

**The University of Jordan**  
**King Abdullah II School for Information Technology**  
**Computer Information System Department**

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**Course:** Electronic Learning (1902746) ( 3 Credit Hours)

**Perquisite:**

**Semester:** 2<sup>nd</sup> 2014/2015

**Coordinator:** Dr. Thair Hamtini

**Lecturer(s):** Dr. Thair Hamtini

Name	Office Number	Office Phone	Office Hours	E-mail
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**Catalog Course Description:**

This course provides techniques involved in planning and developing e-courses. Designing and managing an e-learning environment, instructional strategies for e-learning, e-learning approaches, and e-learning evaluation techniques. Emphasis is placed on the importance of multimedia authoring programs in producing web-based training materials/courses. Current learning theory as it pertains to e-learning is also examined.

**The Goal:**

The main goal of this course is to introduce students to the theoretical foundations and instructional design principles relevant to e-Learning as well as to provide them with research-based guidelines to shape their decisions about the design, development and evaluation of educational software.

**Objectives:**

Upon completion of the course, the student will be able to:

1. Classify e-learning lessons as primarily inform, perform procedure or perform principle, and identify the architecture as primarily receptive, directive, or guided discovery.
2. Understand key learning theories as pertain to instructional technologies
3. Identify cognitive processes that support learning.
4. Identify the cognitive effects of e-learning design and development principles.
5. Identify the main types and features of an experimental study.
6. Identify the strengths and weaknesses of research evidence that supports guidelines for the design and development of digital learning environments.
7. Evaluate an e-learning lesson for its evidence-based use of text, audio, and graphics.
8. Develop e-learning storyboards that apply evidence-based guidelines regarding text, audio, and graphics.
9. Evaluate an e-learning lesson for its evidence based use of examples, practice, and navigation options.
10. Develop e-learning storyboards that apply evidence-based guidelines regarding examples, practice, and navigation options.
11. Create a lesson design that implements adaptive learning techniques.
12. Critique educational gamification based on evidence-based design principles.

### **Intended Learning Outcomes:**

Successful completion of this course should lead to the following learning outcomes:

#### **A-Knowledge and understanding - students should be able to**

- A1) discuss the theoretical foundations and instructional design principles applicable to e-Learning.
- A2) classify e-Learning lessons as primarily inform, perform procedure or perform principle, and identify the architecture as primarily receptive, directive, or guided discovery.
- A3) identify cognitive processes that support learning

#### **B-Intellectual Skills- with ability to**

- B1) analyze the cognitive effects of e-Learning design and development principles
- B2) identify the main types and features of an experimental study
- B3) identify the strengths and weaknesses of research evidence that supports guidelines for the design and development of digital learning environment

#### **C-Subject Specific Skills – with ability to**

- C1) evaluate an e-Learning lesson for its evidence based use of text, audio, and graphics.
- C2) develop e-Learning storyboards that apply evidence-based guidelines regarding text, audio, and graphics
- C3) evaluate an e-Learning lesson for its evidence based use of examples, practice, and navigation options.
- C4) develop e-Learning storyboards that apply evidence-based use of examples, practice, and navigation options.
- C5) Create a lesson design that implements an adaptive learning techniques

#### **D-Transferable Skills- with ability to**

- D1) work in team to design and develop instructional coursework based on proven design principles and guidelines.
- D2) research, critique and present a sample of educational products and their impact on student learning.

### **Course Topics:** This course will cover the following topics

- A. An introduction to the diverse forms and features of e-learning including synchronous and asynchronous, inform and perform outcome goals, and three design architectures
- B. An overview of learning theories and instructional design.
- C. Designing and Planning Technology-Enhanced Instruction.
- D. Evidence on instructional effectiveness of different delivery media
- E. How e-learning design and development decisions influence basic cognitive learning processes and principles
- F. How to evaluate research on e-learning effectiveness
- G. Evidence on the use of visuals in e-learning: The Multimedia principle
- H. Evidence on the alignment of text and visuals in e-learning: The Contiguity Principle
- I. Evidence on the best modality of words to describe visuals: The Modality and Redundancy Principles

- J. Evidence on methods to keep e-learning interfaces simple: The Coherence Principle
- K. Evidence on benefits of social presence in e-learning: The Personalization Principle
- L. Evidence on organization and display of content in e-learning: The Segmenting and Pretraining Principles
- M. Evidence on best practices regarding use of examples and practice in e-learning
- N. Games and simulation in e-learning

### **Assignments:**

Assignments are individual or done in learning teams. While students are free to discuss their individual assignments with anybody, including fellow students, individual assignments are expected to show the expertise, creativity and critical faculty of the individual student. Virtually identical individual assignments (in the judgment of the instructor) are not acceptable. Plagiarism is unacceptable and will be punished with an **F** for the full course. References to all source materials are necessary

The following assignments are to be handed on paper and will be reviewed, discussed and presented during class session:

**(Use the internet or e-library to complete the following five assignments)**

#### **Assignment 1:**

Prepare a 4 page paper (350 words per page) summarizing what is E-learning, history of E-Learning, what are the benefits, what are the problem(s) with the current E-learning systems. Also, please visit **Khan Academy** at ([www.khanacademy.org](http://www.khanacademy.org)) and provide an overview of it. Discuss its features and what have been the impacts of moving from traditional learning to e-learning and what is the new role of instructor.

