1. Title of Course

Mentoring Educators in Curricular Integration of Technology

2. Course Description

This course will teach experienced, technology-using educators principals of using technology effectively to teach to curriculum standards with a strong assessment component, to develop and incorporate essential questions, to use constructivist techniques in authentic learning activities, and to make accommodations for individual learning styles, multiple intelligences, and/or differentiated instruction. Participants will also learn effective approaches to mentoring and collaborating with their teaching colleagues to develop and implement project- and problem-based, technology-infused curricular projects.

Participants will take an initial self-assessment of technology skills and concepts and be led through an analysis of the results so they can assist their protégé groups do the same. They will develop a list of prospective protégés to mentor and an initial curriculum project proposal.

This course will meet a minimum of 30 instructional hours. Participants will have out of class readings, research and other directed activities representing at least 30 additional hours.

Prerequisites: Course participation is limited to successful applicants for the Lower Merion School District Technology Mentor Program. Participants must be experienced with using technology as a professional tool and with integrating technology in the curriculum. Participants should also have a strong interest in working with colleagues to assist them with their technology use in the classroom. This course supports student achievement of the Pennsylvania Academic Standards for Science and Technology, specifically 3.6.B– Technology Education, Information Technology and 3.7 C, D, and E – Technology Devices, Computer Literacy.

Course Outline
Six 5-hour Sessions (see also outline for Ten 3-hour Sessions)

Session One of 6

- Course/Program Overview
  - Introductions
  - Course Schedule
  - Program Goals
  - Program Opportunities
  - Mentor Responsibilities
  - Program Support and Communication
  - Overview of Readings and Assignments
  - Overview of Course Project
- Equipment/Software Overview
  - Laptop and Peripherals
  - Installed Software
  - Access/Network Location Configurations
- Assignments:
  - Individual Program Goals
  - Response to Assigned Readings
  - Dial into Network from Home
  - Retrieve/Save Files in Tech Mentor Shared Directory
  - Post to Online Forum

Session Two of 6

- Equipment/Software Overview (continued)
  - Issues with Using Laptops (practical, logistical, and legal)
  - Printer Selection Configuration (School/Home)
- Technology Standards
  - Student Standards
    - NETS•S
    - Pennsylvania Academic Standards for Science and Technology
  - District Curriculum
    - Elementary Technology Curriculum
    - District K-12 Curriculum Writing Status
  - Teacher Standards – NETS•T
  - Stages of Technology Adoption (CEO Forum Report)
  - Assessing Technology Skills (for self and proteges)
- Introduction to Project-Based and Problem-Based Learning
  - Understanding By Design
  - Constructivism
  - Seeing the Big Picture – Pulling Them Together with Technology

- Assignments:
    - Response to Assigned Readings
    - Configure Setting for Training Lab Printer
    - Analyze Standards in Sample Lesson/Project
    - Ideas for Potential Projects/Units
    - Plan for Personal Tech Skills Development

Session Three of 6

- Review, React, and Reconstruct
    - Hardware Software Issues
    - Technology Standards – Questions and Comments
- Understanding By Design
    - Designing Backwards
    - Enduring Understandings and Six Facets of Understanding
    - Essential Questions
    - Evidence of Understanding and Types of Assessment
    - Maintaining Focus
- Assignments:
    - Response to Assigned Readings
    - Essential Questions for Potential Project/Unit
    - Assessment Plan for Potential Project/Unit

Session Four of 6

- Review, React, and Reconstruct
    - Hardware Software Issues
    - Technology Standards – Questions and Comments
    - Understanding By Design – Application Issues
- Constructivism and Technology
    - What Research Says
    - Constructivist Rationale
    - Practical Examples
    - Application with Technology
    - Technology as Teaching/Learning Tool
    - Information/Communication Literacy
- Assignments:
    - Response to Assigned Readings
    - Personal Examples of Constructive Learning
    - Application of Constructive Technology to Potential Project/Unit

Session Five of 6

- Review, React, and Reconstruct
    - Hardware Software Issues
    - Technology Standards – Questions and Comments
    - Understanding By Design – Application Issues
    - Constructivism, Technology, and the fit with Understanding By Design

- Principles of Mentoring
  - Selecting and Recruiting Proteges
  - Setting Expectations and Boundaries
  - Facilitating Collaboration; Using Emotional Intelligence
  - Leading and Co-Learning
  - Adult Learning and Technology
  - Achieving Closure
- Assignment:
  - Response to Assigned Readings
  - Prospective List of Proteges
  - Personal Mentoring Style Profile

