

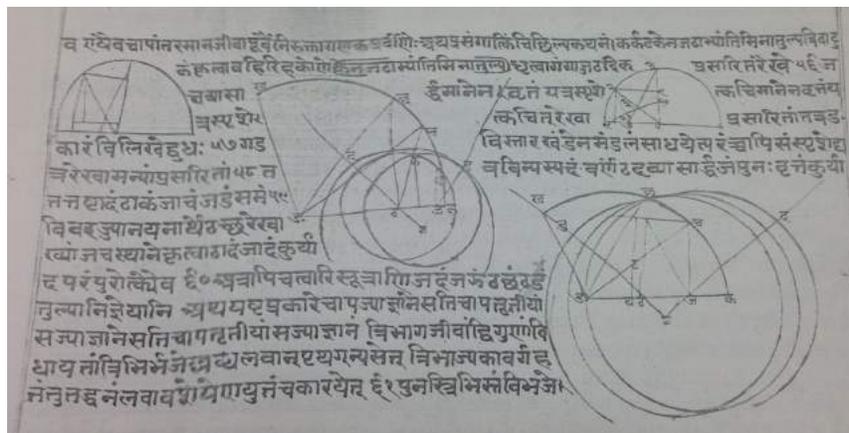
# Mathematics in Perspective

## A History of Mathematics from Ancient to Modern

### Overview

A study of the evolution of mathematical concepts is one of the most engaging and fascinating topics, as it is tantamount to the study of some of the finest intellectual achievements of the humanity. This course surveys the history of mathematics from the emergence of counting to the flourishing of calculus in select Eurasian cultures of inquiry, giving a glimpse of the challenges and crises that mathematicians have faced throughout history and the ways in which they tackled and resolved them. The various mathematical tools that are employed today in different branches of knowledge are indeed an outcome of the combined efforts of mathematicians of different “civilizations” over several millennia. The course aims to highlight the various trajectories, adopted by mathematicians inter-culturally and diachronically, of the development of mathematical thought.

It also balances an examination of the technical aspects of primary source material with various anthropological and archaeological approaches to get an idea of how the practice of mathematics is deeply connected with culture. Since no mathematician operates in vacuum, the tools conceived and constructed by them also mirrors the relationships between people and objects in that culture and thereby brings about a variation in the presentation of their results. Equal emphasis throughout this course will be placed on mathematical mastery of content as well as analytical and historical inquiry.



An excerpt from a manuscript of a seventeenth century work on mathematics and astronomy in Sanskrit

<b>Modules</b>	<b>Lectures and interactive tutorials : June 21-23, 25-26</b>
<b>You Should Attend...</b>	<ul style="list-style-type: none"><li>to learn about the history and philosophy of mathematics from a variety of sources — culled out from different civilizations, Babylonian, Greek, Chinese, Indian and Islamic — and to critically evaluate that information,</li></ul>

	<ul style="list-style-type: none"> <li>▪ to understand these developments in terms of the historical and cultural context in which they occurred, and their connection to the various concepts that are employed in modern mathematics,</li> <li>▪ to sufficiently equip yourselves to engage with peers and with lay people about developments and themes in the history and philosophy of mathematics.</li> </ul>
<b>Fees</b>	<p>The participation fees for taking the course is as follows:  <b>Students: 3000, Others 5000, Participants from abroad USD500</b>  The above fee includes all instructional materials, computer use for tutorials, 24hr free internet facility. The participants will be provided with accommodation on payment basis.</p>

## The Faculty



**Clemency Montelle** is faculty in the school of Mathematics and Statistics, University of Canterbury, Christchurch, New Zealand. Her research interests combine the rare skills of critical ancient languages, including Sanskrit, Ancient Greek Latin, Classical Arabic, and Cuneiform, with an extensive background in mathematics to critically edit, translate and write commentaries on ancient and medieval mathematical manuscripts that have never been studied before. She is currently working on numerical tables and computational practices in Sanskrit sources from the second millennium.



**K. Ramasubramanian** is a professor at the Cell for the Indian Science and Technology in Sanskrit, Department of Humanities and Social Sciences, Indian Institute of Technology Bombay, India. He holds a doctorate in theoretical physics, a master's in Sanskrit, and a bachelor's in engineering—a weird but formidable combination of subjects to do multi-disciplinary research. He is one of the authors who prepared detailed explanatory notes of the celebrated works *Ganita-yuktibhasha* (rationales in mathematical astronomy) *Tantrasangraha* and *Karana-paddhati*, which bring out the seminal contributions of the Kerala school of astronomers and mathematicians.

## Course Co-ordinator

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