**(2 points)**

#### **Assignment 2:**

Research the internet for a free trial educational product that supposes to improve learning, download it, test it, explore it and provide a 2 page summary of its potential to enhance learning.

**(2 points)**

#### **Assignment 3:**

Research the internet for a free trial educational assessment tool, download it, test it and provide a 2 page summary of its potential to evaluate learning.

**(2 points)**

#### **Assignment 4:**

Prepare a 5 page paper (350 words per page) surveying current research on emerging Technology-Based Educational Innovations and discuss their potential to improve and evaluate student learning.

**(2 points)**

#### **Assignment 5: (Example of selected Principle)**

This assignment will be specified later. **(2points)**

**Term paper surveying research in E-learning:**

Students will pick a sub area within the field of e-learning and write a survey of research within that area. They will also be expected to give a presentation on this area to the class. Detailed instruction will be given in class.

**(5 points)**

**Participation:**

Class participation, as expressed in active and constructive involvement in what is happening in class. **(5 Points)**

**Project:**

Students will select a school that requires a design and development of an e-course. You will develop a written proposal for the project and design an **effective** e-course that meets the user's needs. Detailed instruction will be given in class.

**(10 points)**

**Exams: (70 points)**

-mid term exam:

-Final exam :

**Sample Grading Scale:**

90-100	A	85-89	A-
80-84	B+	75-79	B
70-74	B-	65-69	C+
00-64	C		

**Text Book**

Clark, R.C. and Mayer, R.E. (2011). E-Learning and the Science of Instruction: Proven Guidelines for Consumers and Designers of Multimedia Learning. Second Edition, San Francisco, CA: Pfeiffer.

Duffy and McDonald (2010). Teaching and Learning with Technology, Fourth Edition, Allyn and Bacon.

## **Recommended Text and Reference**

- 1- Dede, C. and Richard, J. (2012). Digital Teaching Platforms: Customizing Classroom Learning for Each Student. New York: Teachers College Press.
- 2- Schank, R. C. (2002). Designing World-Class E-Learning : How IBM, GE, Harvard Business School, And Columbia University Are Succeeding At E-Learning. New York: McGraw-Hill
- 3- Alessi and Trollip :Multimedia for Learning Methods and Development, third edition 2001 , Allyn and Bacon.
- 4- Allen, M.W. (2003). *Michael Allen's guide to e-learning*. Hoboken, New Jersey: John Wiley & Sons, Incorporated.
- 5- Morrison, G.R., Ross, S.M., & Kemp, J.E. (2004). *Designing effective instruction*. Hoboken, New Jersey: John Wiley & Sons, Incorporated.
- 6- Hughes, M., & Burke, L. (2001). Usability testing of web-based training. In B.H. Khan (Ed.), *Web-based training* (pp. 531-536). Englewood Cliffs, NJ
- 7- Dunn, R., & Dunn, K. (1992) Teaching elementary students through their individual learning styles. Boston: Allyn and Bacon.
- 8- Simon Hooper : AuthorWare , introduction to multimedia, 2<sup>nd</sup> edition 1999.
- 9- eLearningGuild (2006). *Future Directions in e-Learning Research Report 2006*, [www.eLearningGuild.com](http://www.eLearningGuild.com)
- 10- IEEE Transactions on Learning Technologies
- 11- International Society for Technology in Education <http://www.iste.org/>
- 12- The National Educational Technology Standards (NETS) <http://cnets.iste.org/>
- 13- JCAL (journal of computer assisted learning ) (Blackwell publishing)
- 14- Flash 8 Tutorial <http://www.adobe.com/products/flash>
- 15- Module games produced to Moodle: [http://docs.moodle.org/en/Game\\_module](http://docs.moodle.org/en/Game_module)
- 16- Khan Academy <http://khanacademy.org>

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*All of the following are important in the evaluation of a student's work.*

### Written Reports:

- \* organization, clarity and continuity.
- \* quality, completeness and soundness of the analysis
- \* quality of presentation.

### Oral Presentation:

- \* organization and continuity.
- \* selection and support of recommendations.
- \* time, style and clarity.
- \* professionalism.

## **Note:**

- **This course is a Masters level course. It will be conducted as a lecture and a seminar. Students are expected to come to each session prepared to participate and even lead the discussions.**
- **The instructor can make changes to this syllabus when necessary.**
- **University regulations will be preserved at all times.**