



INTRODUCTION TO ANCIENT INDIAN TECHNOLOGY

PROF. D.P. MISHRA

Department of Aerospace Engineering
IIT Kanpur

PRE-REQUISITES : Open to All

COURSE OUTLINE: This course is designed for undergraduate students, interested in learning about the ancient Indian Technology which is the hallmark of glorious Indian civilization, only living civilization of the world that exists till today. The main emphasis is placed on nature centric aspects of ancient Indian technologies that can be adopted in modern time. As this is an introductory course, care has been taken to present the materials in a gradual manner to instill confidence in the minds of the students. Attempts have been made to keep the deliberation as simple as possible with intriguing questions so that students can take exploratory route to learn more about it in future. Adequate emphasis is given in this course for exposing the students to ancient science and technologies which can be adopted for modern technological development. The tenets of various technologies which are essential for human living are discussed in details to encourage the students to develop a feel for ancient Indian and technologies.

ABOUT INSTRUCTOR :

Prof. Debi Prasad Mishra, a professor in the Department of Aerospace Engineering and Design Programme, Indian Institute of Technology Kanpur (IITK) and an adjunct Professor in Centre for Indian Knowledge System, IIT, Guwahati is currently working as the Director of NITTTR Kolkata. Currently he is also working as the chairman, BoG, Govt. College of Engineering, Kalahandi. His areas of interests are Propulsion, Combustion, Computational Fluid Dynamics and Atomization. He had held Indian Oil Golden Jubilee Professional Chair in IIT Kanpur. He has been conferred with several awards and recognitions. He has authored 5 textbooks and 9 edited books in the field of combustion and propulsion. He has published more than 260 research papers in International/National Journals and conferences. He has also five patents to his credit. He has undertaken more than 32 research and consultancy projects from various agencies, research labs and industries. He has developed 6 online courses under Swayam Platform, a national initiative of Govt. of India. Besides this, he has designed and developed a unique MOOC course, "Introduction to Ancient Indian Technology" on Swayam platform of NPTEL. Over last 10 years, he has delivered several invited lectures on ancient Indian science & technology and culture & tradition to more than 1.5 lakh people across India to revive and re-establish ancient scientific and technological culture of India. He has also delivered several invited lectures on ancient Indian spiritual knowledge system by several organizations across India. He has written several articles to popularize science and technology among common people and delivered several lectures and discussion on TV and radio related to Ancient Science and Technology and other different topics. He has penchant for designing and developing eco-friendly sustainable products and technologies. He does dabble in Odiya literature and has two books in Odiya language to his credit. He is well known as a motivational speaker and is very popular among youth circles.

COURSE PLAN :

Week 1 : Introduction: Why are ancient Indian science and technology relevant today? What is science? How is it different from technology?

Week 2 : Philosophy of ancient Indian technology, how is different from modern technology? Ancient Indian Scientific methods.

Week 3 : Glimpses of ancient Indian science and technology?

Week 4 : Material Technology : Mining, Metals and Metallurgy, Iron Making and craftsmanship, Wootz Steel Technology

Week 5 : Extraction of Zinc in ancient India, Glass making, Bead making Techniques, Ceramic Technology

Week 6 : Water Harvesting Technology, Irrigation Systems

Week 7 : Town planning, Building construction, Sanitation

Week 8 : Agriculture and Textile Technology