

Indian Science and Technology

VAC-11

This course is offered from Swayam Portal for more information please follows this link

https://onlinecourses.swayam2.ac.in/arp19_ap87/preview

This course will impart authentic knowledge of India's scientific and technological traditions and will show through case studies how some of them are still relevant in today's world. It would also try to provide an understanding of the socio-cultural and philosophical context in which the various scientific and technological ideas got developed in India and thereby help in repositioning India's contributions in science and technology. Course comprises of given in the outline of course.

Course layout

1. Introduction

- 1.1 Logic and methodology of Indian sciences
- 1.2 An overview of Indian contributions to sciences
- 1.3 An overview of Indian contributions to technology

2. Astronomy

- 2.1 Development of astronomy in India
- 2.2 Pancanga: Indian calendrical computations
- 2.3 The distinct features of Indian planetary models
- 2.4 Computation of eclipses: Its simplicity, elegance and efficiency
- 2.5 Observational astronomy in India

3. Mathematics

- 3.1 An overview of the development of mathematics in India
- 3.2 Mathematics contained in *Sulbasutras*
- 3.3 Combinatorial aspects of the *Chandassastra*
- 3.4 Solutions to the first and second order indeterminate equations
- 3.5 Weaving mathematics into beautiful poetry: Bhaskaracarya
- 3.6 The evolution of sine function in India
- 3.7 The discovery of calculus by Kerala astronomers

4. Ayurveda

- 4.1 History of Ayurveda
- 4.2 Rational foundations of Ayurveda
- 4.3 Textual sources in Ayurveda
- 4.4 Ayurveda and allied disciplines
- 4.5 Approach to health and disease in Ayurveda – 2 lectures
- 4.6 Approach to diet and nutrition in Ayurveda
- 4.7 Ayurveda and modern medicine
- 4.8 Ayurveda and Yoga

5. Technological development in India

5.1 Agriculture

- Origin and development
- Ancient crops
- Traditional practices

5.2 Water management>

- Overview
- Harappan water management
- Other case studies
- Medieval Water structures

5.3 Pottery

- Overview
- Technical aspects

5.4 Silpasastra: Architecture and Construction

- An introduction to *Silpasastra*
- Construction Technology

5.5 Metallurgy

- Copper/Bronze/Zinc
- Iron and Steel Technology in India