

# Instructional Design for Subject Matter Experts

## Course Guide

*If you don't know where you are going, you might end up someplace else.  
~ Yogi Berra*

### Introduction

Welcome to ***Instructional Design for Subject Matter Experts!*** Since you've decided to take this course, you probably are responsible for developing some course materials and are looking for some guidance on how to proceed. The good news is ... there's an entire discipline devoted to instructional design, so you don't have to make it up as you go. The bad news is ... there's an entire discipline devoted to instructional design, and you don't have a year or two to learn how to become an instructional designer. The good news is ... this course is for you!

### Course Description

This is a basic instructional design course for subject matter experts (SMEs) who need to create instruction that effectively transfers their expertise to others. This course discusses the basic instructional design process with a focus on the "hows" and "whys" of designing and developing effective instruction without delving into the theory or details behind the process. It will provide you with the basic knowledge, skills, and tools needed to create instructional materials based on sound instructional design principles.

While this course does not contain all the theory, background, and detail usually found in a more thorough introduction to instructional design (ID), it will provide you with a set of principles and practices that you can apply immediately to your own course development. It won't turn you into an expert instructional designer, but it will give you a path to follow through the instructional design process. It also can be a starting point for additional education or training in instructional design.

### Course Objectives

By the end of this course, you'll be able to apply the basic instructional design process to your own course design and development. More specifically, this course will help you to:

- Understand the ADDIE instructional design model
- Participate in performance analysis in your organization
- Assist with a needs assessment
- Perform learner analysis
- Conduct a task analysis
- Develop objectives for a course
- Design assessments
- Choose appropriate media for your course
- Develop web-based course materials
- Implement your course materials
- Evaluate how effective your instruction is

You'll be able to use this course as a springboard from which you can continue to broaden and deepen your understanding of the instructional design process by practicing what you've learned here, working with experienced instructional designers, and taking additional courses related to instructional design.

## **Course Philosophy**

This course provides concise instruction for a highly complex field, using a bare bones approach but one that is flexible to meet the demanding schedules of the working professional. Inherent in this flexibility is the requirement for a disciplined approach to using learning time and effort. One of the first questions to ask yourself is how much quality time can you feasibly devote to studying this course per day, and how quickly do you have to master the contents of this course? Do you have a few days, a week, or a month? Creating and committing to a schedule for studying in a self-paced course is critical for successful completion and mastery of the course content, so assessing your feasible availability for studying in light of your goals should be determined before you begin the course.

Some suggestions are provided in the next two sections for how you might want to approach this course, depending on your needs and time resources. Remember that the key to successfully getting the most from this course is to create a time management and study plan that meets your needs while considering your available time commitment to learning and applying the course content.

## **Course Structure**

Even though this is a self-paced course, the different units and lessons are fairly sequential and build on one another. So you are going to want to set aside time on a regular basis to work on the course materials. To help you develop your own course schedule, the course is broken down into eight units of instruction with each unit further divided into lessons. The entire course is estimated to take 16 hours to complete, with each unit taking anywhere from 1.5 to 2.5 hours to finish (including online assessments). The eight units and 16 lessons that make up the course are listed below, including brief descriptions of each lesson:

**UNIT 1: Introduction to Instructional Systems Design**..... *Unit Time: 2.0 Hours*

**Lesson 1-1: The Components of the ADDIE Model.** This lesson introduces the learner to the Instructional Systems Design tool called the A D D I E model. The lesson defines the five phases of the A D D I E model. The entire lesson is designed to take 1.0 hour to complete, including student activities and assessment.

**Lesson 1-2: The Functions and Components of the ADDIE model.** This lesson provides the learner with a functional description of the phases of the A D D I E model. The lesson discusses the relationship of the five phases to designing instruction systematically. The entire lesson is designed to take 1.0 hour to complete, including student activities and assessment.

