Spring 2019
March 9 and 30: 8:30 AM - 4:30 PM
Creating a STEM Culture

COURSE DESCRIPTION:
Participants will learn why and how STEM is important in today’s educational setting and will use the 4C’s of STEM (collaboration, critical thinking, creativity, and communication). Participants will participate in meaningful, inquiry-based, hands-on activities and lessons that emphasize the best practices of STEM as well as provide substantive feedback to their colleagues for improvement of lessons/units.

COST:
$136 (1 hr academic credit)

LOCATION & INSTRUCTOR
Bennett 203 with Jennifer Domo @ OHIO Chillicothe

Register by emailing Ann Holmes at holmesa1@ohio.edu
Ohio University
Graduate Course Syllabus
Spring 2018-2019

Course Title:
Creating a Culture of STEM in Your School- (Science, Technology, Engineering, [Arts], Mathematics)

Credit Hour: 1 graduate credit hour
Dates/Times: 8:30AM-4:30PM; March 9 & 30, 2019
Instructor: Jennifer Domo
  domo@ohio.edu
  Cell phone number: (740)-701-6534

The Gladys W. and David H. Patton College of Education and Human Services Conceptual Core
Leader-Educators and Practitioners: The Unit prepares expert, ethical and reflective leader-educators, practitioners, human service professionals and decision-makers who are committed to holistic learning, and engage in collaborative and professional service to society.

Change Agents: the Unit prepares leader-educators, practitioners and human service professionals who address the changing human and social needs through inquiry, research, assessment, critical thinking, problem-solving, and proactive use of technologies.

Diversity: the Unit prepares leader-educators, practitioners and human service professionals who appreciate the variety of human cultural expression, employ multiple approaches to inquiry, use knowledge and practice for the benefit of a diverse society, and promote social equity and justice for effective civic engagement.

Lifelong Learning: The Unit prepares leader-educators, practitioners and human service professionals who engage in self-reflection and professional development for continuous personal growth, and who inspire such practices in those whom they serve.

Course Description: The participants will learn why and how STEM is important in today’s educational setting. Participants will participate in meaningful, inquiry-based, hands-on activities and lessons that emphasize the best practices of STEM. Participants will use the 4C’s of STEM (collaboration, critical thinking, creativity, and communication) to create a STEM lesson/unit. Then, participants will provide substantive feedback to their colleagues to improve these STEM lessons/units. Participants will also read and reflect upon the recommendations from the STEM
Innovation Working Group through the use of the Ohio Department of Education—A Quality Model for STEM and STEAM Designated Schools. Participants will also review the following professional best practices documents as recommended by the Ohio Department of Education STEM/STEAM Committee—Preparing Teachers For a Project-Based World and The Importance of Community Partnerships.

**Course Objectives:**
- To learn the importance of STEM/STEAM in today’s educational setting.
- To learn and understand the 4 C’s of STEM/STEAM—collaboration, critical thinking, creativity, and communication.
- To use their knowledge of STEM/STEAM to create a STEM/STEAM lesson.
- To peer-evaluate a colleague’s STEM lesson, and provide them with feedback that feed forward.
- To integrate the use of community partnership information in the STEM/STEAM lesson.
- To use the Quality STEM/STEAM Matrix to design a year-long plan of STEM/STEAM culture for a school.
- To integrate the concept of project-based learning into the STEM/STEAM thematic unit.

**Resources/Books:**
- Why STEM Education Matters by the National Math & Science Initiative.

Materials from the Ohio Department of Education website STEM/STEAM Committee and the STEM/STEAM Working Committee (Community Partnerships and Preparing Teachers For a Project-Based World)


**Course Requirements:**
- Must post all assignments to Blackboard by the scheduled due date.
- Must engage in workshop activities and discussions on Blackboard. Participants must monitor their own thread at the discussion tabs and reply to all discussion items directed to them in a timely matter in order to promote in-depth and meaningful STEM/STEAM curriculum collaboration.

