



EDU203 - Material Design in Education Course Syllabus

| | |
|----------------------------------|---|
| Course Name | Material Design in Education |
| Course Code | EDU203 |
| Type of Course | Compulsory |
| Course Level | Undergraduate |
| ECTS Credits | 5 |
| Weekly Theory Hour | 2 |
| Weekly Practice Hour | 2 |
| Weekly Laboratory Hour | - |
| Year | 2013 |
| Term | SPRING |
| Instructor (s) | Assist. Prof. Dr. Dr. Seren Başaran |
| Teaching System | Lecturing. This course utilizes the Moodle course management system to share information and resources. To access the course site, log on to this link: http://elearning.gau.edu.tr and select the course from list of courses. All course materials will be posted here. |
| Education Language | ENGLISH |
| Prerequisite Course | EDU210 |
| Other Recommended Matters | - |
| Training Status | - |
| Course Objectives | The major goals of this course are: <ol style="list-style-type: none"> 1. Generate instructional goals by conducting a needs analysis of learner, task, and situational characteristics; 2. Generate an appropriate evaluation of the instructional design project by identifying and following formative evaluation procedures; 3. Choose to follow instructional design procedures; 4. Function independently and cooperatively in team development activities; 5. Compare and contrast various instructional design perspectives and philosophies. |
| Learning Outcomes | Upon successful completion of the course, students should be able to: <ol style="list-style-type: none"> 1. Specify and analyze instructional objectives, 2. Design and implement conditions for learning by applying principles, theories, and research associated with instructional systems design, message design, instructional strategies, and learner characteristics. 3. Develop instructional materials and experiences by applying principles, theories, and research related to print, audiovisual, computer based, and integrated technologies. 4. Use processes and resources for learning by applying |

| | | | |
|-----------------------------|--|---|---|
| | <p>principles, theories, and research related to media utilization, diffusion, implementations, and policy making.</p> <ol style="list-style-type: none"> 5. Plan, organize, coordinate, and supervise instructional technology by applying principles, theories, and research related to project, resource, delivery system, and information management 6. Evaluate the adequacy of instructional materials and learning by applying principles, theories and research related to problem analysis, criterion references measurement, formative and summative evaluation, and long-range planning. 7. Demonstrate the ability to facilitate equitable access to instructional materials for all learners. 8. Demonstrate the ability to apply common technology tools to create innovative learning solutions and materials 9. Define categories of instructional materials 10. Select appropriate instructional method and medium, 11. Develop group-process skills to work collaboratively 12. Develop a sense for the ethical issues in instructional material design. 13. Become successful decision makers, lifelong learners, adaptive 14. Be culturally sensitive and empathetic | | |
| Course Content | <p>Major implications of learning theories as they are applied into development of instructional materials. Major types and formats of instructional media including audio, visual, audio-visual, computers, and so on. Learning skills in selection, development, and assessment of all types of instructional media and materials. Classification of purpose, goals analysis, content creation, planning, exercises and feedback in planning, assessment planning, modern educational technologies, teaching materials selection procedures, materials design and development principles. Domain-related material development.</p> | | |
| Weekly Detailed Plan | WEEK | TOPICS | |
| | | Theoretical | Lab (Practical) |
| | 1 | <p>Introduction to Instructional Material Design Review of Instructional Design Theories Criteria for the adequacy of existing instructional materials Developing instructional materials based on an instructional strategy</p> | <p>Discussing ID models, identifying the instructional strategy in given examples Reading: Dick Carrey Model</p> |
| 2 | <p>Principles of Material Design How do humans learn? Principles of remembering</p> | <p>Assignment 1: Instructional Poster</p> | |

