

ITL-817: Ubiquitous Technologies for Education

Credit Hours:

3+0

Prerequisites:

None

Course Objectives:

This course explores the integration of ubiquitous technologies, such as mobile devices, wearables, IoT, and sensor-based systems, into educational ecosystems. Students will examine how these technologies enable context-aware, personalized, and pervasive learning experiences, while also supporting administrative functions like smart campuses and data-driven decision-making. The course emphasizes both theoretical foundations and practical applications, covering design frameworks, accessibility, ethics, and privacy concerns. Through case studies and hands-on activities, students will analyze real-world implementations and envision future possibilities, preparing them to design and evaluate innovative, inclusive, and secure ubiquitous learning environments for diverse educational settings.

Course Contents:

- Introduction to Ubiquitous Computing in Education
- Mobile and Pervasive Learning Systems
- Wearables and Sensor-Based Education
- IoT in Educational Ecosystems
- Context-Aware and Location-Based Learning
- Cloud Computing and Edge Technologies in Education
- Designing Ubiquitous Learning Environments
- Accessibility and Inclusivity in Ubiquitous Education
- Ethics, Privacy, and Security in Ubiquitous Learning
- Emerging Trends in Ubiquitous Learning

Course Learning Outcomes:

At the end of the course, the students will be able to:

1. Understand foundational concepts of ubiquitous, mobile, and sensor-based technologies in education.
2. Analyze how IoT, cloud, and context-aware systems shape modern educational ecosystems.
3. Evaluate issues of accessibility, inclusivity, ethics, privacy, and security in ubiquitous learning environments.

4. Design a project-based solution that applies ubiquitous technologies to address an educational challenge.

Reference Materials/ Books:

1. *Ubiquitous Learning* by Bill Cope and Mary Kalantzis, University of Illinois Press, 2010
2. *The Internet of Things for Education: A New Actor on the Stage* by Linda Daniela, Springer, 2021
3. *IoT, AI, and ICT for Educational Applications: Technologies to Enable Education for All* by Stamatios Papadakis, Springer, 2024