**UNIT 2: Performance Analysis and Needs Assessment**..... *Unit Time: 2.0 Hours*

**Lesson 2-1: Performance Analysis.** This lesson examines the organization's performance requirements in light of its objectives and its capabilities. The lesson will discuss the identification of current or anticipated deficiencies in workforce performance and competence. The content will compare the state of the workforce as it currently exists to the desired state of the organization to achieve its mission. The entire lesson is designed to take 1.0 hour to complete, including student activities and assessment.

**Lesson 2-2: Needs Assessment.** This lesson discusses the process used to identify and document a gap between the desired and actual unit or individual human performance, as well as determine the cause for the gap. The lesson will further discuss how a needs assessment can be reactive in identifying deficiencies between what exists and what is required. The entire lesson is designed to take 1.0 hour to complete, including student activities and assessment.

**UNIT 3: Learner and Task Analysis**..... *Unit Time: 2.0 Hours*

**Lesson 3-1: Task Analysis.** This lesson discusses the concepts and processes in conducting a task analysis, including task-subtask analysis, task-capability analysis, and criticality analysis. The entire lesson is designed to take 1.0 hour to complete, including student activities and assessment.

**Lesson 3-2: Learner Analysis.** This lesson discusses the concepts and processes in conducting a learner analysis, including learner characteristics, prior knowledge, learning styles, and special learner needs. The entire lesson is designed to take 1.0 hour to complete, including student activities and assessment.

**UNIT 4: Design – Objectives**..... *Unit Time: 1.5 Hours*

**Lesson 4-1: Designing Objectives.** This lesson discusses creating objectives that are used to guide the course development as well as let your students know what they can expect to learn in the course. The entire lesson is designed to take 1.5 hours to complete, including student activities and assessment.

**UNIT 5: Design – Assessments**..... *Unit Time: 2.5 Hours*

**Lesson 5-1: Fixed-Response Assessments.** This lesson introduces assessments and the concept of aligning assessments with objectives. It then introduces fixed-response assessments and discusses how to create multiple-choice and true/false assessment items. The entire lesson should take 0.5 hours to complete, including interactive student activities and self-assessments.

**Lesson 5-2: Constructed-Response Assessments.** This lesson introduces constructed-response assessments and discusses how to create completion items, essay questions, and scoring plans used to grade essay questions. The entire lesson should take 1.0 hours to complete, including interactive student activities and self-assessments.

**Lesson 5-3: Performance Assessments.** This lesson introduces performance assessments and how to create them. It also discusses creating and using checklists and rating scales to grade performance assessments. The entire lesson should take 1.0 hours to complete, including interactive student activities and self-assessments.

**UNIT 6: Development**..... *Unit Time: 2.5 Hours*

**Lesson 6-1: User Interface Design.** This lesson discusses interface design issues such as font and background coloring, course navigation, and web graphics. The entire lesson is designed to take 1.0 hour to complete, including interactive student activities and assessment.

**Lesson 6-2: Media Selection.** This lesson discusses media selection concerns such as the different types of media, the strengths and weaknesses of each, and the process of researching and selecting pre-developed media. The entire lesson is designed to take 1.0 hour to complete, including interactive student activities and assessment.

**Lesson 6-3: Early Course Revision.** This lesson discusses the importance of early course evaluation (formative evaluation) and course revision. It is a very brief lesson which serves as a lead-in to some of the topics covered in more detail in Units 7 and 8. The entire lesson is designed to take 0.5 hour to complete, including interactive student activities and assessment.

**UNIT 7: Implementation**..... *Unit Time: 1.5 Hours*

**Lesson 7-1: Beta Testing.** This lesson discusses the process of testing your final product prior to full implementation. Topics include selecting testers, observing learners, collecting feedback, and revising the course. The entire lesson is designed to take 1.0 hour to complete, including interactive student activities and assessment.

**Lesson 7-2: Launching the Course.** This lesson discusses the process of delivering a web-based course. Topics include information on learning management systems and tips for launching a web-based course over an intranet or the World Wide Web. The entire lesson is designed to take 0.5 hour to complete, including interactive student activities and assessment.