| | | | |
|--|----|---|--|
| | | Instructional Approaches Use of Learning objects in Instruction Role of Media and Technology in Learning Visual Design Principles Balance, Harmony, Closure, Proximity | Introducing Multimedia authoring softwares required for projects |
| | 3 | Types of Instructional Media Dale's Cone of Learning Functions of Graphics Visual Design Principles Color, Contrast, Repetition, Alignment | Applications with Adobe Fireworks & Adobe Photoshop |
| | 4 | Self-Learning Materials Characteristics and Production of Self-learning Materials Characteristics of Digital Generation Design of Instructional Materials Domains and Theories of Learning (Behaviorist, cognitivist, constructivist approaches and experiential learning) | Applications with Adobe Fireworks & Adobe Photoshop |
| | 5 | Forms of Instructional Materials Function and Role of Instructional Materials in education Cos and Pros of Various types of Instructional Materials Factors involved in material selection, evaluation and adaptation | Assignment 2: Instructional Audio Introducing Audacity (Audio Authoring Software) for creating a podcast |
| | 6 | Revision | Quiz1 |
| | 7 | Mid Term | |
| | 8 | Universal Design of Instructional Materials Types of Instructional Materials Guidelines in the Selection of Instructional Materials | Applications with Audacity |
| | 9 | Educational Technology History of Educational Technology Role, Functions and Views about Educational Technology Role of Technology in Education Brief history and evolution of computers Computer Assisted Learning | Assignment3: Video Project Introducing Windows Movie Maker |
| | 10 | Audio-Visual Materials Audio formats Selecting and utilizing audio materials Video and Film Attributes of motion media Criteria for selection of audio-visual | Applications with Windows Movie Maker |

| | | | |
|--|----|---|---|
| | | materials Use of audio-visuals in instruction | |
| | 11 | Computers Psychological bases of computer-aided- instruction Background of computers in education and instruction Roles of computers in instruction Integration with methods Advantages of computer applications in instruction Limitations of computers Types of computer applications in instruction | Assignment 4: Interactive Multimedia Project Introducing Scratch |
| | 12 | Computer based Multimedia Multimedia, Hypermedia, Virtual Reality, Games, Simulations | Applications with Scratch |
| | 13 | Communications Technology in Education, Role of Internet in Education | Quiz 2 |
| | 14 | Revision | |
| | 15 | Final | |

| | |
|--------------------------------------|---|
| Textbook/Recommended Readings | <p>Heinich, R., Molenda, M., Russell, J. D., & Smaldino, S. E. (1999). Instructional media and technologies for learning. Upper Saddle River, NJ: Prentice-Hall.</p> <p>Alessi, S. & Trollip, S. (2001) Multimedia for Learning . Needham, MA: Allyn & Bacon, 2001</p> <p>Mayer, R.E. (2001). Multimedia Learning, New York: Cambridge Univ. Press.</p> <p>Dick, W., Carry, L. & Carey, J. O. (2005), The Systematic Design of Instruction, 6th Edition, MA, Boston: Allyn and Bacon. (Chp 9)</p> <p>Adobe Fireworks CS5 Classroom in a Book: Adobe Training book Audacity. The Free, Cross-Platform Sound Editor (http://audacity.sourceforge.net)</p> <p>Scratch: http://scratch.mit.edu/</p> |
|--------------------------------------|---|

| ASSESSMENT METHODS | | |
|---------------------------|---------------|--------------------------------------|
| Term Activities | Number | Semester(Year) Contribution % |
| Assignment1 | 1 | 8 |
| Assignment2 | 1 | 8 |
| Assignment3 | 1 | 8 |
| Assignment4 | 1 | 13 |
| Quiz | 2 | 8 |
| Midterm | 1 | 20 |
| Final | 1 | 35 |
| TOTAL | | 100 |

| Percentage of Classroom Activities | | 65 | |
|---|---------------|--------------------|-------------------------------|
| Percentage of Final Activities | | 35 | |
| | TOTAL | 100 | |
| Calculation work load within the framework of learning, teaching and evaluation activities | | | |
| Activities | Number | Time (Hour) | Total Work Load (hour) |
| Weekly Theory Hour | 14 | 2 | 28 |
| Weekly Practice Hour | 14 | 2 | 28 |
| Assignment 1 | 1 | 20 | 10 |
| Assignment2 | 1 | 20 | 10 |
| Assignment3 | 1 | 20 | 10 |
| Assignment4 | 1 | 25 | 25 |
| Quiz | 2 | 5 | 10 |
| Midterm | 1 | 12 | 12 |
| Final | 1 | 20 | 20 |
| TOTAL WORKLOAD (hour)= 153 | | | |
| COURSE ECTS CREDIT=Total Work Load (hour) /(30 hour/ECTS)= 153 / 30 = 5 | | | |

