EDUC 5306 Syllabus: “History of STEM Education”: Fall 2017

INSTRUCTOR INFORMATION
Associate Professor of Mathematics, Dr. John Lamb Ph.D, BEP 247D, UT Tyler School of Education, 903-566-7390, jlamb@uttyler.edu

OFFICE HOURS: Mondays 11:00-12:00, Tuesdays 11:00-12:00, and Wednesdays 11:00-12:00 or by appointment

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.
* The student is expected to construct a timeline of historical events that have helped to shape today’s STEM education practices.
* The student is expected to synthesize available literature examining the history of teaching and learning STEM content for underrepresented populations.
* The student is expected to read and summarize a biography or autobiography of a historically influential person in STEM education.

COURSE TEXTBOOK

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<thead>
<tr>
<th>COURSE LEARNING OBJECTIVES</th>
<th>Standards</th>
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| *The student is expected to examine the historical underpinnings of today’s integrated STEM education practices.* | Master Mathematics Teacher Standards: V-VI  
Master Science Teacher Standards: II, VI and VII  
Master Technology Teacher Standards: I and IV |
| *The student is expected to construct a timeline of historical events that have helped to shape today’s STEM education practices.* | Master Mathematics Teacher Standards: V-VI  
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| *The student is expected to read and summarize a biography or autobiography of a historically influential person in STEM education.* | Master Mathematics Teacher Standards: V-VI  
Master Science Teacher Standards: II, VI and VII  
Master Technology Teacher Standards: I and IV |

COURSE EVALUATION AND REQUIREMENT DESCRIPTION

*Talking Head Lecture Quizzes* 100 points
-- 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* 100 points
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 100 points*
--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 100 points*
--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 100 points*
--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 Outline:

<table>
<thead>
<tr>
<th>Date</th>
<th>Module</th>
<th>Chapters</th>
<th>Due End of Day (11:59 PM)</th>
<th>Assignments</th>
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<tr>
<td>Week 1: 8/28</td>
<td></td>
<td>Chapters 1, 2, and 3</td>
<td>September 18th</td>
<td>Reading Quizzes, Talking Head Student Reflection #1</td>
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<tr>
<td>Week 2: 9/5</td>
<td>Module 1</td>
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<td>Week 3: 9/11</td>
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<td>Chapters 4 and 5</td>
<td>October 2nd</td>
<td>Reading Quizzes, Talking Head Student Reflection #2</td>
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<tr>
<td>Week 4: 9/18</td>
<td>Module 2</td>
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<td>Week 5: 9/25</td>
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<td>Chapters 6 and 7</td>
<td>October 23rd</td>
<td>Reading Quizzes, Timeline, Talking Head Student Reflection #3</td>
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<td>Week 6: 10/2</td>
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<td>Week 7: 10/9</td>
<td>Module 3</td>
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<td>Week 8: 10/16</td>
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<td>Chapters 8, 9, and 10</td>
<td>November 13th</td>
<td>Reading Quizzes, Talking Head Student Reflection #4</td>
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<td>Week 9: 10/23</td>
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<td>Week 10: 10/30</td>
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<td>Due End of Day (11:59 PM)</td>
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<td>Week 11: 11/6</td>
<td>Module 4</td>
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<td>Week 12: 11/13</td>
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<td>Week 13: 11/27</td>
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<td>Week 14: 12/4</td>
<td>Module 5</td>
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<td>Book Report, Oral History Report</td>
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<td>Week 15: Finals</td>
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<td>Due End of Day (11:59 PM)</td>
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### References:


**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.

Students Rights and Responsibilities
To know and understand the policies that affect your rights and responsibilities as a student at UT Tyler, please follow this link: http://www.uttyler.edu/wellness/rightsresponsibilities.php

Campus Carry
We respect the right and privacy of students 21 and over who are duly licensed to carry concealed weapons in this class. License holders are expected to behave responsibly and keep a handgun secure and concealed. More information is available at http://www.uttyler.edu/about/campus-carry/index.php

