

**UTEACH - STEM 3815**

**Perspectives on**

**Science and Mathematics**

**Spring 2018**

Instructor: Dr Anne Gaquere-Parker

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**Class time:** Online with 3 face-to-face meetings:

1. Thursday March 1<sup>st</sup>: 6pm to 9pm in Burson center
2. Saturday March 10<sup>th</sup> 9am to noon, UWG campus, room TBA
3. Saturday April 14<sup>th</sup> 9am to 2pm, UWG campus, room TBA

**Office Hours:** T, R: 8.15-9.15 am and 10.45 am-12.15pm,  
W: 9.00 am – 2pm

**Course Outline**

This course will discuss history of science and mathematics throughout the ages. 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 short 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' general scientific knowledge, thus increasing their scientific 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**

No textbook, documents will be uploaded on D2L/courseden. Check on a daily basis for updates.

### **Grading**

The final grade will be based on: meaningful participation on the discussion board (20%), online quizzes (10%), midterm (10%), final exam (10%), 5E lesson plans (25% as an average of all the grades for all the lesson plans), oral presentation of final lesson plan (10% of overall grade divided into several parts), final expository paper (10%), one 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.

*Exams:* Midterm (Saturday March 10th at 9am, 60 minutes) and final exam (Saturday April 14th at 9am, 60 minutes): Students will take in-class proctored exams covering the materials studied in

the course either with the reading assignments, power point or videos.

*Lesson plans:* A large part of the grade comes from lesson plans. Students will design 5E lesson plans that will be shared on the discussion board, peer reviewed and graded by the instructor. Also some of the lesson plans will be graded by their peers, some lesson plans will be returned for revisions, some will not. 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 (Saturday April 14<sup>th</sup>) and will count for 10% of the final course grade. 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.

*Final paper:* The final expository paper will be turned in electronically by Friday May 4<sup>th</sup>, 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 Wednesday February 21st, 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 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.