Programme and learning outcomes

| Learning Outcomes (LO) | Programme Outcomes (PO) | | | | | | | | | | | | | | | | |
|-------------------------------|--------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| | PO 1 | PO 2 | PO 3 | PO 4 | PO 5 | PO 6 | PO 7 | PO 8 | PO 9 | PO 10 | PO 11 | PO 12 | PO 13 | PO 14 | PO 15 | PO 16 | PO 17 |
| LO1 | | 5 | 3 | 4 | 3 | 5 | | | 5 | | 5 | 5 | | | | | |
| LO2 | | 5 | 3 | 4 | 5 | 5 | | | 5 | | 5 | 5 | | | | | |
| LO3 | 5 | 5 | 3 | 4 | 5 | 5 | | | 5 | | 5 | 5 | | | | | |
| LO4 | 5 | 5 | 3 | 4 | 5 | 5 | | | 5 | | 5 | 5 | | | | | |
| LO5 | 5 | 5 | 3 | 4 | 5 | 5 | | | 5 | | 5 | 5 | | | | 5 | |

| | | | | | | | | | | | | | | | | |
|-----|---|---|---|---|---|---|---|---|---|--|---|---|--|---|--|--|
| L06 | | 5 | 3 | 4 | 5 | 5 | | | 5 | | 5 | 5 | | | | |
| L07 | | 5 | 3 | | 5 | | | | 5 | | 5 | 5 | | 5 | | |
| L08 | 5 | 5 | 3 | 4 | 5 | 5 | | | 5 | | 5 | 5 | | | | |
| L09 | | 5 | 3 | 4 | 4 | 5 | | | | | 5 | 5 | | | | |
| L10 | 5 | 5 | 3 | 4 | 4 | 5 | | | 5 | | 5 | 5 | | | | |
| L11 | | | | | | | 5 | | 5 | | | | | | | |
| L12 | | 5 | | | | 5 | | | 5 | | | | | | | |
| L13 | | 5 | 3 | 4 | | 5 | | | 5 | | 5 | 5 | | | | |
| L14 | | | | | | | | 5 | | | | | | 5 | | |

Contribution Level:

- 1 very low
- 2 low
- 3 medium
- 4 high

Additional Information about the Assignments(100 points each):

Individual projects are assigned to students on a specific topic and at a given grade level that is previously determined by the instructor.

Students should apply the principles of multimedia learning, instructional and visual design, and the pedagogical principles during the production of each project.

Assignment 1: Students will create an instructional poster by using Adobe Fireworks/Photoshop on a given topic assigned by the instructor.

Assignment 2: Students will create an instructional audio podcast by using Audacity on the same topic.

Assignment 3: Students will create a video including an introduction of the topic by recorded by themselves, relevant images with provided background music and related videos on the subject matter.

Assignment 4: Students will create an interactive multimedia game on the same topic by using Scratch.

CITT Department Programme Outcomes

1. Having adequate level of knowledge and skills in current/new computing and educational technologies.
2. Having sufficient communication and teaching skills in teaching profession.
3. Being able to teach updated computing technologies efficiently in English.
4. Being able to identify information technology problems through using various analysis and synthesis.
5. Being pragmatic to develop and apply persistent information technology solutions to educational and business problems.
6. Being able to use critical and computational thinking skills to produce alternative solutions at every level of project development life-cycle.
7. Being capable to work in disciplinary and interdisciplinary teamwork.

- 8.** Being sensitive, reactive and responsive to professional, social and ethical issues. Having social and ethical awareness in teaching and in providing solutions to problems.
- 9.** Having adequate level of knowledge and skills in current/new computer hardware, operating systems and computer networks.
- 10.** Adequate level of knowledge and skills in current/new programming languages, programming paradigms (procedural and object-oriented) and programming environments (visual, console-based programming).
- 11.** Being able to analyse, plan and manage educational software design and project development.
- 12.** Having the capability of evaluating and criticising educational software design and development.
- 13.** Adequate level of knowledge in using and integrating current/new e-learning and distance education systems such as learning management systems (LMS).
- 14.** Having sufficient skills and knowledge in using instructional technology and material design.
- 15.** Having skills to apply and use special teaching approaches, theories, teaching strategies, methods and techniques (such as to those people with disabilities).
- 16.** Using appropriate measurement and evaluation techniques to assess students' learning and development in addition to supporting them with good level of feedback.
- 17.** Having sufficient knowledge in the process of establishment of Republic of Turkey. Identifying social, cultural, political and economic problems through understanding Ataturk's principles and revolution.