Curriculum Development Centers Program

Awardee of The Office of the National Coordinator for Health Information Technology

HEALTH IT WORKFORCE CURRICULUM
COMPONENT BLUEPRINT
Version 2.0/Spring 2011

Component Number: 20
Component Name: Training and Instructional Design

Component Description (from FOA):
Overview of learning management systems, instructional design software tools, teaching techniques and strategies, evaluation of learner competencies, maintenance of training records, and measurement of training program effectiveness.

Assigned Institution: Columbia University

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Component Objectives
Upon completion of this component, the student will be able to:
1. Plan, design, develop (produce), deliver, and evaluate technology-based instruction according to sound instructional design models and principles.
2. Describe the training cycle by the Instructional Systems Design method and the phases of the ADDIE model of instruction design given a population of adult learners.

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3. Plan and implement an instructional needs assessment given a specific population of users in a health care setting.
4. Construct a lesson plan using appropriate instructional methods and approaches, given a specific population of learners.
5. Construct an instructional product (simple online tutorial) using the appropriate media based instructional method, such as customized images, customized video (e.g., EHR screen captures).
6. Create a custom PowerPoint presentation using the principles of effective PowerPoint design given a particular training program.
7. Demonstrate effective public speaking skills and proper operation of computer and AV equipment for a multimedia presentation, given a set of user needs.
8. Plan and conduct student assessment and program evaluation given different population contexts.
9. Design a training program in LMS that adhere to the standards and open source initiatives in online learning.
10. Select and implement Web 2.0 technologies as instructional technologies given a specific platform and training program.

Component Units with Objectives and Topics

Unit 1:
Introduction to Training and Adult Learning

Description:
Apply the Instructional Systems Design method and the phases of the ADDIE model of instruction design, to a given population of adult learners.

Objectives:
Students will be able to:
1.1 Define the levels of learning per Bloom's Taxonomic Domains (Cognitive, Affective, Psychomotor)
1.2 Describe the characteristics of adult learners and factors that could impact training design and learning outcomes.
1.3 Describe the recommended training cycle of the Instructional Systems Design method
1.4 Describe the five phases of the ADDIE model of instruction design.

Topics:
A. Training Introduction
B. Roles & Competencies of Trainers
C. Cone of Learning
D. Principles of Adult Learning
E. Knowle's Principles of Adult Learning

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F. Bloom's Taxonomy
G. Knowledge, Skills & Attitudes (KSA)
H. Analysis, Design, Development, Implementation & Evaluation Model (ADDIE)

Unit 2:
Needs Analysis

Description:
Plan and implement an instructional needs assessment, given a specific population of users in a health care setting.

Objectives:
Students will be able to:
2.1 Identify an instructional design problem for a given group of learners and a training setting.
2.2 List a range of useful data collection methods for conducting needs assessments in healthcare settings.
2.3 Identify the principles of the planning and implementation process of an instructional needs assessment in a health organization setting.
2.4 Analyze learner, task, and situational characteristics.
2.5 Recognize the special training needs and constraints in a health care setting [such as, time constraints and work pressures, resistance to change, impact of system on work flow and patient care, security requirements for EHRs, etc.]
2.6 Project instruction plans based on data gathered from a needs assessment.

Topics:
A. Assessing the training/learning needs of the organization and individual learners
B. Basic computer literacy as well as EHR, security and confidentiality, classroom training/tutoring/helpdesk support
C. Understanding your students – recognize the special needs and constraints of training users in a health care setting
D. Time constraints and work pressures, resistance to change, impact of system on work flow and patient care, train-the-trainer programs
E. Data Collection

Unit 3:
Creating a Lesson Plan

Description:
Construct a lesson plan using appropriate instructional methods and approaches, given a specific population of learners.

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Objectives:
Students will be able to:
3.1 Write measurable goals and learning objectives for a training program which meet the SMART criteria (Specific, Measurable, Attainable, Relevant, Time-bound)
3.2 Write specific learning objectives based on Bloom's Taxonomy, classifying learning from the simplest to the most complex levels.
3.3 Write learning objectives that are tied to needs analysis and outcomes
3.4 Select appropriate activities for training objectives
3.5 Identify the appropriate instructional approaches tied to a needs analysis, situational characteristics, and subject matter domain when designing a lesson plan.

