MATH 4110/5110 SPRING 2017
ONLINE HISTORY OF MATHEMATICS

MATERIALS

Course materials will be available online via the course website on the BGSU Blackboard.

Reference Textbook: *The History of Math: An Introduction,* 7th Ed by David M. Burton.

Throughout the semester, mathematics topics will be examined based on historic points of view. Each topic will be explored within the context of its historical progression. Specifically, the course will focus on the following goals:

OBJECTIVES:

1. Human side of mathematics and its development with an emphasis on the fact that mathematics has always been part of human cultures, but its role has changed throughout history.

2. An overview of origin of mathematics in which how various concepts fit together and where the important ideas come from will be explicated.

3. Improving mathematics problem solving and analysis skills those are proper for effective teaching and communicating mathematics.

4. Learning proper ways to use mathematics resource materials in the library and on the Internet.

5. Becoming aware of different ways to use the history of mathematics in the future teaching.

CONTENTS COVERED:

1. The origins of mathematics.
2. Egyptian and Babylonian mathematics.
3. Mathematics of the early Greeks.
4. Mathematics of the Renaissance: The algebra and trigonometry.
5. The calculus.

INSTRUCTIONAL METHODS

This course will be run online and primarily in a self-learning style. Readings and explorations will be the center of the course. Explicit reading assignments will be assigned on a bi-weekly basis. An overall schedule gives you an opportunity to read in advance if possible, and also to organize your schedule.

The readings will include two different types: descriptive papers about mathematics, and historical approach and problem solving by different mathematicians. It is important that the reading is to be done actively, with pencil and paper at hand to check the author's assertions, to consider examples, and to do computations.

EXPECTATIONS

It is expected that each individual student will keep up with the course reading assignments, turn in homework, paper, and exam on time, post assigned work on the discussion forums in a creative but responsible way, and participate fully in virtual group discussions once being

requested. The quality of your experience in this course depends on *everyone* striving to meet these expectations.

If you have any difficulty with the course material and/or assignment, you are suggested to contact your professor via the email dnguyen@bgsu.edu at your earliest time.

HOMEWORK

Homework will be assigned at the end of selected chapters. Homework paper should be submitted via **BGSU4110@gmail.com** by midnight on the due date.* (See the instructions on how to submit homework assignments).

DISCUSSIONS

Discussion topics for each chapter will be posted two to three days before each homework assignment is due. Each one of you is required to participate in at least 1 discussion topic on each chapter. We have 5 reading chapters throughout the semester.

GROUP WORK

Group work will be assigned after all homework assignments have been completed.

PROJECT

A list of topics will be provided. Each individual one will be allowed to select and sign up for one topic for his or her project.

GRADE*

Homework and Reading Assignments	50%
Discussions	10%
Group Work	10%
Final Project	30%
Total	100%

REFERENCES

- *History Topics Index*

  http://turnbull.dcs.st-and.ac.uk/history/Indexes/HistoryTopics.html

- *A History of Mathematics*, 5th Ed., Florian A. Cajori, Chelsea, New York, 1991.

- *A History of Mathematics - An Introduction*, 2nd Ed. Victor Katz, Addison-Wesley, 1998.

- *Elements of the History of Mathematics*, Nicolas Bourbaki, Springer-Verlag, New York, 1993.

- *The History of Mathematics: An Introduction,* 5th Ed., David Burton, McGraw Hill, 2003.

- *History of Mathematics: A Supplement*, Craig Smorynski, Springer, 2008. Available online thru BGSU library at http://ebooks.ohiolink.edu/xtf-ebc/view?docId=tei/sv/9780387754819/9780387754819.xml&query=&brand=default

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* Absolutely no late work will be graded