Design and Development of Digital Learning Environments

COURSE CONTENT:

Unit 1: Blended Learning and Support Tools

1.1 E-Learning and Educational Technology

- The concept of blended learning, examples, challenges, and objectives
- The role of educational technology in blended learning

1.2 Tools for a Technology-Supported Classroom

- Blogs, Wikis, Podcasts
- Surveys with Google Forms
- Scratch, quizzes with ClassMarker
- Educational videos with VideoScribe, quiz integration with Edpuzzle
- Using MIT App Inventor and Blippar

Unit 2: Contemporary Learning Environments

2.1 Environments for Remote Synchronous Support

- Video conferencing: Skype, Zoom, Microsoft Teams
- Social networks

2.2 Environments for Massive Open Asynchronous Remote Teaching – MOOCs

Unit 3: Educational Software and Learning Environments

3.1 General Features of Knowledge Acquisition Software

- Learning environments
- Hypermedia/Multimedia
- Self-assessment/Exercises
- Simulations
- Educational games
- E-Examination environments

3.2 Open Hypermedia Learning Content Resources

- Resources like Photodentro and others

Unit 4: Stages of Educational Software Development

4.1 Development Stages (Analysis-Design-Implementation-Distribution)

4.2 Review of Design and Development Models

- Analysis
- Design
- Prototyping and Development
- Evaluation

- Software usage rights (copyrights)

Unit 5: Development and Design Tools for Multimedia Applications

5.1 Authoring Tools for Multimedia Applications

5.2 Online Multimedia Applications, Website Creation with HTML5, Hyperlink, and Hypermedia Enrichment

Unit 6: Designing and Creating a Multimedia Application with Modern Tools

6.1 Design and Creation of a Multimedia Application

- Integration of hypermedia and dynamic text

- Synthetic motion

- Drag-and-drop elements

- Quizzes, images, and videos

6.2 Linking, Integrating, and Embedding Interactive Content and Multimedia Applications in Existing Educational Environments, Platforms, or Websites

Unit 7: Summary and Application in a Practical Scenario

7.1 Presentation of Modern Tools (e.g., MIT App Inventor, Blippar) for Creating Multimedia Educational Environments

7.2 Applying Previous Units in a Model Environment in Collaboration with Students

The course aims to understand, apply, and leverage modern tools and technologies for designing and developing digital learning environments.