**Class Assignment:**
- Prepare a sample lesson based on the 4C’s of STEM/STEAM including knowledge of community partnerships and project-based learning.
- Explore STEM/STEAM missions from the LearningBlades STEM Virtual platform—Growing interest and sharpening skills for STEM. Create 3 different reflection pieces based on the paradigm of a student, teacher, and administrator about the chosen mission.
- Prepare a 2-3 page reflection paper on why and how STEM/STEAM is important in today’s educational setting and why it is important in the process of making our students "future ready."
Assignments with Grading Points, Criteria and Weights:
Participants will be graded on their class participation, a STEM lesson using the 4C’s of STEM, community partnerships, and project-based/problem-based learning, and a 2-3 page reflection paper on why and how STEM/STEAM is importance in today’s educational setting and why STEM is important in the process of making our students "future ready."

- **STEM/STEAM Lesson** 25%
- **2-3 page reflection paper on why and how STEM/STEAM is important in today’s educational setting** 25%
- **Discussion participation (responding to questions and comments of others at the discussion tab for weekly professional collaboration about STEM/STEAM** 15%
- **Participation in small group projects and LearningBlades STEM Virtual platform missions with reflections** 35%

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<th>A</th>
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<tr>
<td><strong>Sample Lesson (25 points)</strong></td>
<td>Lesson incorporates the 4C’s of STEM Shows strong evidence of project-based learning and community partnerships</td>
<td>Lesson presents only 3 C’s of STEM Shows evidence of project-based learning and community partnerships</td>
<td>Lesson plan presents only 2 C’s of STEM Somewhat shows evidence of project-based learning and community partnerships</td>
<td>Lesson plan presents only 1 C of STEM Shows little evidence of project-based learning and community partnerships</td>
<td>Lesson plan does not present any of the C’s of STEM No evidence of project-based learning and community partnerships</td>
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<td><strong>2-3 page reflective paper (25 pts)</strong></td>
<td>Paper reflects a complete understanding of STEM/STEAM</td>
<td>Paper reflects understanding of STEM/STEAM</td>
<td>Paper somewhat reflects understanding of STEM/STEAM</td>
<td>Paper provides minimal understanding of STEM/STEAM</td>
<td>Paper provides no understanding of STEM/STEAM</td>
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<td><strong>Discussion participation (15 pts)</strong></td>
<td>Fully engaged in all discussions</td>
<td>Engaged in most discussions</td>
<td>Provides some input to discussions</td>
<td>Contributes little in discussions</td>
<td>No contributions in discussions</td>
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<td><strong>Participation in small group projects including Learning Blades missions and</strong></td>
<td>Fully engaged in all small group projects</td>
<td>Engaged in most small projects</td>
<td>Provides some input to small group projects</td>
<td>Contributes little in small group projects</td>
<td>No contributions in small group projects</td>
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The university’s twelve point grade scale will be used:
90 – 100 = A- to A;  80 – 89 = B- to B+;  70 – 79 = C- to C+;  60 – 69 = D- to D+;
and 59 or less = F

**Attendance Policy:** All students are required to attend class via the BlackBoard system. Students should monitor his or her own discussion thread for the entire instructional period and respond to posts in a timely manner in order to maximize STEM/ STEAM collaboration with colleagues. Assignments will be due by the assignment due dates. Discussions should continue for the entire instructional time of the assigned discussion threads. Please check your thread often and throughout the entire time of the discussion, spread out over time.

**Misconduct Policy:** The Ohio University Code of Student Conduct prohibits all forms of academic dishonesty. These include cheating, forgery, furnishing false information to the University, alteration or misuse of University documents, records or academic dishonesty. If a student engages in workshop-related academic dishonesty, his or her grade on the work in questions or in the workshop may be lowered by the instructor. Any student wishing to protest the instructor's action has recourse to the established grievance procedures, starting at the department level. (See Ohio University Policy and Procedure Manual, No. 28.10). The Academic Misconduct Policy can be found at http://www.ohio.edu/communitystandards/academic/

**Penalty Statement for Academic Dishonesty:** Academic integrity and honesty are basic values of Ohio University. Students are expected to follow standards of academic integrity and honesty. Academic misconduct is a violation of the Ohio University Student Code of Conduct subject to a maximum sanction of disciplinary suspension or expulsion as well as a grade penalty in the workshop.

**Special Accommodations:** Any student who feels s/he may need an accommodation based on the impact of a disability should contact me privately to discuss your specific needs and provide written documentation from Student Accessibility Services. If you are not yet registered as a student with a disability, please contact Alex Ecklund, Student Accessibility Services at 740-774-7200.