

**** Title ****

Human-Computer Interaction: Tools and Strategies (HCI)

**** CFU ****

6

**** Learning outcomes ****

Gain a foundational understanding of usability engineering principles and their application. Explore usability engineering concepts and develop the skills to conduct usability testing specifically for medical devices. Learn the fundamentals of cognitive task analysis and apply this knowledge to analyse and improve processes. Evaluate the importance of anthropometry and physiology in system design. Incorporate principles of stress, fatigue, and workload management into design practices. Learn to create personas tailored to the medical context and develop prototypes for specific medical devices.

**** Syllabus ****

Usability Engineering and Medical Device Testing

- Usability Engineering Principles

- Conducting Usability Testing for Medical Devices

- Analysis and Interpretation of Usability Test Results

Cognitive Task Analysis

- Fundamentals of Cognitive Task Analysis

- Applying Cognitive Task Analysis

- Improving System Processes through Analysis

Design Considerations

- Importance of Anthropometry and Physiology in System Design

- Designing for Stress, Fatigue, and Workload Management

- Integrating Human Factors into Design Practices

Persona Development and Prototyping

- Creating Personas for the Medical Context

- Prototyping for Specific Medical Devices

- Presenting and Evaluating Prototypes

**** Course organization & Assessment****

Lecture: 60 %, Laboratory/practice: 40%

Assessment: Essay (5000 words), medium-fidelity prototype

**** Prerequisites ****

none