GEK1517 Mathematical Thinking

--- Course Description ---

List of Topics to be Covered:

The Notion of Proof in Mathematics.

Three Models: The Definition-Theorem-Proof model of Mathematics (with examples from Euclidean Geometry and others). The Definition-Speculation-Theorem-Proof model of Mathematics (with examples). The Idea-Criticism model of Mathematics.

Major Facilities for Mathematical Thinking: Human Language; Vision, Spatial Sense and Motion Sense; Logic and Deduction; Intuition, Association and Metaphor; Stimulus Response; Process and Time.

Critical Reasoning: Conjectures and Refutations.

Post Critical Facets: Fact ≠ Knowledge; Personal Use of Imagination, Heritage/Tradition, Connoisseurship, Conviviality and Serendipity.

Lectures: WED & FRI 6PM -- 8PM in LT27. Tutorials: To be finalized by the second week. Tutorials starts on the THIRD week.

Assessment:
* One Open Book Test (about 40 min; 20%). Date to be announced at least two weeks in advance.

* Final Exam (80%): can bring in one (1) hand-written (on both sides) A-4 size help sheet. Date of the Exam: Wednesday, 24-Nov-2010 (Afternoon) (please double check).

Contact:
Name: Leung Man Chun
Tel No: 6516 2758
Office: (Dept. of Math.) S-17-06-01
Email: matlmc@nus.edu.sg
Homepage: http://www.math.nus.edu.sg/~matlmc