Gear Up Georgia
Virtual PD Workshop SYLLABUS
Fall 2017

INSTRUCTORS:

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CONTACT INSTRUCTOR

Email

Email is best way to contact instructors. We will respond to e-mails within 24 hours on weekdays, within 48 hours on weekend.

Folio

Folio https://georgiasouthern.desire2learn.com/ is the learning management system for the workshop. To leave an email on the Folio site log in, select the Gear Up Virtual PD Workshop, click on Communications tab and select Email. Interacting through Folio ensures that your email is attached to the rest of your workshop work.

Office Phone

You can call instructors between 8:00 and 5:00. We are in and out a lot so if you miss us send a follow up email to arrange a time to call.

Office Hours

This is a virtual workshop, so on-campus visits need to be arranged in advance with the instructor.

Online Office Hours

Weekly online office hour is the Synchronous Collaboration Session held Thursdays from 7:00-8:00 p.m. on the WebEx video conferencing software. To access the online session log in to the Folio site, select Online Rooms, and select the meeting room for the assigned week. The synchronous sessions are to be attended by one representative of each schools Professional Learning Community each week. The representative can rotate from week to week. Of course all are welcome.

Gear Up Web Page

http://www.gearupgeorgia.org/

Lead Inst. Web Page

http://coe.georgiasouthern.edu/directory/robert-mayes/

CONTACT CLASSMATES

Folio https://georgiasouthern.desire2learn.com/ is the learning management system for the Virtual PD Workshop. Folio keeps a class list with emails for your classmates. To email a classmate log into Folio site, select the Gear Up Virtual PD Workshop, click on Resources tab and select Classlist. From this class list you can email any of your fellow classmates or instructors by clicking on their name.

Welcome to the Gear Up Virtual PD Workshop: This may be your first online (on the Internet) workshop, so we ask you to access the Folio and WebEx (Online Room tab in Folio takes you to this video conferencing program) the Thursday or Friday before the workshop begins. Take some time to get acquainted with Folio and WebEx (Online Rooms) to see how things will work. If you are not a computer whiz, don't worry -- you won't

need to be. From a computer standpoint, absolutely everything is simple. By the time you leave the first class, you'll know everything needed to navigate this workshop.

The Gear Up Virtual PD Workshop provides professional development supporting the implementation of interdisciplinary STEM through authentic teaching strategies in your classroom, school, or district, with the goal of increasing the engagement of your students. The online workshop will target the PD goals outlined in the Gear Up Georgia Rigorous Course Taking and Professional Development services. The workshop will consist of 6 sessions addressing ICAR (**I**nterdisciplinary STEM, **C**ollaboration, **A**uthentic Teaching, and STEM **R**easoning), incorporating literacy in science and mathematics, and culturally relevant teaching. Each session will run for one week, providing asynchronous online tasks and resources for the teachers to explore, as well as engaging the teachers in threaded discussions. A synchronous collaboration hour will be offered as a culmination of each session. The workshop will run from **September 5 through October 14 2017**. The online workshop will be open to all participating teachers in the Gear Up Georgia Project. The workshop provides job-embedded, competency-based professional development. The workshop tasks result in artifacts that provide evidence of mastery and demonstration of ability to apply and implement ICAR in the classroom. This evidence supports awarding of a **certificate of completion** for your records.

WHY ONLINE? Before getting into the organizational details and topics of the workshop, you might be wondering why the workshop is presented online. First this allows you to receive quality professional development without leaving your home region. Second it provides the opportunity to build virtual professional development communities (PLCs) which can provide support and advice as you implement STEM in your classroom and school. Another advantage of the online format is the ability to include a lot of graphic images plus video clips. Hopefully they will make the subject more interesting, the material easier to understand, and you will be able to access them as resources.

PURPOSE and ORGANIZATION: There is no prerequisite for the Gear Up Virtual PD Workshop. This workshop provides a foundation for integrating interdisciplinary STEM into schools: exploring what interdisciplinary STEM means, strategies for implementing authentic STEM teaching into schools, the importance of Professional Learning Communities (PLC) and community collaboration, exploring STEM Reasoning as a learning outcome, and providing cultural relevant teaching.