Session Six of 6

- Review, React, and Reconstruct
  - Technology Standards – Questions and Comments
  - Understanding By Design – Application Issues
  - Constructivism, Technology, and Understanding By Design – Questions, Issues
  - Mentoring – Implementation Issues
- Project and Problem-Based Learning
  - Impact of Technology
  - Connection with Constructivism
  - Implications for Understanding By Design
  - Accommodating Individual Differences
  - Accounting for Multiple Intelligences
  - Project Rubrics
  - Project Planning
- Assignments:
  - Comment and Contribute to Project Rubric
  - Complete potential Problem or Project-Based Project/Unit Plan incorporating technology standards, UBD designing, constructivism, and accommodations for individual differences and multiple intelligences

Ten 3-hour Sessions (see also outline for Six 5-hour Sessions)

Session One of 10

- Course/Program Overview
  - Introductions
  - Course Schedule
  - Program Goals
  - Program Opportunities
- Equipment/Software Overview
  - Laptop and Peripherals
  - Installed Software
  - Access/Network Location Configurations
- Assignments:
  - Response to Assigned Readings
  - Individual Program Goals
  - Dial into Network from Home

Session Two of 10

- Course/Program Overview (continued)
  - Mentor Responsibilities
  - Program Support and Communication
  - Overview of Readings and Assignments
  - Overview of Course Project
- Equipment/Software Overview (continued)
  - Issues with Using Laptops (practical, logistical, and legal)
  - Printer Selection Configuration (School/Home)
- Technology Standards
  - Student Standards
    - NETS•S
    - Pennsylvania Academic Standards for Science and Technology
  - District Curriculum
    - Elementary Technology Curriculum
    - District K-12 Curriculum Writing Status
- Introduction to Project-Based and Problem-Based Learning
  - Understanding By Design
  - Constructivism
  - Seeing the Big Picture – Pulling Them Together with Technology
- Assignments:
  - Response to Assigned Readings
  - Configure Setting for Training Lab Printer
  - Retrieve/Save Files in Tech Mentor Shared Directory
  - Post to Online Forum
  - Analyze Standards in Sample Lesson/Project
  - Ideas for Potential Project/Unit

Session Three of 10

- Review, React, and Reconstruct
  - Program Design and Expectations
  - Hardware Software Issues
- Technology Standards (continued)
  - Teacher Standards – NETS•T
  - Stages of Technology Adoption (CEO Forum Report)
  - Assessing Technology Skills (for self and proteges)
- Assignments:
  - Response to Assigned Readings
  - Plan for Personal Tech Skills Development

Session Four of 10

- Review, React, and Reconstruct
  - Hardware Software Issues
  - Technology Standards – Questions and Comments
- Understanding By Design
  - Designing Backwards
  - Enduring Understandings and Six Facets of Understanding
  - Essential Questions
- Assignments:
  - Response to Assigned Readings
  - Essential Questions for Potential Project/Unit

Session Five of 10

- Review, React, and Reconstruct
  - Hardware Software Issues
  - Technology Standards – Questions and Comments
  - Understanding By Design – Application Issues
- Understanding By Design
  - Evidence of Understanding and Types of Assessment
  - Maintaining Focus
- Assignment:
  - Response to Assigned Readings
  - Assessment Plan for Potential Project/Unit

Session Six of 10

- Review, React, and Reconstruct
  - Technology Standards – Questions and Comments
  - Understanding By Design – Application Issues
- Constructivism and Technology
  - What Research Says
  - Constructivist Rationale
  - Practical Examples

- Assignments:
    - Response to Assigned Readings
    - Personal Examples of Constructive Learning

Session Seven of 10

- Review, React, and Reconstruct
    - Technology Standards – Questions and Comments
    - Understanding By Design – Application Issues
    - Constructivism, Technology, and Understanding By Design – Questions, Issues
- Constructivism and Technology
    - Application with Technology
    - Technology as Teaching/Learning Tool
    - Information/Communication Literacy
- Assignments:
    - Response to Assigned Readings
    - Application of Constructive Technology to Potential Project/Unit

