ArmchairEdClockHours
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An Educator's Guide to Steam

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. Identify three community problems with STEAM solutions
2. Identify STEAM careers and ways to connect students
3. Use STEAM components to create and implement a unit

Credit Options:
The course will be offered for 30 clock hours, based on the length and substance of the book, and related activities. **The course will include 30 multiple-choice questions and three required essays.**

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

Quigley, C., & Herro, D. (2019). *An educators guide to Steam: engaging students using real-world problems.* New York, NY: Teachers College Press.

Sousa, D. A., & Pilecki, T. (2018). *From Stem to Steam brain-compatible strategies and lessons that integrate the arts.* California, CA: Corwin.

An Educator's Guide to Steam

STEAM—the integration of music, visual arts, and drama into daily STEM instruction—is proven to enhance student achievement in STEM subjects. Creative, real-world problem-solving is what working scientists and mathematicians actually do. But how do busy STEM educators weave arts activities into a sometimes-inflexible STEM curriculum?   This practical course can be used to engage students in K-8 classrooms. Using a conceptual mode with classroom examples and recommendations to use key aspects of STEAM teaching in action, including creating the correct teaching environment, integrating STEAM content, and supporting students as they develop STEAM-related skills. The teaching model includes problems-based learning, student choice, technology integration, and teacher facilitation. Each chapter incorporates elements of connected learning, drawing on students' interests that teachers can

capitalize on when using STEAM to address real-world problems and make STEAM a schoolwide success. This course is great for educators, instructional coaches, principals, and administrators.

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

One Essay Required for: An Educator's Guide to STEAM:
The beginning and heart of every STEAM unit is the scenario in which there is a problem to solve. To begin your essay, identify 3 community problems: one from your school community, one from your school neighborhood and one relating to the town/city where your school is located. Describe each of the problems in a paragraph and list at least five possible resources to enrich your STEAM unit. Choose one of the problems from the list and write a scenario for the one you choose. You might want to review pages 41-54 in the text as you create your scenario. To summarize your essay, discuss the choice of problem and the kinds of STEAM activities you visualize students being involved in as well as a description of resources you will include.

You may e-mail info@armchairedclockhours.com if you desire specific permission for your topic. The essay must demonstrate knowledge of the course and text, and direct application to your own educational position.

Essay scoring rubric:
One essay required for **An Educator's Guide to STEAM** 2-3 pages each
One essay required for **From STEM to STEAM,** 2-3 pages each
Each essay 20% of overall grade

One Essay Required for: From STEM to STEAM
Preferably with your students, or on your own, make a list of careers that involve Science, Technology, Engineering, Art and Math. Explore with your students the names of people they know or know of that are engaged in this work. Once you have a list of relatives, friends, neighbors, people in the school community or whoever, brainstorm at least three ways you can connect your students with one of more of these individuals. In your essay, describe the process of locating STEAM individuals and how you will connect them with your students.

Essay scoring rubric:
One essay required for **From STEM to STEAM,** 2-3 pages each
One essay required for **An Educator's Guide to STEAM** 2-3 pages each
Each essay 20% of overall grade

One essay required from both **An Educator's Guide to STEAM** and **From STEM to STEAM**:
Create a STEAM unit for a topic that you are required to teach. Each of the texts includes lesson plan formats that you may use or use a familiar lesson plan format of your own. At least two of the disciplines in STEM must be present in your unit, as well as at least one art project than engages student learning. If you're interested in the problem you identified in the essay from *An Educator's Guide*, you can use that as the focus of your unit. The body of your essay will be the unit, but begin the essay with your reason for selecting the topic you choose and summarize the essay with your description of creating and teaching the STEAM unit.

Three to four pages, 30% of overall grade
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

➤ **You must download the coursework before starting this course.**

➤ **Submit all coursework at the same time.**

➤ **All essays must be fully completed and the rubric followed to receive a grade. Essays not completed to required length will not be processed and revisions will be required.**