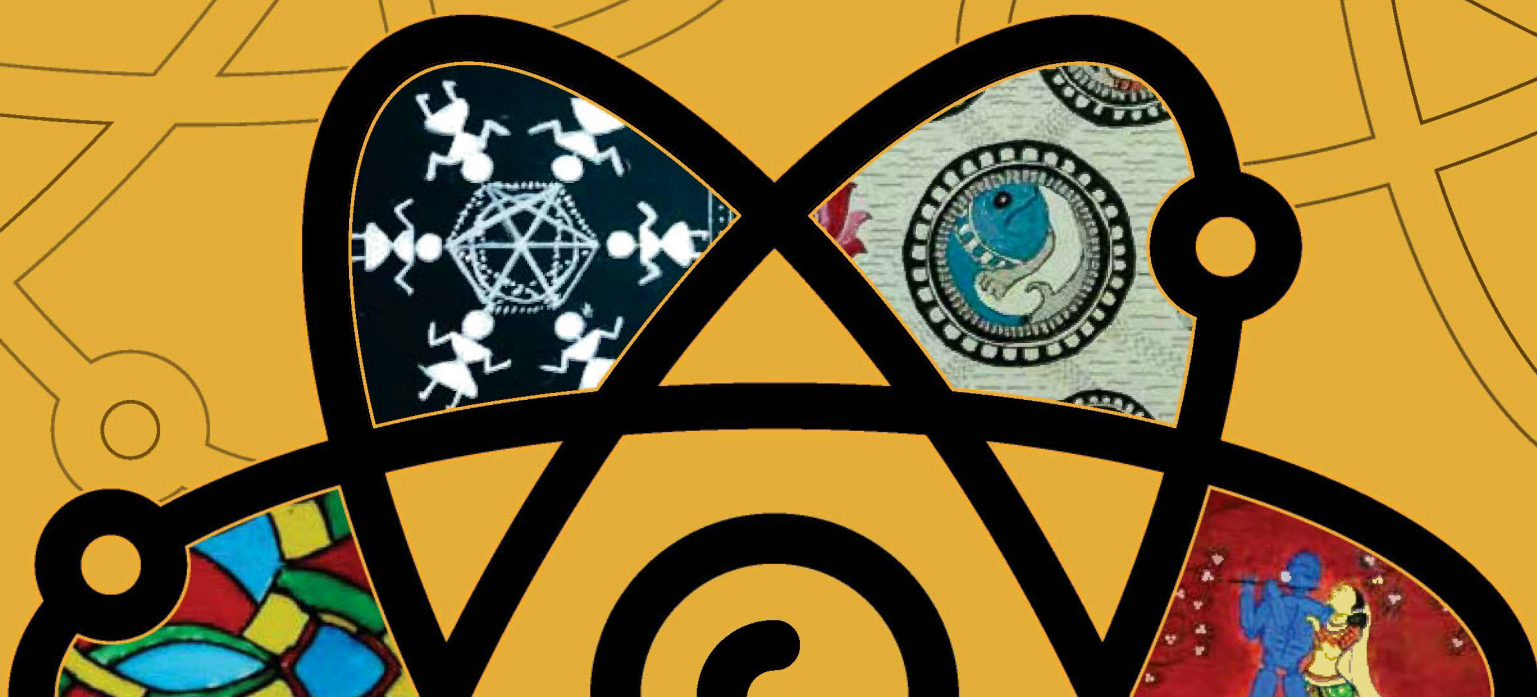




**IISc  
Press**

# **ARTING SCIENCE**

**Editor  
BITASTA DAS**



## Foreword - Merging the spirit of Art and Science

I am pleased to present this remarkable little book authored by my colleague Dr. Bitasta Das. Arting Science emerged out of a course that Bitasta teaches to the undergraduate students of Indian Institute of Science (IISc), Bangalore. The Indian Institute of Science is one of the oldest post-graduate universities in India. During most of its more than hundred year old history, IISc has focused almost exclusively on natural science and engineering. Social sciences and humanities (I will here label them collectively as ‘human sciences’) have never really been part of the academic programmes of the institute. Recognizing the value of cross-disciplinary interactions between the natural sciences, and human sciences, the Centre for Contemporary Studies was established in the year 2004. This Centre embarked on a unique experiment to bring to the campus, as guest faculty, some of the best scholars and practitioners from diverse disciplines such as history, economics, philosophy, sociology, law, literature, music, theatre, visual arts, cinema, ... the list is endless. The aim has been to create opportunities for meaningful interactions between different disciplines. We hope that such interaction will in turn provide opportunities for practitioners of different disciplines to re-examine the foundations of their own disciplines—a rarely practiced but most essential exercise. The centre organizes many one-off lectures, discussions, seminars and workshops and also offers an advanced course entitled “Production of Knowledge: A Comparison of Natural and Human Sciences”. The main focus of all these activities is on understanding the different modes of knowledge production, communication and utilization, in different disciplines and articulating the rationale, if any, for these differences.

Five years ago IISc embarked on yet another new experiment, by starting a four-year undergraduate programme in natural science and engineering. The Centre for Contemporary Studies has taken responsibility for developing the curriculum and organizing teaching through guest faculty, so that undergraduate students majoring in natural science take at least one course in the human sciences in each semester. In including human sciences in the curriculum of undergraduates majoring in science, we have deliberately avoided teaching the human sciences as yet another set of sub-disciplines. Instead we have attempted to use the human sciences courses to create the context in which students learn the natural sciences. In our system, students take three foundational courses before taking more advanced, specialized courses. The first foundational course is entitled “Ways of Knowing” and in this, students are exposed to diverse modes of knowledge production in different fields in the human sciences—we have experimented with disciplines such as history, ethnography, literature, psychology and sociology. This gives them the opportunity to reflect on modes of knowledge production in the natural science subjects that they are studying. The second foundational course entitled “Ways of Seeing” exposes the students to different modes of communication in different fields such as fiction, visual arts, theatre and cinema. Here again the goal is to make the students compare and contrast modes of communication in the natural sciences and in the human sciences and to reflect on the

