



THE OHIO STATE UNIVERSITY
COLLEGE OF ENGINEERING

Cognitive Engineering Systems: Distributed and Cooperative Work

ISE 5705

Credit Hours:

3.00 - 3.00

Course Levels:

Graduate

Course Components:

Lecture

Course Description:

Provides key concepts for the design and assessment of computer supported collaborative and distributed work systems.

Prerequisites and Co-requisites:

Prereq: Sr or Grad standing, or permission of instructor.

Course Goals / Objectives:

- Learn the fundamentals of computer supported collaborative work
 - Analyze breakdowns in collaboration through the computer
 - Assess the quality of coordinated and collaborative activity
 - Know basic vulnerabilities that can lead to shallow, narrow, erroneous analyses
 - Design computer support for collaborative work
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Course Topics:

- Introduction: Coordinated and collaborative work through the computer Computer-supported collaborative work (CSCW) Coordination Breakdowns
 - Basic concepts in CSCW Common ground and situation awareness Collective sensemaking Synchronizing interdependent activities Integrating multiple perspectives
 - How CSCW changes cognitive work Alerting Diagnosis Uncertainty management Hypothesis generation Continuous adaptive planning Case: voice loops in space shuttle mission control
 - Distributed Work Architectures Case: airline dispatch and air traffic management Coordinating control, responsibility, knowledge, processing, and action over roles and groups On call architectures:
 - Communicating Intent Case: military command and control
 - Tele-Presence Cases: projecting physician presence in emergency medical services; electronic ICU
 - Handoffs Case: computer support for nursing handoffs
 - Crew Resource Management Case: Surgical teams
 - Social Informatics and Disaster Response Case: Spatio-temporal mash-ups in response to disasters
 - Integration Designing for collaboration through the computer Review of fundamental principles Does distance matter?
 - Cases from Air Traffic Management; Columbia space shuttle accident; health care Case: Large screen displays and common operating pictures
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Designation:

Elective