Tobacco-Free University
All forms of tobacco will not be permitted on the UT Tyler main campus, branch campuses, and any property owned by UT Tyler. This applies to all members of the University community, including students, faculty, staff, University affiliates, contractors, and visitors. Forms of tobacco not permitted include cigarettes, cigars, pipes, water pipes (hookah), bidis, kretaks, electronic cigarettes, smokeless tobacco, snuff, chewing tobacco, and all other tobacco products. There are several cessation programs available to students looking to quit smoking, including counseling, quitlines, and group support. For more information on cessation programs please visit http://www.uttyler.edu/tobacco-free

Grade Replacement/Forgiveness and Census Date Policies
Students repeating a course for grade forgiveness (grade replacement) must file a Grade Replacement Contract with the Enrollment Services Center (ADM 230) on or before the Census Date of the semester in which the course will be repeated. (For Fall, the Census Date is September 11.) Grade Replacement Contracts are available in the Enrollment Services Center or at http://www.uttyler.edu/registrar. Each semester’s Census Date can be found on the Contract itself, on the Academic Calendar, or in the information pamphlets published each semester by the Office of the Registrar.

Failure to file a Grade Replacement Contract will result in both the original and repeated grade being used to calculate your overall grade point average. Undergraduates are eligible to exercise grade replacement for only three course repeats during their career at UT Tyler; graduates are eligible for two grade replacements. Full policy details are printed on each Grade Replacement Contract.

The Census Date (September 11) is the deadline for many forms and enrollment actions of which students need to be aware. These include:
- Submitting Grade Replacement Contracts, Transient Forms, requests to withhold directory information, approvals for taking courses as Audit, Pass/Fail or Credit/No Credit.
- Receiving 100% refunds for partial withdrawals. (There is no refund for these after the Census Date)
- Schedule reinstatements (section changes, adding a new class, dropping without a “W” grade)
- Being reinstated or re-enrolled in classes after being dropped for non-payment
- Completing the process for tuition exemptions or waivers through Financial Aid

State-Mandated Course Drop Policy
Texas law prohibits a student who began college for the first time in Fall 2007 or thereafter from dropping more than six courses during their entire undergraduate career. This includes courses dropped at another 2-year or 4-year Texas public college or university. For purposes of this rule, a dropped course is any course that is dropped after the census date (See Academic Calendar for the specific date). Exceptions to the 6-drop rule may be found in the catalog. Petitions for exemptions must be submitted to the Enrollment Services Center and must be accompanied by documentation of the extenuating circumstance. Please contact the Enrollment Services Center if you have any questions.

Disability Services
In accordance with Section 504 of the Rehabilitation Act, Americans with Disabilities Act (ADA) and the ADA Amendments Act (ADAAA) the University offers accommodations to students with learning, physical and/or psychiatric disabilities. If you have a disability, including non-visible disabilities such as chronic diseases, learning disabilities, head injury, PTSD or ADHD, or you have a history of modifications or accommodations in a previous educational environment you are encouraged to contact the Student Accessibility and Resources office and schedule an interview with the Accessibility Case Manager/ADA Coordinator, Cynthia Lowery Staples. If you are unsure if the above criteria applies to you, but have questions or concerns
please contact the SAR office. For more information or to set up an appointment please visit the SAR office located in the University Center, Room 3150 or call 903.566.7079. You may also send an email to cstaples@uttyler.edu

Student Absence due to Religious Observance
Students who anticipate being absent from class due to a religious observance are requested to inform the instructor of such absences by the second class meeting of the semester.

Student Absence for University-Sponsored Events and Activities
If you intend to be absent for a university-sponsored event or activity, you (or the event sponsor) must notify the instructor at least two weeks prior to the date of the planned absence. At that time the instructor will set a date and time when make-up assignments will be completed.

Social Security and FERPA Statement:
It is the policy of The University of Texas at Tyler to protect the confidential nature of social security numbers. The University has changed its computer programming so that all students have an identification number. The electronic transmission of grades (e.g., via e-mail) risks violation of the Family Educational Rights and Privacy Act; grades will not be transmitted electronically.