Session Eight of 10

- Review, React, and Reconstruct
    - Technology Standards – Questions and Comments
    - Understanding By Design – Application Issues
    - Constructivism, Technology, and Understanding By Design – Questions, Issues
- Principles of Mentoring
    - Selecting and Recruiting Proteges
    - Setting Expectations and Boundaries
    - Facilitating Collaboration; Using Emotional Intelligence
    - Leading and Co-Learning
    - Adult Learning and Technology
    - Achieving Closure
- Assignments:
    - Response to Assigned Readings
    - Prospective List of Proteges
    - Personal Mentoring Style Profile

Session Nine of 10

- Review, React, and Reconstruct
    - Technology Standards – Questions and Comments
    - Understanding By Design – Application Issues
    - Constructivism, Technology, and Understanding By Design – Questions, Issues
    - Mentoring – Implementation Issues
- Project and Problem-Based Learning
    - Impact of Technology
    - Connection with Constructivism
    - Implications for Understanding By Design
    - Accommodating Individual Differences
    - Accounting for Multiple Intelligences

- Assignments:
    - Response to Assigned Readings
    - Means of Accommodating Differences and Accounting for Multiple Intelligences with Technology in Potential Project/Unit

Session Ten of 10

- Review, React, and Reconstruct
    - Technology Standards – Questions and Comments
    - Understanding By Design – Application Issues
    - Constructivism, Technology, and Understanding By Design – Questions, Issues
    - Mentoring – Implementation Issues
- Project and Problem-Based Learning
    - Project Rubrics
    - Project Planning
- Assignments:
    - Comment and Contribute to Project Rubric
    - Complete potential Problem or Project-Based Project/Unit Plan incorporating technology standards, UBD designing, constructivism, and accommodations for individual differences and multiple intelligences

3. Statement of Need

The Lower Merion Information and Technology Office and the Lower Merion Staff Development Council has surveyed the district staff and found an overwhelming need for technology in-service. The results of this survey and the observations of teachers in previous district in-service sessions indicates that perceived skill exceeds practical, personal and professional usage of technologies and that personal and professional usage technologies exceeds day-to-day integration of technology in curricular activities. This course is designed to meet this need by preparing individual teachers to serve as technology mentors of three to five professional colleagues each year and up to nine total over the course of the three years they will serve in this capacity.

4. List of Competencies to Be Developed

Upon completion of this course, participants will be able:

- Access the Internet and district network using laptop in school and from home
- Configure laptop to access printers
- Post messages to online web discussion forum
- Access the shared network server directory for the Technology Mentor Program
- Develop a personal plan and a plan for program proteges to develop technology skills based upon assessments related to the National Educational Technology Standards for Teachers and the Stages of Technology Adoption

- Describe the rationale and components of the Technology Mentor Program to recruit prospective program Proteges
- Determine personal attributes and strengths most consistent with a list of positive mentoring characteristics developed in the course
- Design lessons, units, and/or student learning projects incorporating the following:
    - Technology standards and benchmarks based upon the district curriculum, the Pennsylvania Academic Standards for Science and Technology, and the National Educational Technology Standards for Students
    - Principles of Understanding by Design including enduring understandings, essential questions, and a means to assess student understanding
    - Principles and practical applications of constructivist teaching and learning
    - Accommodations for individual differences and multiple intelligences

5. Means of Developing Competencies

The concepts of this course will be presented through lectures, demonstrations, instructor-guided hands-on practice, participant sharing, and discussion. The instructor will use demonstrations, step-by-step skill-building approaches, participation simulations, research, discussion and response to develop skills in using and incorporating technology standards, curriculum design strategies, constructivist approaches to using technology, and principles of mentoring in a six or ten-session course, building upon the skills and understandings gained in previous sessions. In addition, there will be out-of-class project assignments and designated readings between sessions in order for participants to gain a practical understanding of concepts covered in class.

The Course Outline-Session Plans are attached.
References and Resources are attached.

6. Performance Standards and Assessment Methods

Participant performance will be evaluated based on the completion of project assignments, the instructor's in-class observations of skills and competencies gained, and the quality of the completed assignments and projects (see below).

