EDUC 5386 Syllabus: "History of STEM Education": Fall 2020

INSTRUCTOR INFORMATION
Professor of Mathematics Education, Dr. John Lamb Ph.D, BEP 248, UT Tyler School of Education,
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OFFICE HOURS: Mondays 1:00-2:00, Tuesdays 10:00-11:00, and Wednesdays 10:00-11:00 or by
appointment

Last Day to Withdraw from Courses: November 2, 2020

COURSE FORMAT AND DESCRIPTION
This course is completely online. This course addresses the historical underpinnings of the teaching and
learning of Science, Technology, Engineering, and Mathematics (STEM) content and pedagogical practices
both individually and collectively since 1800AD.

COURSE LEARNING OBJECTIVES
*The student is expected to examine the historical underpinnings of today's integrated STEM education
practices.
   a.   (Texas Educator Standards: 1ai, 1aiii, 1bi, and 1cii; 2bi, 2ciii)
   b.   (INTASC Standards: 1, 2, and 7)

*The student is expected to construct a timeline of historical events that have helped to shape today's
STEM education practices.
   c.   (Texas Educator Standards: 1ai, 1aiii, 1bi, and 1cii; 2bi, 2ciii)
   d.   (INTASC Standards: 1, 2, and 7)

*The student is expected to synthesize available literature examining the history of teaching and learning
STEM content for underrepresented populations.
   e.   (Texas Educator Standards: 1ai, 1aii, 1aiii, 1bi, 1biii and 1cii; 2ai, 2bi, 2bii, 2biii, and
        2ciii; 3ai, 3aii, 3aiii, 3bi, 3bii, 3biii, 3ci, 3cii, and 3ciii; 5ai; 6ai)
   f.   (INTASC Standards: 1, 2, 4, 5, 7, and 8)

*The student is expected to critically evaluate the influence a historical leader in STEM has had on STEM
Education.
   a.   (Texas Educator Standards: 1bii 1biii, 1ci; 2bi, 2bii, 2biii, and 2ciii; 3ai, 3aii, 3aiii, 3bi,
        3bii, 3biii, 3ci, 3cii, and 3ciii)
   b.   (INTASC Standards: 1, 2, 4, 5, and 8)

COURSE TEXTBOOK
   Bybee, R. W. (2013). *The Case for STEM Education: Challenges and Opportunities*. Arlington, VA:
   National Science Teachers Association. ISBN978-1-936959-25-9

COURSE EVALUATION AND REQUIREMENT DESCRIPTION
*Talking Head Lecture Quizzes   20%
-- The instructor will present content related to specific article readings and chapters from the text called Talking
Head Lectures. A quiz will be associated with each lecture. Each quiz will have multiple choice and True/False
questions related to the selected readings and content discussed in the lectures.
*Talking Head Student Reflections   20%
--At the end of the first four and the last module, students will be expected to create, publish, and share a talking
head reflection related to the content of those modules. There will be guiding questions for each Talking Head
Student Reflection assignment.

*Historical Timeline   20%
--Science Technology Engineering and Mathematics instruction throughout the last two centuries has evolved due to scientific accomplishments and inventions as well as pedagogical theory. Students will be expected to construct a timeline of historical people, programs, events, etc. since 1893 AD and the Committee of TEN that helped shape STEM education, as we currently understand it.
*Book Report   20%
--Students will be required to select a Biography or Autobiography of an individual who has been influential in STEM education during any time. The students will then create a video Book Report no less than 5 minutes and not to exceed 10 minutes in length that summarizes the content of the book and provides the students' reaction/reflection to its content.
*Oral History Research Report   20%
--Students will be grouped into pairs. Each student in each pair will conduct two interviews with individuals who's story would help the students answer a research question related to STEM education for underrepresented populations (i.e., women, non-white, low-SES, etc.). Each group is expected to research literature and use their interview data to construct a paper synthesizes both the review of literature and oral-history data.

