	GE course title	Mathematics across Cultures and Time
	No. of credits	3
	Contact hours	39
	Medium of Instruction	Cantonese
	Level	1

A. Course description, aims and objectives

This module provides opportunities for students to cultivate perspectives on the historical, philosophical and sociological dimensions of mathematics, and on the impact of mathematics on human cultures. Students taking this module are not assumed to have any pre-requisite background knowledge of mathematics.

B. Course Intended Learning Outcomes ($CILO_s$)

CILOs	On completion of this course, students will be able to:
1.	Explore the origins of mathematics concepts and ideas in ancient civilizations from a historical point of view;
2.	Understand the philosophical aspects of mathematics in different cultures, such as ancient Greece and China; and
3.	Realize the different roles of mathematics in science, technology and modern societies and their influence to our societies.

C. Teaching & Learning Activities

	Teaching & Learning Activities	**CILOs**
1.	Lectures, case studies and group discussion	1,2,3

D. Assessment

	Assessment Tasks	**Weighting (%)**	**CILOs**
1.	Brief presentations (2-3 presentations)	30%	1, 2, 3
2.	Final Project Report: An individual project report on an approved topic related to one or more of the above five areas. (2500-3000 words)	70%	1, 2, 3

E. Text and reference materials – hard copy / online

1.	Bunt, Jones & Bedient. (1988). *The Historical Roots of Elementary Mathematics*. New York: Dover.

2.	Devlin, K. (2000). The Language of Mathematics: Making the invisible visible. New York: Freeman.
3.	Emmer, M. (2004). *Mathematics and Culture*. New York: Springer Verlag.
4.	Gazale, M. (2000). *Numbers: From Ahmes to Cantor*. New Jersey: Princeton University Press.
5.	Resnikoff, H.L. & Wells, R.O. (1984). *Mathematics in Civilization*. New York: Dover.
6.	Selin, H. (ed.) (2000). *Mathematics across Culture*. London: Kluwer.
7.	Vincent, R. (2003). *Geometry of the Golden Section*. Marseille: Chalagam.
8.	張祖貴（1995）：《數學與人類文化發展》，廣東，廣東教育出版社。
9.	鄭毓信、王宪昌、蔡仲（2000）：《數學文化學》，成都，四川教育出版社。
10.	張順燕編（2004）：《數學的美與理》，北京，北京大學出版社。
11.	齊民友譯（2004），《現代世界中的數學》，上海，上海教育出版社。
12.	http://www-groups.dcs.st-and.ac.uk/history/Indexes/HistoryTopics.html (St. Andrews University's website on history of mathematics)
13.	http://www.math.sinica.edu.tw/media/ 《數學傳播》期刊

Feedbacks from Local Academics and Fulbrighters

The proposer may consider using some ideas there. Here are some suggestions. The instructors could use a variety of ways to assess students including:

1. Requiring students to do peer evaluations (to make sure that the students pay attentions to the presentations of classmates, and learn how to give constructive comments and suggestions to peers, which is a useful skill for to work with other people. The presenters can also prepare self-evaluations mentioning some after thoughts and future plans of improvement, which is useful way to improve oneself.

2. Requiring the students to set some simple questions related to their presentations as homework to test how well their classmates understand their presentations.

3. The instructor can set up some online discussion so that students can have more opportunities to express their opinions.

With the above, the assessment could be based on presentations, evaluations and self evaluations, simple homework, and final project. In particular, the instructor could give a few sample presentations, and ask the students to practice how to give constructive comments to presenters, and discuss how to give a good presentation.

This may require a lot of work, but will provide a good GE course if done well.