Topics:
A. Defining Instructional Goals
B. Writing Good Learning Objectives that are tied to Needs Analysis and Outcomes
C. Creating and Customizing Content
D. Instructional Approaches
-Lectures – classroom and online
-Cases-based learning, simulations and other active learning pedagogies
-Tutoring or solo training

Unit 4:
Selecting and Working with Media

Description:
Construct an instructional product (simple online tutorial) using appropriate media, such as customized images, customized video (e.g., EHR screen captures).

Objectives:
Students will be able to:
4.1 Select appropriate instructional media for a given lesson plan and objectives/goals.
4.2 Select and customize images to embed in training materials
4.3 Select and customize video (e.g., EHR screen captures) to embed in training materials
4.4 Design simple online tutorials using screen capture software

Topics:
A. Text – desktop publishing, creating handouts and web content
B. Images – working with graphics and photographs to enhance learning
C. Video and Audio – use simple editing programs and publish content to online environment
D. Interactive Media – create simple online tutorials using screen capture software

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Unit 5:
Building & Delivering Effective PowerPoint Presentation

Description:
Create a custom PowerPoint presentation using the principles of effective PowerPoint design, given a particular training program and learner population.

Objectives:
Students will be able to:
5.1 Construct a script or storyboard for a presentation
5.2 Design a custom slide background for a training program
5.3 Demonstrate the appropriate use of color and text in a presentation
5.4 Embed graphics and video in a presentation
5.5 Demonstrate the appropriate use of 'builds' and 'actions'.
5.6 Use the PowerPoint graph and chart functions for designing instructional materials.
5.7 Assess the training environment
5.8 Modify a presentation to compensate for presentation constraints
5.9 Demonstrate effective public speaking skills
5.10 Operate necessary computer and AV equipment to make an effective multimedia presentation

Topics:
A. Design guidelines for PowerPoint stacks
A1.Scripting and Storyboarding
A2.The Utilization of Color and Text in PowerPoint Presentations
A3. The Utilization of Text in PowerPoint Presentations
A4. The Appropriate Utilization of Multimedia in PowerPoint Presentations
A5. Slide Frame Layout, Format Design, Color, Text Styles and Size
A6. Graphs and Charts
A7. Embedding Media and Actions

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Unit 6:
Assessments

Description:
Conduct student outcome assessments and program evaluations in given training contexts.

Objectives:
Students will be able to:
6.1 Design appropriate assessment/testing instruments and procedures aligned with instructional goals/objectives.
6.2 Administer assessments as a component of training/instructional design.
6.3 Conduct formative evaluations in one-on-one and group contexts
6.4 Specify revisions to instruction resulting from the formative evaluations

Topics:
A. Developing Appropriate Assessments
B. Creating a Program Evaluation Plan

Unit 7:
Learning Management Systems

Description:
Design a training program in Learning Management Systems (LMS) that adhere to the standards and open source initiatives in online learning.

Objectives:
Students will be able to:
7.1 Describe the basic functions and technologies in Learning Management Systems (LMS), Content Management Systems (CMS), Reusable Learning Objectives (RLO), and Learning Content Management Systems (LCMS)
7.2 Identify the role of standards and open source initiatives in online learning
7.3 Describe why an instructional designer would SCORM
7.4 Give two approaches to modify e-learning content to meet Section 508 Compliance guidelines
7.5 Build a training program in an LMS using appropriate standards for online learning

Topics:
A. The Basic Functions and Technologies in LMS and CMS Systems
B. How to Build a Training Program in an LMS
C. The Role and Application of Standards and Open Source Initiatives in Online Learning: SCORM, Sakai, Moodle

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Unit 8:
Web 2.0 and Social Networking Tools

Description:
Select and implement Web 2.0 technologies as instructional technologies given a specific platform and training program.

Objectives:
Students will be able to:
8.1 Distinguish between synchronous and asynchronous learning
8.2 Use basic functions of an LMS or CMS
8.3 Utilize different tools within the design and delivery of online training
8.4 Select an appropriate platform for a particular training program

Topics:
This module will cover the use of electronic social networking tools, and informatics knowledge exchange to foster learning in a corporate environment. These tools include:
A. Wikis
B. Blogs
C. YouTube, iTunes
D. Collaborative Environments

Unit Elements:
Instructors manual, self-assessment questions, and application activities

Format:
Slides with narration, suitable for lecture, team-based learning, or online independent study

Size/Contract Hours:
8 units; each with 20-25 minutes of lecture, 5-10 question quiz, 2-3 cases or student exercises

Local Resources Required for Implementation:
Computer, Microsoft Office, Learning Management System, video camera and editing software optional

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