



BIOENERGY

PROF. MAINAK DAS

Department of Biotechnology & Bioengineering
IIT Kanpur

TYPE OF COURSE : Rerun | Core | UG

COURSE DURATION : 8 weeks (29 Jul'19 - 20 Sep'19)

EXAM DATE : 29 Sep 2019

INTENDED AUDIENCE : M.A, M.Arch, M.U.R.P, M.E.P, M.L.A,

PRE-REQUISITES : Has cleared 10+2 with science

INDUSTRIES APPLICABLE TO : Green energy industries, Agro-waste processing industries, Renewable energy materials industry, Bio-fuel and fossil fuel companies.

COURSE OUTLINE

This course aims to provide an overview of the basic process, by which solar energy is collected and converted to biomass, which is essentially, what we call 'bioenergy'. During the discourse, emphasis will be given on different strategies to convert biomass to biofuels, the review of the available technologies and how these could meet the growing demand for energy in the future.

ABOUT INSTRUCTOR

Prof. Mainak Das, Department of BSBE & Design Indian Institute of Technology, Kanpur. is an agriculture graduate (1989-1994) from College of Agriculture Indore, India. He did his master's in animal physiology (1994-1997) from National Dairy Research Institute, Karnal, India. Later, he did his doctoral studies (2004-2008) in biomedical sciences from University of Central Florida, USA. Since April 2010, he is a tenured faculty in bioengineering and design at Indian Institute of Technology, Kanpur, India. His area of research is green energy, bio-electricity, physiology and sensors.

COURSE PLAN

Week 1 : Introduction to bioenergy

Week 2 : Basics of biomass technology & biomass resources

Week 3 : Biofuels I

Week 4 : Biofuels II

Week 5 : Biofuels III

Week 6 : Bio-power I

Week 7 : Bio-power II

Week 8 : Bioenergy distribution & end use for a sustainable future