**UNIT 8: Evaluation**..... *Unit Time: 2.0 Hours*

**Lesson 8-1: Formative Evaluation.** This lesson discusses the concepts and processes in conducting a formative evaluation, including data collection methods and sources, data analysis methods, and utility of evaluation findings. The entire lesson is designed to take 1.0 hour to complete, including student activities and assessment.

**Lesson 8-2: Summative Evaluation.** This lesson discusses the concepts and processes in conducting a learner analysis, including data collection methods and sources, data analysis methods, and utility of evaluation findings. The entire lesson is designed to take 1.0 hour to complete, including student activities and assessment.

Total Course Time: 16 Hours

## Time Management and Study Strategies

As suggested in the Course Structure section above, you should plan to do the units and lessons in the order specified. To obtain the most benefit from this course, you should make every effort to apply these skills and knowledge to specific real world instructional projects, especially those for which you will be responsible for creating. Ideally, you should plan to intersperse the application of your knowledge and skills between your learning the lessons and units, while reviewing and reflecting upon any prior lessons or topics as necessary. Following this approach should aid and enhance the transfer of your knowledge and skills that you learn from this module to your job. If you find that you do not have time for this more hands-on approach, then you can opt to go straight through the entire course in the specified order over a period of a few days.

Specific time management and study strategies that you should consider using to complete this course include:

- Master calendar: Create and use a master calendar for the entire course to document your progress, marking lessons or units that you feel that you may need to review
- Weekly schedules: Create a weekly schedule that includes your work and personal obligations, as well as the time you will be committing for studying the course material.
- Lesson chunking: Divide the course lessons into smaller manageable study sessions, alternate between learning the material in the course lessons and applying the knowledge and skills that you learn to a specific project. This strategy helps provide variety as well as helps makes learning more effective.
- Study space: Set aside a study space by finding a quiet space where you will not be interrupted, and there are few distractions.

## Course Materials

The course is currently implemented as a series of PowerPoint slides, one set for each lesson identified in the Course Structure section above. The PowerPoint slides for each lesson are available for download by clicking on the corresponding link for the lesson below. Note that you must have Internet access in order to download the PowerPoint slides. An alternative way to access the course materials is to copy and paste the address for the lesson into your browser. You may want to save the downloaded presentations to your hard drive for later viewing.

<b>UNIT 1: Introduction to Instructional Systems Design</b>	
Lesson 1-1:	<a href="http://www.bigusbooks.com/lesson1-1.ppt">http://www.bigusbooks.com/lesson1-1.ppt</a>
Lesson 1-2:	<i>Not Yet Implemented</i>
<b>UNIT 2: Performance Analysis and Needs Assessment</b>	
Lesson 2-1:	<i>Not Yet Implemented</i>
Lesson 2-2:	<i>Not Yet Implemented</i>
<b>UNIT 3: Learner and Task Analysis</b>	
Lesson 3-1: Task Analysis	<a href="http://www.bigusbooks.com/lesson3-1.ppt">http://www.bigusbooks.com/lesson3-1.ppt</a>
Lesson 3-2: Learner Analysis	<i>Not Yet Implemented</i>
<b>UNIT 4: Design – Objectives</b>	
Lesson 4-1: Designing Objectives	<i>Not Yet Implemented</i>
<b>UNIT 5: Design – Assessments</b>	
Lesson 5-1: Fixed-Response Assessments	<i>Not Yet Implemented</i>
Lesson 5-2: Constructed-Response Assessments	<a href="http://www.bigusbooks.com/lesson5-2.ppt">http://www.bigusbooks.com/lesson5-2.ppt</a>
Lesson 5-3: Performance Assessments	<i>Not Yet Implemented</i>
<b>UNIT 6: Development</b>	
Lesson 6-1: User Interface Design	<a href="http://www.bigusbooks.com/lesson6-1.ppt">http://www.bigusbooks.com/lesson6-1.ppt</a>
Lesson 6-2: Media Selection	<i>Not Yet Implemented</i>
Lesson 6-3: Early Course Revision	<i>Not Yet Implemented</i>
<b>UNIT 7: Implementation</b>	
Lesson 7-1: Beta Testing	<i>Not Yet Implemented</i>
Lesson 7-2: Launching the Course	<i>Not Yet Implemented</i>
<b>UNIT 8: Evaluation</b>	
Lesson 8-1: Formative Evaluation	<i>Not Yet Implemented</i>
Lesson 8-2: Summative Evaluation	<i>Not Yet Implemented</i>