Emergency Exits and Evacuation:
Everyone is required to exit the building when a fire alarm goes off. Follow your instructor’s directions regarding the appropriate exit. If you require assistance during an evacuation, inform your instructor in the first week of class. Do not re-enter the building unless given permission by University Police, Fire department, or Fire Prevention Services.

Student Standards of Academic Conduct:
Disciplinary proceedings may be initiated against any student who engages in scholastic dishonesty, including, but not limited to, cheating, plagiarism, collusion, the submission for credit of any work or materials that are attributable in whole or in part to another person, taking an examination for another person, any act designed to give unfair advantage to a student or the attempt to commit such acts.

(i) “Cheating” includes, but is not limited to:
- copying from another student’s test paper;
- using, during a test, materials not authorized by the person giving the test;
- failure to comply with instructions given by the person administering the test;
- possession during a test of materials which are not authorized by the person giving the test, such as class notes or specifically designed “crib notes”. The presence of textbooks constitutes a violation if they have been specifically prohibited by the person administering the test;
- using, buying, stealing, transporting, or soliciting in whole or part the contents of an unadministered test, test key, homework solution, or computer program;
- collaborating with or seeking aid from another student during a test or other assignment without authority;
- discussing the contents of an examination with another student who will take the examination;
- divulging the contents of an examination, for the purpose of preserving questions for use by another, when the instructors has designated that the examination is not to be removed from the examination room or not to be returned or to be kept by the student;
- substituting for another person, or permitting another person to substitute for oneself to take a course, a test, or any course-related assignment;
- paying or offering money or other valuable thing to, or coercing another person to obtain an unadministered test, test key, homework solution, or computer program or information about an unadministered test, test key, home solution or computer program;
- falsifying research data, laboratory reports, and/or other academic work offered for credit;
- taking, keeping, misplacing, or damaging the property of The University of Texas at Tyler, or of another, if the student knows or reasonably should know that an unfair academic advantage would be gained by such conduct; and
- misrepresenting facts, including providing false grades or resumes, for the purpose of obtaining an academic or financial benefit or injuring another student academically or financially.

(ii) “Plagiarism” includes, but is not limited to, the appropriation, buying, receiving as a gift, or obtaining by any means another’s work and the submission of it as one’s own academic work offered for credit.

(iii) “Collusion” includes, but is not limited to, the unauthorized collaboration with another person in preparing academic assignments offered for credit or collaboration with another person to commit a violation of any section of the rules on scholastic dishonesty.

(iv) All written work that is submitted will be subject to review by TurnitIn, available on Canvas.

UT Tyler Resources for Students:
- UT Tyler Writing Center (903.565.5995), writingcenter@uttyler.edu, http://www.uttyler.edu/writingcenter/
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.

Code of Ethics and Standard Practices for Texas Educators

Texas Administrative Code
TITLE 19          EDUCATION
PART 7            STATE BOARD FOR EDUCATOR CERTIFICATION
CHAPTER 247       EDUCATORS' CODE OF ETHICS
RULE §247.2       Purpose and Scope; Definitions
(b) Enforceable Standards.

