

Course Content

This course introduces students to the fundamental principles and applications of computer-assisted education (CAE). It covers the historical development, types of CAE, and key technologies, including Computer-Assisted Instruction (CAI), Computer-Managed Instruction (CMI), online learning platforms, and intelligent computer-assisted instruction (ICAI). The course emphasizes the integration of computer-based education (CBE) principles with educational applications and the development process of CAE systems. Students will gain hands-on experience in designing and developing CAI courseware, online courses, and educational management systems, as well as understanding the evaluation methods used in CBE.

Key topics include:

1. **Overview of Computer-Assisted Education (CBE):** Development of CAE, its role in educational transformation, and future trends.
2. **CBE Theoretical Foundations:** Basic principles, models, and foundational theories of CBE.
3. **CAI Courseware Development:** Design and development principles of CAI, including courseware design, types, and development processes.
4. **Online Course Development:** Creation of online courses, teaching strategies, and the integration of network-based learning.
5. **CBE Evaluation:** Evaluation concepts, methods, and standards for assessing the effectiveness of CAE systems.
6. **Computer-Assisted Instruction Management (CMI):** Overview of CMI systems, their structure, applications, and role in managing educational content and assessments.
7. **Online Learning Platforms:** Introduction to platforms such as MOOCs and SPOCs, and their role in online education.
8. **Intelligent Computer-Assisted Instruction (ICAI):** Development and research trends of ICAI, and comparison with traditional CAI.
9. **Future of Computer-Assisted Education:** Latest computer technologies, their potential for enhancing education, and emerging trends in CAE.

Course Objectives

Knowledge

1. Master the foundational knowledge and principles of computer-assisted education, including its development history, types, and technologies such as CAI, CMI, and online learning platforms.
2. Understand the development process of CAE systems, and the basic methods of CBE evaluation.

Skills

1. Design and develop CAI courseware, online courses, and educational management systems using appropriate tools and technologies.
2. Analyze and solve problems related to CAE by applying principles from educational theory, computer technology, and system design.
3. Develop effective evaluation systems to assess the quality and impact of CAE systems.

Competencies

1. Select appropriate methods and tools to design and implement educational technologies that meet user needs.
2. Build and manage educational systems that integrate multiple components such as content, assessment, and feedback.
3. Apply CBE evaluation methods to assess the effectiveness of educational systems and optimize their design.