

UTEACH - STEM 3815

Perspectives on

Science and Mathematics

Spring 2019

Instructor: Dr Anne Gaquere-Parker

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Class time: Online with 3 face-to-face meetings from 5.30pm to 7.30pm
in TLC 2-105 on Thursdays: 01/31/2019, 02/07/2019 and 04/11/2019.

Office Hours: T, R: 11.00 am – 2.00 pm, W: 11.00 am – 3.00 pm

Please keep up with the published calendar on courseden.

Course Outline

This course will discuss history of science and mathematics. It will help students understand how science and mathematics have evolved throughout time and learn some important historical facts. This UTeach course will help students include historical facts into science and math lesson plans that they will design and present to the rest of the class during the face-to-face meetings or share the power point online on the discussion board. Content knowledge will be acquired using power point notes, assigned readings and videos. Major advances in physics, chemistry, biology and geosciences will be discussed as well as important events in the history of mathematics. Their impact on society and the impact of society on the science will also be discussed. This course will also enhance students' scientific and mathematical literacy.

Learning Outcomes

After successful completion of the course, the student will be able to:

- describe the important and relevant historical developments of science and mathematics
- discuss the controversial issues associated with the historical development of science and mathematics
- design middle and high school science and mathematics lessons that include some of this course's contents as well as library-based material
- present to an audience 5E lessons plans in science and mathematics that include historical material
- evaluate lesson plans

Materials and requirements

- Required: A Little History of Science Hardcover –2012, by William Bynum (Author), Publisher: Yale University Press (November 6, 2012), ISBN-10: 0300136595, ISBN-13: 978-0300136593
Other documents will be uploaded on D2L/courseden. Check on a daily basis for updates.

Grading

The final grade will be based on:

Postings on the discussion board including some 5E lesson plans (**35%**), active participation on January 31 (**5%**) and active participation on February 7th (**5%**), online quizzes (**20%**), final expository paper (**10%**), final 5E lesson plan (**25%** divided as: oral presentation of final lesson plan 10% on April 11th, quality of power point 10% and annotated bibliography 5%).

➤ 90%: A, 80 – 89%: B, 70 – 79%: C, 60 – 69%: D, < 60%: F

Late submission: Unless an extension is granted under very special circumstances and well in advance, 10 points will be deducted by day an assignment is turned in after the due date.

Lesson plan: Students will design 5E lesson plans that will be shared on the discussion board, peer reviewed and graded by the instructor. In addition, one final lesson plan related to the annotated bibliography and the final expository paper will be presented to the class during the last face-to-face meeting (Thursday April 11th). Ideas for topics for the last presentation and the final paper will be provided and the topic chosen has to be approved by the instructor. No video allowed for the presentation.

Final paper: The final expository paper will be turned in electronically by Wednesday May 1st, by 8 am, through D2L. More details will be provided on the discussion board.

Annotated bibliography: One annotated bibliography will be required per student for the semester by Monday February 18th, 8am. The topic will be chosen among a list of topics provided by the instructor or chosen by the student with approval of the instructor. This topic should be the same as the final paper and final 5E oral presentation.

Communication: Communication will be done through my.westga.edu email address.

Extra credit: There is no extra credit opportunity in this class.

Policy on Cheating/ Plagiarism

Cheating and/or plagiarism will not be tolerated in this course and will result in a failing grade for the assignment, exam and/or the class. No electronic device will be allowed during the proctored exams (cell phone, text messenger...). Blatant examples of cheating include using books, notes, or other sources not expressly allowed during exams; copying on homework, assignments; using any form of assistance if instructed to produce work individually; and knowingly assisting another student to engage in any of these behaviors. Examples of plagiarism include failing to cite written material that is directly quoted or paraphrased from another source, or failing to give credit for use of other's ideas, pictures, graphs, diagrams, or figures. Plagiarism can be avoided by following the

rules for citation.

More information about the course policies are presented on the discussion board and are considered as part of this syllabus. Please read them carefully.

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