(1) Professional Ethical Conduct, Practices and Performance.
   (A) Standard 1.1. The educator shall not intentionally, knowingly, or recklessly engage in deceptive practices regarding official policies of the school district, educational institution, educator preparation program, the Texas Education Agency, or the State Board for Educator Certification (SBEC) and its certification process.
   (B) Standard 1.2. The educator shall not knowingly misappropriate, divert, or use monies, personnel, property, or equipment committed to his or her charge for personal gain or advantage.
   (C) Standard 1.3. The educator shall not submit fraudulent requests for reimbursement, expenses, or pay.
   (D) Standard 1.4. The educator shall not use institutional or professional privileges for personal or partisan advantage.
   (E) Standard 1.5. The educator shall neither accept nor offer gratuities, gifts, or favors that impair professional judgment or to obtain special advantage. This standard shall not restrict the acceptance of gifts or tokens offered and accepted openly from students, parents of students, or other persons or organizations in recognition or appreciation of service.
   (F) Standard 1.6. The educator shall not falsify records, or direct or coerce others to do so.
   (G) Standard 1.7. The educator shall comply with state regulations, written local school board policies, and other state and federal laws.
   (H) Standard 1.8. The educator shall apply for, accept, offer, or assign a position or a responsibility on the basis of professional qualifications.
   (I) Standard 1.9. The educator shall not make threats of violence against school district employees, school board members, students, or parents of students.
   (J) Standard 1.10. The educator shall be of good moral character and be worthy to instruct or supervise the youth of this state.
   (K) Standard 1.11. The educator shall not intentionally or knowingly misrepresent his or her employment history, criminal history, and/or disciplinary record when applying for subsequent employment.
   (L) Standard 1.12. The educator shall refrain from the illegal use or distribution of controlled substances and/or abuse of prescription drugs and toxic inhalants.
   (M) Standard 1.13. The educator shall not consume alcoholic beverages on school property or during school activities when students are present.

(2) Ethical Conduct Toward Professional Colleagues.
   (A) Standard 2.1. The educator shall not reveal confidential health or personnel information concerning colleagues unless disclosure serves lawful professional purposes or is required by law.
   (B) Standard 2.2. The educator shall not harm others by knowingly making false statements about a colleague or the school system.
Standard 2.3. The educator shall adhere to written local school board policies and state and federal laws regarding the hiring, evaluation, and dismissal of personnel.

Standard 2.4. The educator shall not interfere with a colleague's exercise of political, professional, or citizenship rights and responsibilities.

Standard 2.5. The educator shall not discriminate against or coerce a colleague on the basis of race, color, religion, national origin, age, gender, disability, family status, or sexual orientation.

Standard 2.6. The educator shall not use coercive means or promise of special treatment in order to influence professional decisions or colleagues.

Standard 2.7. The educator shall not retaliate against any individual who has filed a complaint with the SBEC or who provides information for a disciplinary investigation or proceeding under this chapter.

Ethical Conduct Toward Students.

Standard 3.1. The educator shall not reveal confidential information concerning students unless disclosure serves lawful professional purposes or is required by law.

Standard 3.2. The educator shall not intentionally, knowingly, or recklessly treat a student or minor in a manner that adversely affects or endangers the learning, physical health, mental health, or safety of the student or minor.

Standard 3.3. The educator shall not intentionally, knowingly, or recklessly misrepresent facts regarding a student.

Standard 3.4. The educator shall not exclude a student from participation in a program, deny benefits to a student, or grant an advantage to a student on the basis of race, color, gender, disability, national origin, religion, family status, or sexual orientation.

Standard 3.5. The educator shall not intentionally, knowingly, or recklessly engage in physical mistreatment, neglect, or abuse of a student or minor.

Standard 3.6. The educator shall not solicit or engage in sexual conduct or a romantic relationship with a student or minor.

Standard 3.7. The educator shall not furnish alcohol or illegal/unauthorized drugs to any person under 21 years of age unless the educator is a parent or guardian of that child or knowingly allow any person under 21 years of age unless the educator is a parent or guardian of that child to consume alcohol or illegal/unauthorized drugs in the presence of the educator.

Standard 3.8. The educator shall maintain appropriate professional educator-student relationships and boundaries based on a reasonably prudent educator standard.

Standard 3.9. The educator shall refrain from inappropriate communication with a student or minor, including, but not limited to, electronic communication such as cell phone, text messaging, email, instant messaging, blogging, or other social network communication. Factors that may be considered in assessing whether the communication is inappropriate include, but are not limited to:

(i) the nature, purpose, timing, and amount of the communication;
(ii) the subject matter of the communication;
(iii) whether the communication was made openly or the educator attempted to conceal the communication;
(iv) whether the communication could be reasonably interpreted as soliciting sexual contact or a romantic relationship;
(v) whether the communication was sexually explicit; and
(vi) whether the communication involved discussion(s) of the physical or sexual attractiveness or the sexual history, activities, preferences, or fantasies of either the educator or the student.