The workshop will be delivered primarily asynchronously online, which means your PLC and you will receive weekly online assignments to view and complete by the end of the week. Teachers should expect to spend 1 hour per week online viewing/interacting with the tasks, then 1-2 hours per week completing assignments and interacting with their PLC. The only synchronous online meetings will be the online virtual office hours. A typical weekly schedule looks like this:

Sample Weekly Schedule		
Day	Task	**Due** Times
Saturday	Asynchronous Online Assignment posted in Folio – 1 hour of online interaction for teacher, flexible time through week	6:00 a.m. posting
Monday	PLC group interaction – flexible time, can meet face-to-face for 30 minutes to an hour or meet virtually through WebEx or Google Hangout, or even meet asynchronously	
Tuesday	Individual teacher work on tasks	
Wednesday	Individual teacher post to discussion board – focus questions will be provided each week, each teacher will post response and share with PLC	10:00 p.m.
Thursday	Synchronous Online Office Hour in Adobe Connect – 1 member of each PLC attends, representative can rotate each week	7:00-8:00 p.m.
Friday	PLC Post to discussion board – each PLC will post a reflection based on comments from members of their PLCs	10:00 p.m.
Saturday	Repost - teacher posts response to PLC post – repost where teacher reflects on at least one of the PLC postings	10:00 p.m.

WORKSHOP OBJECTIVES:
1. To establish an understanding of interdisciplinary STEM that directs implementation in the classroom.
2. To develop STEM PLCs between mathematics and science teachers and community collaborations.
3. To engage teachers in implementing authentic teaching strategies including project-based learning, problem-based learning, and place-based education.
4. To develop a STEM lesson/module which includes at least two STEM reasoning types.
5. To incorporate literacy in science and mathematics, as well as culturally relevant teaching.

WORKSHOP TOPICS:
The topics are arranged to support the development of engaging STEM lessons/models in your school.
- Session 1: Interdisciplinary STEM
- Session 2: Authentic Teaching Strategies
- Session 3: Culturally Sensitive Pedagogy
- Session 4: STEM Reasoning Abilities
- Session 5: Collaborative Partnerships - PLC and Community
- Session 6: Lesson Development - engaging students

REQUIRED MATERIALS:
1. Assigned articles will be posted to Folio each week
2. Online resources will be posted to Folio each week

RECOMMENDED MATERIALS:
1. Bybee, R. W. (2013). The Case for STEM Education: Challenges and Opportunities. NSTA Press.
   o ISBN: 978-1-936959-25-9
2. Vasquez, J., Sneider, C., & Comer, M (2013) STEM Essentials: Integrating Science, Technology, Engineering and Mathematics. Heinemann Press.
   o ISBN: 978-0-325-04358-6

WORKSHOP ACTIVITIES

1. READING
Required reading will be posted on the web Folio site for each workshop session. Reading in optional texts is recommended for every topic studied. The text should be used as a reinforcement or complement to other course material. Readings are to be completed before activities where indicated. Video clips are incorporated into online material. Most are YouTube videos and should not require any special setup to run on your computer.

2. FORMATIVE QUIZZES
Online weekly formative quizzes are provided in Folio for assessing your understanding of key concepts. The formative quizzes can be accessed from Folio by selecting the Assessments tab and clicking on Quizzes. The quizzes should give you a good idea about how well you are learning the material. The formative quizzes are almost entirely multiple choice. A solution key to the quizzes will be provided so they can be used as formative assessments, indicating areas you may need to revisit or discuss with your PLC or instructor.

3. EXAMS
There will be no formal exams in the workshop, instead you will be engaged in job-embedded, competency-based tasks.