Once you have downloaded the lesson, you can view the slides using PowerPoint or a PowerPoint viewer. You can download a PowerPoint viewer from the Microsoft download site at <http://www.microsoft.com/downloads/>. At the time this course was developed, the latest PowerPoint viewer was available at <http://www.microsoft.com/downloads/details.aspx?FamilyID=428d5727-43ab-4f24-90b7-a94784af71a4&DisplayLang=en>.

Within each lesson, the navigation is fairly self-explanatory. On most slides, the buttons at the bottom of the slide can be used for navigation. The Next button will allow you to progress to the next slide in the lesson. The Previous button will allow you to return to previous slide. The Exit button will end the slide show. And the Glossary button will allow you to view a glossary of terms.

Some slides contain links to web sites. In order for these links to work properly, you must be connected to the Internet while viewing the slides.

While the majority of the slides are visual-only, a few slides may contain audio. You may want to insure that the volume on your computer is set to the proper level before viewing the slides.

### **Self-Assessments**

As you go through the course, you will be asked multiple-choice, completion, and true/false questions. You will receive immediate feedback on your answers, allowing you to assess how well you understand the materials and review as needed. In addition, some questions will require a longer answer which you can compare with the “course answer” to gauge your understanding. While it may be tempting to “click through” these assessments without giving them much thought, it is important to spend some time on them because they will help you to apply what you have learned and get the most out of the course.

But the best assessment of what you are learning will come from your on-the-job experiences. As you learn more about the instructional design process, you’ll find that you’ll be able to contribute more to the discussions with the instructional designers you work with. You’ll also see the results of your efforts in the satisfaction level of your students as they participate in the courses you design and develop.

### **Additional Resources**

Below are some references that are not required reading. You may find them useful as you go through the course or if you are interested in doing further reading on instructional design.

Online readings on instructional design:

- "Instructional Design for Online Learning" by William Horton in Getting Started With Online Learning  
Available at: <http://www.macromedia.com/resources/elearning/guide/>
- Instructional Design Resources  
Available at: <http://web.mala.bc.ca/lizhk/IDesign/ISDresources.htm>
- Explorations in Learning & Instruction: The Theory into Practice Database  
Available at: <http://www.gwu.edu/~tip/>
- M. David Merrill on Instructional Design  
Available at: <http://www.id2.usu.edu/Papers/Contents.html>

Books on instructional design:

- Clark, R. (1998). *Building Expertise: Cognitive Methods for Training and Performance Improvement*. Silver Spring, MD: International Society for Performance Improvement.
- Conrad, K. (2000). *Instructional Design for Web-based Training*. Amherst, MA: Human Resource Development Press.
- Dick, W., Carey, L., & Carey, J.O. (2001). *The Systematic Design of Instruction* (5<sup>th</sup> ed.). New York: Addison-Wesley/Longman.
- Gagné, R.M., Wager, W.W., Golas, K.C., & Keller, J.M. (2005). *Principles of Instructional Design* (5th ed.). Belmont, CA: Thomson/Wadsworth.
- Lee, W.W., & Owens, D.L. (2000). *Multimedia-Based Instructional Design: Computer-Based Training, Web-Based Training, and Distance Learning*. New York: Jossey-Bass.
- Merrill, M.D., Tennyson, R.D., & Posey, L.O. (1992). *Teaching Concepts: An Instructional Design Guide* (2nd ed.). Englewood Cliffs, NJ: Educational Technology Publications.
- Piskurich, George M. (2000). *Rapid Instructional Design: Learning ID Fast and Right*. San Francisco: Jossey-Bass/Pfeiffer.