ArmchairEdClockHours
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Overview:
ArmchairEdClockHours.com currently provides continuing education to educators, using Educational Leadership magazine and premiere published books on cutting-edge educational themes and topics.

Course Goals and Objectives:
As a result of these courses, the student will be able to:

1. Research STEM curricula
2. Write three lesson plans, discuss rationale and expectations for learning
3. Identify STEM careers, and community professionals.
4. Create a unit to make connections about STEM
5. Identify STEM curricula most applicable to the classroom, identify the learning outcomes and how to adapt them.

The following published book is currently being used as a text for the ArmchairEdClockHours course:

STEM Essentials

STEM Lesson Essentials: Integrating Science, Technology, Engineering, and Mathematics (Vasquea, J.A., Sneider, C., Comer, M., 2013). Heinemann, 178 pages.

STEM Lesson Essentials provides all the tools and strategies you'll need to design integrated, interdisciplinary STEM (Science, Technology, Engineering, Mathematics) lessons and units that are relevant and exciting to students. The course provides clear definitions of both STEM and STEM literacy, including organizing and delivering instruction by weaving the four disciplines together in intentional ways. The engineering and technology practices can instead be blended into existing math and science lessons in ways that engage students and help them master twenty-first century skills. The course provides five guiding principles for effective STEM instruction, classroom examples of what these principles look like in action, sample activities that put all four STEM fields into practice, and lesson planning templates for STEM units.

Credit Options:

- The course will be offered for 50 clock hours, based on the length and substance of the book, and related activities. **The course will include 30 multiple-choice questions and four required essays. This course meets Washington State Science, Technology, Engineering, and Math Clock Hour Requirements**

  Grading Rubric:
  Pass/Fail: Coursework must be passed with 70% criterion.

  Four Essays Required
  Essay 1: Use the planning template on p. 139-140 in the text to create an integrated STEM unit for your class.

Essay 2: Take a unit that you've created and have taught in your own classroom. Think of ways to make it either multidisciplinary or interdisciplinary. In your essay, talk about the changes you would make to the unit and how you may (or may not) find it improved.
Essay 3: Beginning on p. 173 in STEM Lesson Essentials is a list of resources for creating STEM curricula. Explore the websites listed and find at least three lessons or activities that you can use in your classroom. Write three lesson plans that include one or more of the activities you discovered. With the lesson plan, talk about the rationale for using whatever you chose and how you expect it to impact your students' learning.
Essay 4: Using what you've learned and research you can do online, make a list of STEM related careers. Either with your students or on your own, create a list of individuals in your community who have STEM related positions. Create a unit that will make actual connections, digital or personal, between your students and one or more of those individuals. Report on the outcome of the connections that your students make

Essay scoring rubric:

Four essays required
Each essay 2-3 pages
Single spaced, 10 to 12 size font
Use of introduction and summary statement (even when a unit is developed)
Demonstration of grammar, spelling and writing skill
Demonstration of applied knowledge

All essays must be fully completed and the rubric followed to receive clock hours. Essays not completed to required length will not be processed and revisions will be required.