4. COMPETENCY TASKS

The Gear Up Virtual PD Workshop focuses on development of competencies which are job-embedded. The competency tasks will engage you in actively practicing what you learn. For the Gear Up Virtual PD, the competency task artifacts are:

1. Interdisciplinary STEM Definition and Classroom Implementation Plan (Teacher)
2. STEM Module/Lesson Plan with reflection on implementation (PLC can collaborate, but each teacher must submit reflection and video evidence of implementation)

5. DISCUSSION and COLLABORATION

Part of the assessment of your competency is based on collaborating with other workshop participants in online asynchronous threaded discussions. The discussions will be hosted on Folio and can be accessed by clicking on the Communication tab and selecting Discussions. We will follow your discussions, but we may not actively participate. As much as possible, we want it to be *your* forum. We would prefer not to influence its direction or make our presence too obvious. We will, however, follow up on discussion topics as needed or desired at the beginning of the next workshop session. A feature of this discussion forum is that outside experts and guests will be able to participate from time to time. So do not be surprised if you receive a response or other message from someone who is an expert or otherwise has first-hand knowledge of a particular topic.

Each week there will be a Teacher Discussion Board and a PLC Discussion Board (see sample Weekly Schedule above). The **Teacher Discussion Board** requires a weekly posting by Wednesday from each teacher responding to assigned reflection questions on the assignment for the week. **Professional Learning Communities** (PLC) consisting of three to four teacher participants and an administrator who will meet weekly at a time of their choosing to engage in work related to the competency-based job-embedded tasks. These sessions may be face-to-face or virtual using Google Hangout or WebEx Online Rooms. The **PLC Discussion Board** requires a posting by Friday based on reflections on the PLC member's individual postings. The PLC posting should represent a consensus of the PLC on an assigned reflection question. Members of the PLC should rotate leading PLC discussions and posting responses. Each PLC will make up a unique name and post under that name. A **reposting** is due by Saturday, where each teacher selects at least one PLC posting and posts on the PLC Discussion Board a comment on how the PLC reflection might impact their teaching practice.

Participant Feedback: Each of these competency-based assignments will be assessed using a detailed rubric with four levels (Advanced, Proficient, Progressing and Novice).

Feedback Weights			
Feedback	**Weight**	**Feedback Detail**	**Competency Level**
Formative Quizzes	10%	6 quizzes	Advanced – 4 points
Competence Task 1: STEM definition/goals	10%	Teacher STEM definition and goals for STEM integration into classroom	Proficient – 3 points
Competence Task 2: authentic teaching lesson outline	10%	Selection of project-based, problem-based or place-based teaching strategy	Progressing – 2 points
Competence Task 3: literacy/culture integration into outline	10%	Integration of STEM literacy and culturally sensitive pedagogy	Novice – 1 point
Competence Task 4: reasoning integration into outline	10%	Integration of at least 2 STEM reasoning abilities into lesson	
Competence Task 5: STEM partnership development plan	20%	PLC implementation and plan to collaborate with STEM experts	
Competence Task 6: STEM Lesson Plan	20%	Interdisciplinary STEM lesson/module developed and implemented	
Discussion Boards	10%	Discussion postings: 6 individual, 6 PLC, 6 reposts	

Technology Requirements: You will need the following for this workshop:
1. Reliable High speed internet access either at your home or school
2. Headset with microphone and speakers for online discussions in WebEx or Google Hangout
3. Webcam to support development of community in WebEx or Google Hangout
4. Word Processor (prefer *Microsoft Word*) and *Acrobat Reader* (www.adobe.com/products/acrobat/readstep2.html)
5. Computer capable of playing video recordings

Attendance: Distance learning is self-directed and requires a high level of individual responsibility, dedication and self-discipline. In order to succeed you need to **log in to the workshop site regularly** to check announcements, participate in discussions and access workshop content. You are expected to **complete all of the asynchronous activities and to actively participate in your PLC meetings each week**. You are also expected to participate in a substantive way to discussion threads and group collaborations (PLC meetings). Feedback on participation will be tracked by completion of Teacher Discussion Board and PLC Discussion Board postings.