Project assignments for the course include the following:

- Response to Assigned Readings (Sessions One through Nine)
- Individual Program Goals
- Dial into Network from Home
- Retrieve/Save Files in Tech Mentor Shared Directory
- Post to Online Forum
- Configure Setting for Training Lab Printer
- Analyze Standards in Sample Lesson/Project
- Ideas for Potential Project/Unit
- Plan for Personal Tech Skills Development

- Essential Questions for Potential Project/Unit
- Assessment Plan for Potential Project/Unit
- Personal Examples of Constructive Learning
- Application of Constructive Technology to Potential Project/Unit
- Prospective List of Proteges
- Personal Mentoring Style Profile
- Means of Accommodating Differences and Accounting for Multiple Intelligences with Technology in Potential Project/Unit
- Comment and Contribute to Project Rubric
- Complete potential Problem or Project-Based Project/Unit Plan incorporating technology standards, UBD designing, constructivism, and accommodations for individual differences and multiple intelligences

7. Administrative Responsibility

Ginny DiMedio, Technology Supervisor, Lower Merion School District will assume administrative responsibility for this course.

8. Provisions for Follow-Up

This course is designed as the formal orientation for the district Technology Mentor Program. As such there are on-going processes designed for program follow-up and support throughout the school year for participating Mentors including the program oversight and support from the district Technology Office, coordination of release day scheduling (two full days per year for both Mentors and their proteges), an online web forum for Mentors to share their experiences and questions regarding the program, and email and phone consultation with the district Technology Office.

9. Resources Available for This Course

Each participant in the Technology Mentor Program receives a state-of-the-art laptop computer with ample software and peripherals for exclusive use during their three-year program commitment and beyond. Participants will also receive a set of books (listed below) for use in completing course requirements and for reference in carrying out their Tech Mentor Program responsibilities. As the formal orientation for the program, this course will be held in the District Training Lab which includes wired and wireless Internet and district network access for the participants' laptops, an instructor workstation, printer(s) and overhead projection capabilities with electronic whiteboard.

References and Resources

Course participants will be asked to complete required readings before the course begins and between each session. The readings will either be assigned by the instructor or selected by the participant primarily from the following required books and suggested journals.

Required Books (supplied to participants)

Adams, Sharon and Mary Burns. *Connecting Student Learning & Technology,* Southwest Educational Development Laboratory, 1999.

Jonassen, David H., Kyle L. Peck, and Brent G. Wilson. *Learning with Technology: A Constructivist Perspective,* Prentice Hall, 1999.

McKenzie, Jamie. *Beyond Technology: Questioning, Research and the Information Literate School,* FNO Press, 2000.

Sandholtz, Judith Haymore, Cathy Ringstaff, and David C. Dwyer. *Teaching with Technology: Creating Student-Centered Classrooms,* Teachers College Press, 1997.

Wiggins, Grant and Jay McTighe. *Understanding by Design,* Association for Supervision and Curriculum Design, 1998.

Resources (available in print or portable document format)

Adams, Sharon, Jackie Burniske, Mary Burns, Jackie Cuevas, K. Victoria Dimock, Marilyn Heath, Danny Martinez, and Jim Zuhn. *Active Learning with Technology,* Southwest Educational Development Laboratory, 2000

CEO Forum Reports – Year Two (Staff Development)

National Educational Technology Standards for Students—Connecting Curriculum and Technology, International Society for Technology in Education, 2000

National Educational Technology Standards for Teachers—Preparing Teachers to Use Technology, International Society for Technology in Education, 2002

NETS•S Curriculum Series—Multidisciplinary Units for Grades 3–5, International Society for Technology in Education, 2002

Pennsylvania Department of Education. *Academic Standards for Science and Technology,* 22 Pa. Code, Ch. 4, Appendix B, January 5, 2002

Professional Development: A Link to Better Learning, The CEO Forum on Education and Technology (Year Two), February 22, 1999

Recommended Journals (available for loan)

Education Week
Technology and Learning
Educational Leadership
Classroom Connect Newsletter
Learning and Leading with Technology
Technos

10. Participants Evaluation of the Course

Participants will provide feedback regarding course content, organization and presentation via the course evaluation form developed by the Montgomery County Continuing Professional Education Council.

11. Target Population

This course is designed for Lower Merion School District K-12 educators who have been selected for the district Technology Mentor Program. The maximum enrollment is 15.

12. College Agreement

None

13. Faculty Data Sheet

See attached Faculty Data Sheet

14. Course Level

This is a 2-credit, graduate level course. Prerequisites: Participants must have been selected for participation in the district Technology Mentor Program. Internet and district network access at school are required; home access to the Internet is strongly recommended but not required. It will meet a minimum of 30 instructional hours. Participants will have out of class readings, research, and other directed activities. This course supports student achievement of the Pennsylvania Academic Standards for Science and Technically, specifically 3.6.B– Technology Education, Information Technology and 3.7 C, D, and E – Technology Devices, Computer Literacy.