiative of Academic Networks (GIAN) is an initiative of higher education supported by the Government of India by inviting the talent pool of scientists and entrepreneurs internationally to encourage their engagement with the institutes of higher education in India to augment the country's existing academic resources, accelerate the pace of quality reform and elevate India's scientific and technological capacity to global excellence.

Overview of the course

Perhaps the most complex mixture of biogeochemical interactions on earth take place at the land-ocean interaction zone and in the coastal system. The coastal systems are constantly subjected to change on many timescales, tidal, diurnal, seasonal and glacial-interglacial, now overlain by changes due to anthropogenic activity and climate change. Therefore, there is a need to focus on coastal issues and biogeochemistry in particular for a better and more sustainable future. Education is the best way to improve the long term status of this key living ecosystem through the holistic biogeochemical approach including coastal management and modelling through the following objectives:

Objectives

- i) To train students, researchers, faculty members and bureaucrats to create interest and knowledge about coastal systems and their importance,
- ii) to understand the complex interaction between processes operating in the coastal systems through multidisciplinary studies (physical, chemical, biological and geological processes),
- iii) to trace sources, transport pathways and sinks for materials to the coastal system including the conceptual, observational and modelling approaches for understanding and forecasting the coastal (biogeochemical) system,
- iv) to stress the importance of biogeochemical options to mitigate coastal management issues and promote sustainable management through modelling approaches for the coastal community of India, to introduce/modify the MSc/PhD curriculum and promote collaboration through exchange of scientific/technological information between the host institution and the School of Environmental Sciences, University of East Anglia, U.K., and
- v) to plan for contributing to ongoing international programmes including Future Earth.

Course details

Date	Lecture (Lect. /Tutorial (Tuto)	Title
24.09.2018		<i>Inauguration of the course: welcome speech by BRM and introductory note by TJ.</i>
	Lect. 1 : 1 hr: TJ	<i>An introduction to the global significance of coastal systems and international initiatives to promote their sustainable management, including the Future Earth programme</i>
	Lect. 2: 1 hr: BRM	<i>Perspectives and problems of the coastal zone of India</i>
	Lunch break	
	Tuto. 1: 2 hr: TJ	<i>Coastal systems and management.</i>
25.09.2018	Lect. 3 : 1 hr	<i>BRM and national research programs on land-sea interaction zones with an emphasis on studies along the Indian coast</i>
	Lect. 4:1 hr: TJ	<i>Sources and material transport pathways in coastal systems</i>
	Lunch break	
	Tuto. 2: 2 hrs: TJ	<i>Interactive discussion on understanding coastal systems and biogeochemical processes</i>
26.09.2018	Lect. 5 : 1 hr: TJ	<i>Air-Sea exchange processes and their importance in coastal systems</i>
	Lect. 6: 1 hr: BRM	<i>Biogeochemical approaches for understanding the complex processes in the coastal systems</i>

	Tuto. 3.: 1hr: BRM	<i>Coastal Systems of India with emphasis on Karnataka Coast: issues and mitigation options</i>
	Lunch break	
	Lect. 7 2 hrs. TJ	<i>Conceptual, observational and modelling approaches for understanding and forecasting the coastal (biogeochemical) system and Statistical Modelling for assessing the human impacts on natural coastal system</i>
	Prof. T.P.M. Pakkala* 1 hr	<i>Modelling the human impacts on the natural coastal system</i>
27.09.2018	Lect. 8 : 1 hr: TJ	<i>Coastal eutrophication and deoxygenation, and their impacts</i>
	Lect. 9: 1 hr: BRM	<i>Submarine groundwater discharge: principles and implications on the coastal systems</i>
	Lunch break	
	Tuto. 4: 2 hr: TJ	<i>Coastal ocean expeditions: research planning, objectives, research methodology and interpretations of results.</i>
	Lect 10: 1 hrs: TJ	<i>Solid waste management and its disposal option to the coastal system</i>
	Lect. 10: 1 hr: TJ	<i>Management of coastal land margins and their implications</i>
	Tuto.5: 2 hrs: TJ	<i>Collaborative research plan for linking to ongoing international programmes including Future Earth.</i>
28.09.2018		Examination (90 minutes) + Valedictory function

*invited lecture

Who can apply?

Executives/policy makers from corporation, city/municipal/urban development offices, chemical engineers, faculty members and researchers from universities, College of Fisheries, Central Marine Fisheries Research Institutes, Geological Survey of India, and institutions related coastal studies, oceanography, earth and life sciences, National Institute of Technology, and government organizations including R&D laboratories.

Student from MSc/M.Tech/PhD, Post-Doctoral Fellows, Faculty from earth science, marine biology, marine geology, marine science and oceanography.

Course Fees (Rs)

Faculty/Scientists from Academic Institutions/Universities: 2000

Participants from Private Sectors/Industries: 5000

Research Students: 1000

MSc Students: 500

Overseas students: \$ 100

Foreign Faculty : Prof. Tim Jickells



Professor Tim Jickells is a multidisciplinary researcher, teacher and academic scientist. His research includes atmospheric and oceanographic disciplines, especially in the field of biogeochemistry. His research focusses particularly on the impact of atmospheric deposition on the oceans and on carbon and nutrient cycling in coastal systems. He has conducted fieldwork around the world from the poles to the equator. Professor Jickells had a degree in Chemistry from Reading University and an MSc and PhD in Oceanography from Southampton University. He has worked in Glasgow and Bermuda before moving to UEA in 1985. He has also held many positions in global expert committees and organisations. He has supervised more than 20 PhD students, authored books, edited special issues and written ~200 research papers including publications in Nature and Science journals. He has been honoured with the Challenger Medal 2006, Fellowship of the Royal Society of Chemistry 2012 and Fellowship of the American Geophysical Union 2016. He has served as Director of the Future Earth European Centre and currently serves on Scientific Advisory Council of the UK DEFRA Ministry.

Host Faculty

Prof. B.R. Manjunatha



Prof. B.R. Manjunathais basically a geologist, working in the field of geochemistry and applications of radioisotopes to understand *the present and past natural processes, and anthropogenic impacts on earth-atmosphere-ocean system along south-western India since 1985. He had* Post-doctoral research experience at Bedford Institute of Oceanography Canada in 1996-97, Academic Staff Commonwealth Exchange Fellow at UEA 2005-06, recipient of Sir CV Raman Award by Government of Karnataka in 2001, honourable mention of the Sociological Abstract Discovery Prize by Pro Quest Cambridge Scientific Abstracts (CAS), U.S.A. in 2007, Best Teacher award Best Teacher Award in S & T, Mangalore University in 2016. He has guided 5 Ph.D. students, worked in eight research projects and published about 50 research papers.

Contact:

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