Netiquette: Communication Courtesy Code – all members of the workshop are expected to follow rules of common courtesy in email messages, threaded discussions, and chats. Failure to do so will result in a warning on the first offense and additional actions up to removal from the workshop opportunity for additional violations.

Submitting Work: All assignments are turned in **on or before the assigned due date** via Folio unless otherwise specified.
- **Deadlines:** Odd things happen in cyberspace – emails get lost, servers disconnect temporarily, and logins fail. **Do not wait until the last minute** to do your work. **Plan to turn work in early** rather than ask for an extension. Allow time to meet deadlines.
- **Late Work**: Each week's work must be completed by the assigned deadlines. You will have latitude to complete weekly assignments when your time allows within that week; however all assignments must be submitted on or before the due date(s). Late work will only be accepted for instructor approved reasons. You must contact the instructor ahead of time to make arrangements for special circumstances.

Help Desk:
Help will be provided by Georgia Southern University CATS:

> **Center for Academic Technology Support**
> (912) 478-CATS (2287)
> cats@georgiasouthern.edu

Email Policies: **All emails and assignments should be submitted through Folio**. E-mailed assignments outside of this format are not accepted unless prior approval is given by the instructor. In these rare cases, put on the Subject header the following: STEM <Name of Assignment> <your last name>. This is important because it will help in tracking assignments. When sending an email other than assignments, identify yourself fully by name and school, not simply by an email address. All email attachments and assignments must be saved in *Microsoft Word* or *Adobe* so the instructors can access and read them. Most word processors can save files in *Microsoft Word* format. Alternatively save files as .rtf, then send.

Disability Statement: If you have a physical, learning, or psychological disability and require accommodations, please let the instructors know.

Social Justice: Georgia Southern University is committed to social justice. We expect to foster a nurturing learning environment based upon open communication, mutual respect, and non-discrimination. Our

University does not discriminate on the basis of race, sex, age, disability, veteran status, religion, sexual orientation, color or national origin. Any suggestions as to how to further a positive and open environment in this workshop will be appreciated and given serious consideration.

Academic Honesty: Georgia Southern University is built upon a strong foundation of integrity, respect and trust. Any form of academic dishonesty is unacceptable and will not be tolerated. Report suspected violations of standards of academic honesty to the instructor.

Plagiarism: Plagiarism is defined as the use of ideas, facts, phrases, quotations, reproductions, or additional information, such as charts or maps, from any source without giving proper credit to the original author. Failure to reference any such material used is both ethically and legally improper.

Workshop Calendar				
Session	**Date**	**Topic/Activity**	**Description**	**Competency Tasks**
Prepare	Aug 31 – Sept 1	Technology Check	Log in to Folio site and explore, check out Adobe Connect (Online Room)	
1	Sept 5 – Sept 9	Interdisciplinary STEM	Math-Science interdisciplinary, role of technology and engineering	DUE: STEM definition and goals
2	Sept 10 – Sept 16	Authentic Teaching Strategies	Moving from project-based to problem-based learning; place-based education	DUE: authentic teaching lesson outline
3	Sept 17 – Sept 23	Culturally Sensitive Pedagogy	STEM literacy and culturally sensitive teaching	DUE: literacy/culture integration into outline
4	Sept 24 – Sept 30	STEM Reasoning Abilities	21st century STEM reasoning: model-based, design-based, and quantitative	DUE: STEM reasoning integration into outline
5	Oct 1 – Oct 7	Collaborative Partnerships - PLC and Community	Developing interdisciplinary STEM PLC; cultivating community partnerships	DUE: STEM partnership development plan
6	Oct 8 – Oct 14	Lesson Development - engaging students	Gear UP STEM module design framework; implementing lesson/module	DUE: STEM Lesson Plan

Note: Synchronous online sessions will be held each Thursday at 7:00. The first session and last session (project presentations) are to be attended by all participants. The remaining sessions are to be attended by a minimum of one representative per PLC.