Mathematics/Science 380 – History of Mathematics
Trent University, 2002–2003

Fall Projects
Due on Friday, 6 December, 2002.

Possible topics for projects in this course mostly fall into two categories, the mathematical and the historical, for which I have somewhat different expectations. For the fall project, I would prefer that we stick to topics which have some connection to the history of mathematics before about 1000 A.D.

The Mathematical. A project on a mathematical topic in MATH 380 would most likely boil down to choosing some piece of mathematics done at some point in history and presenting it. For example, one might pick a problem and look at how people tried to solve it and what that led to. This would mean writing an exposition on the topic in question, with some historical background for context.

The range of possible topics, even if we confine ourselves to problems and results from before 1000 A.D., is very large. The text has a decent listing of the highlights of mathematics from this period, so feel free to to check it for possible topics. Other good books to check out include:

The Heritage of Thales, by W.S. Anglin & J. Lambeck
Springer Verlag, 1995,   ISBN 0-387-94544-X

An Introduction to the History of Mathematics (3rd edition), by Howard Eves.
Holt, Rinehart and Winston, New York, 1969.

... as well those mentioned below.

The Historical. Projects on a historical topic could take a number of different tacks. The most straightforward would probably be a narrative of the activities and influence of some mathematician or group of mathematicians – which would necessarily involve describing some of their mathematics! – making due allowance for gaps and inconsistencies in the historical record and the difficulties of inferring whether some event or person affected another. For this sort of project, you could also compile a reasonable set of possible individuals or groups to work on by consulting the text. A variation on this theme which would comes close to the mathematical sort of project would be to tell how some body of results or techniques evolved.

A more ambitious sort of project would be one which tried to look at how the development of mathematics influenced other things, such as the development of philosophy, or was itself affected by them. (One cute variation on this would be to write an alternate history working out the probable effects of a change in some part of the history of mathematics. If you go this route, do try to keep the change as plausible as you can!) Books which might be useful include:

A History of Mathematics (2nd edition), by C.B. Boyer and revised by U.C. Merzbach.
John Wiley & Sons, New York, 1991.
The History of Mathematics, by Roger Cooke.
John Wiley & Sons, Inc., New York, 1997, ISBN 0-471-18082-3
Mathematical Thought from Ancient to Modern Times, Vol. I, by Morris Kline.
Oxford University Press, New York, 1972.
Mathematics in Western Culture, by Morris Kline.
Oxford University Press, New York, 1953.

Whatever sort of project you do, please clear your choice of topic with me, before the Fall Reading Week, if at all possible. The minimum length ought to be about 2000 words (about eight typed pages), and I do expect decent grammar, spelling, and style. (On the bright side, I'm not too fussy about format and bookkeeping, such as how you handle footnotes and/or endnotes, so long as you're consistent and what you've got is readable.) I would be happy to read and criticize outlines and drafts if you produce them early enough so that I have the time to read and think about them.