differences and the reasons for these differences. In the third foundational course entitled “Ways of Doing” students are exposed to the idea (and challenge) of bringing scholarly knowledge to bear on real life problems—problems such as poverty alleviation, nature conservation, sustainable development, achieving social equity across genders, castes and ethnic groups. The inevitable comparison with the challenges of bringing knowledge produced in the natural sciences to bear on real life problems, is always most instructive. Following these three foundational courses, students are offered advanced courses through which they can begin to participate in knowledge production in the human sciences. Some examples of the themes we have rather successfully experimented with include Journalism, Democracy and Governance and Folk Arts.

In the course entitled “Mapping India through the Folk Arts”, Dr. Bitasta Das brings to bear her vast knowledge of and passion for Indian folk arts toward the goal of achieving a better understanding of India and its culture. In this course she makes the students aware of the diversity and geographical distribution of different genres of folk arts such as folk paintings, folk music, folk theatre and folk dance. In addition to learning about the folk arts, students get hands-on experience in recreating art from different parts of the country. What is truly unique about this course is that the students make remarkably successful attempts to depict and explain complex scientific concepts that they are studying in other natural science courses, through the medium of folk arts. Just to cite a few examples, students have depicted the life of a dolphin in Chilka lake using the medium of Oriya folk songs, water cycle in the environment using the medium of Malayalam boatmen songs, Darwin’s theory of evolution through the medium of shadow puppetry and have used folk theatre forms such as Raas Leela to highlight gender issues and Naqqal to highlight our anthropocentric view of the world. As we can see, this combines ‘ways of seeing’ as well as ‘ways of doing’ in a very creative way. In one year, groups of students were given assignments to use the diverse folk painting styles such as Madhubani, Warli, Gond, Cheriyal etc to depict scientific concepts. The assignments submitted by the students from this year have now been brought together by Bitasta Das in Arting Science, so that a larger audience might enjoy and be inspired by this experiment of merging the spirit of art and science.

It is my hope that our method and spirit of engaging with the human sciences in the curriculum of students studying natural sciences, is emulated by other teachers, curriculum developers and institutions.

Professor Raghavendra Gadagkar  
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