

Spend J-Term 2010 in Peru

Enrollment Dates

March 24, 2009 - Opens

April 3 - Priority deadline

October 2 - Final deadline



MACHU PICCHU
INCA CITY IN PERU

Mathematics and Architectures of Incas in Peru (UMAIE)

The majority of people are unaware of the extent of the sophistication of the mathematics developed by the Incas of Peru. Incas thrived and perfected some of the most elaborate mathematics, astronomy, architecture, and communication systems in the world. Although they had no written language, they devised an amazing tool, the quipu, to record numerical data for accounting and for transmitting complex messages. Studies show that quipu employed knotted, colored cords, which were used to transmit information. The mathematics involved in quipu making is astonishing. Binary Coding in these knotted-strings is similar to the binary codes used in the early versions of our computers. One of our goals in this course is to study the mathematics of quipus and try to understand how they work. We will also learn about the Inca's calendar that was based on the observation of both the Sun and the Moon, and their relationship to the stars. Another aspect of their culture, which is filled with mathematics, is their architecture which was enhanced by use of symmetry in their art form and in their design of massive buildings that were built by Incas all throughout Peru, including the Inca city of Machu Picchu. We will study geometry and symmetry of Inca architecture. Finally, we will visit and study geometry of the mysterious Nazca Lines, which are a set of zoomorphic, phytomorphic, and geometric figures that appear engraved on the surface of the Nazca desert, a high arid plateau that stretches for 37 miles.



- Prerequisites: *Math 200 or 210 or permission of instructors*
- Maximum participants: *26*
- Counts toward: *Math 298 or Engineering 298*
- Fee: *To be determined (around \$4,000)*
- Fulfills: *Human Diversity*



Trip Leaders

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