A=90-100%   B=80-89%   C=70-79%   D=60-69%   F=0-59%
Last day to withdraw is November 6th

Course Policies (attendance, make-up assignments, etc.)
     Online participation is imperative in this course. Assignments in this course are launched at specific times and deadlines are final. Deadlines are set to provide students ample time to complete assignment requirements and maintain an appropriate pace for student to successfully complete the course content.
     All assignments are due on or before the dates provided in the **Topical Outline**. Each written assignment must be typewritten and submitted in Blackboard. No email attachments of assignments will be accepted. Submission deadlines are final and links will be removed after deadline has expired. NO LATE assignments will be accepted unless a valid pre-approved or medical reason has been discussed with the professor. If an assignment is not completed on time due to a documented illness, funeral, or other university related activity, then a make-up date can be scheduled with the professor. All late assignments or non-submitted assignments will receive a score of zero points.
     Note that the Canvas program TurnItIn will be used during the semester to make sure no assignment has been plagiarized. This program will check your assignment against their database of resources then produce a percentage match. This percentage will tell me how much of your assignment matches the resources available. If an assignment is plagiarized, then the student will receive a zero for the assignment. Academic dishonesty is not tolerated. The professor reserves the right to assign a failing grade for the course and report student behavior to university officials if offenses are egregious or occur more than once.

UNIVERSITY POLICIES

UT Tyler Honor Code
Every member of the UT Tyler community joins together to embrace: Honor and integrity that will not allow me to lie, cheat, or steal, nor to accept the actions of those who do.

For a full list of university policies including information related to the topics listed below, click here.
- Students Rights and Responsibilities
- Campus Carry
- Tobacco-Free University
- Grade Replacement/Forgiveness and Census Date Policies
- State-Mandated Course Drop Policy
- Disability Services
- Student Absence due to Religious Observance
- Student Absence for University-Sponsored Events and Activities
- Social Security and FERPA Statement
- Emergency Exits and Evacuation
- Student Standards of Academic Conduct

UT Tyler Resources for Students:

- UT Tyler Writing Center (903.565.5995), writingcenter@uttyler.edu, http://www.uttyler.edu/writingcenter/
- UT Tyler Tutoring Center (903.565.5964), tutoring@uttyler.edu, https://www.uttyler.edu/tutoring/
- The Mathematics Learning Center, RBN 4021, This is the open access computer lab for math students, with tutors on duty to assist students who are enrolled in early-career courses.
- UT Tyler Counseling Center (903.566.7254) https://www.uttyler.edu/counseling/

University Guidelines, Links and Policies

COLLEGE OF EDUCATION AND PSYCHOLOGY (CEP) VISION AND MISSION

Vision: The College of Education and Psychology is nationally recognized and respected for its academic programs and opportunities. It is a center of academic excellence, scholarly inquiry, and public service. The College prepares leaders to meet the critical challenges of the 21st Century through productive contributions to local and global communities and toward individual and cultural equity.
Mission: The mission of the College of Education and Psychology is to provide a positive environment that fosters the acquisition of knowledge and skills. The mission is individually and collectively realized through a community of scholars that contributes to knowledge through scholarly inquiry; organizes knowledge for application, understanding and communication; and provides leadership and service. We affirm and promote global perspectives that value individual and cultural diversity to enhance learning, service, and scholarship.

UT TYLER'S SCHOOL OF EDUCATION STANDARDS FOR EDUCATOR PREPARATION PROGRAMS

Texas Education Standards: The School of Education are committed to teaching and implementing the Texas Educator Standards at the highest level. The School of Education faculty use the Texas Education Standards, along with the Interstate New Teacher Assessment and Support Consortium (InTASC) standards used by educator preparation programs throughout the United States.

The list of Texas Education Standards can be accessed here.

Access the Code of Ethics and Standard Practices for Texas Educators.