

## Syllabus

### *Preparing for the Future: Integrating Math, Science and Technology*

#### Introduction

For this particular course you will be developing an Integrated MST (Math, Science and Technology) unit that you can use in your classroom as a single classroom teacher or as a team of teachers. This course will address the following concepts:

1. Understanding Inquiry based learning and its benefits
2. Understanding reasons for integrating math, science and technology
3. Considering different approaches
4. Viewing examples and resources
5. Creating a unit or lesson

We will also be working with web-based software called *Elluminate*. The program will require headphones and speakers. If you don't already have access to these, you will find they are inexpensive to purchase (\$ 5 - \$15). With *Elluminate* we will be setting a prearranged time for all participants to meet—twice for an instructor's presentation and participant discussion and once, toward the end of the course, for sharing and providing feedback on your created unit.

You will be given instruction on how to use these programs within this course.

#### Credit

This is a one-credit professional development in-service course sponsored by the Teacher Center Online Academy. It is a 15 hour course which will be six weeks in duration.

**Course Description:** We will begin by looking at the first MST Standard: "Students will use mathematical analysis, scientific inquiry and engineering design, as appropriate to pose questions, seek answers and develop solutions". As an umbrella to the remaining six standards, you will be investigating this Standard as an approach to teaching. You will also explore the interrelatedness of all the MST standards considering possibilities and tactics for integration. By the end of the course you will design an integrated MST unit to be used in your classroom. You can view the breakdown of the course: outcomes, activities, assessments, standards and minutes for each of the 6 weeks by viewing the **Road Map**.

#### Standards

This course is aligned with the following NET Standards for Teachers. To see how alignment is addressed for each activity, refer to the **Road Map**.

- I. Teachers demonstrate a sound understanding of technology operations and concepts.
- II. Teachers plan and design effective learning environments and experiences supported by technology.
- III. Teachers implement curriculum plans that include methods and strategies for applying technology to maximize student learning.
- IV. Teachers apply technology to facilitate a variety of effective assessment and evaluation strategies.

- V. Teachers use technology to enhance their productivity and professional practice.
- VI. Teachers understand the social, ethical, legal, and human issues surrounding the use of technology in PK ? 12 schools and apply that understanding in practice.

### **Credit/Award Criteria**

In order to receive full in-service credit, please review the following:

#### **How Credit is Earned**

1. All outcomes have to be met for full credit.
  - a. Discussions ( *Caucus* Items and *Elluminate*)
    1. All participants are expected to participate in the above programs.
    2. A participant may elect to write comments rather than speak when using the program *Elluminate*
    3. Participant will receive **no credit** if he does not meet at a prearranged meeting time unless there are extenuating circumstances and instructor has been notified
    4. During discussions respond to at least two other people.
  - b. All assignments must be completed and on time.
  - c. Participation-- You are expected to log in at least 3 times per week.
2. Assessment will be through the use of rubrics.
3. Participant will receive **Full Credit, Partial Credit** or **No Credit**.
4. The amount of credit received is based on the estimated class time assigned for each activity.
  - a. The total number of minutes equals 15 hours.
  - b. For full credit, participants will receive the total number of minutes for that activity.
  - c. For partial credit, participant will receive half the number of minutes
  - d. Zero credit, participant will receive 0 minutes.

#### **Making up Credit Time:**

1. When partial credit or no credit is received, the activity can be re-submitted to gain full credit.
2. This can be completed throughout the term of the course.
3. In the case of discussions, **one** make – up will be allowed.
  - a. It will be up to the student to contact the instructor.
  - b. A second chat session will be scheduled with the instructor.

#### **Late Assignments**

1. Assignments are to be turned in **on time!**
2. If there are extenuating circumstances, you need to e-mail me or speak with me during office hours.
3. **No credit** will given for late assignments, otherwise.

#### **Participation Expectations**

Participant is expected to check in at least three days a week to remain updated with class assignments and discussion schedules.

### **Prerequisite: Hardware, Software, Skills or Knowledge**

In order to successfully to participate in this course you should have and be able to do the following:

1. Utilize basic technology skills such as e-mail and the Internet.
2. Use the word processor, WORD--found in the Office Suite.
3. Create documents, download documents and send
4. Access to headphones and speakers
5. Access to a high speed connection is preferable (cable, DSL, etc)

### Minimum Requirements for *Elluminate*

To start using Elluminate *Live!*, you will need to install Java Web Start on your computer and take an online orientation session.

#### Windows:

Pentium II 266 MHz processor or faster  
64 MB of RAM  
Windows 95/98/NT/2000/XP  
20 MB of available disk space on your hard drive  
Soundcard with speakers and microphone or headset  
28.8 kbps or higher Internet connection

#### Macintosh:

Mac OS 9.0, 9.1, 9.2, Mac OS X 10.1 or later  
G3 233 MHz or better  
64 megabytes for OS 9, and; 128 megabytes for OS X and above  
20 megabytes of available disk space on your hard drive  
Stuffit Expander  
Soundcard with speakers and microphone or headset  
28.8 kbps or higher Internet connection

#### SPARC Solaris:

UltraSPARC IIc 300 MHz or faster  
Solaris 9  
128 megabytes of RAM  
20 megabytes of available disk space on your hard drive  
Soundcard with speakers and microphone, or headset  
28.8 kbps or higher Internet connection

### **Office/Contact Information**

Office hours:

I will be available Saturdays through *Elluminate* at the end of week 2, 4 and 6 from 9:00 to 10:30 am. You can also reach me through email or phone:

jruckh@hotmail.com  
Phone: 716-725-9906