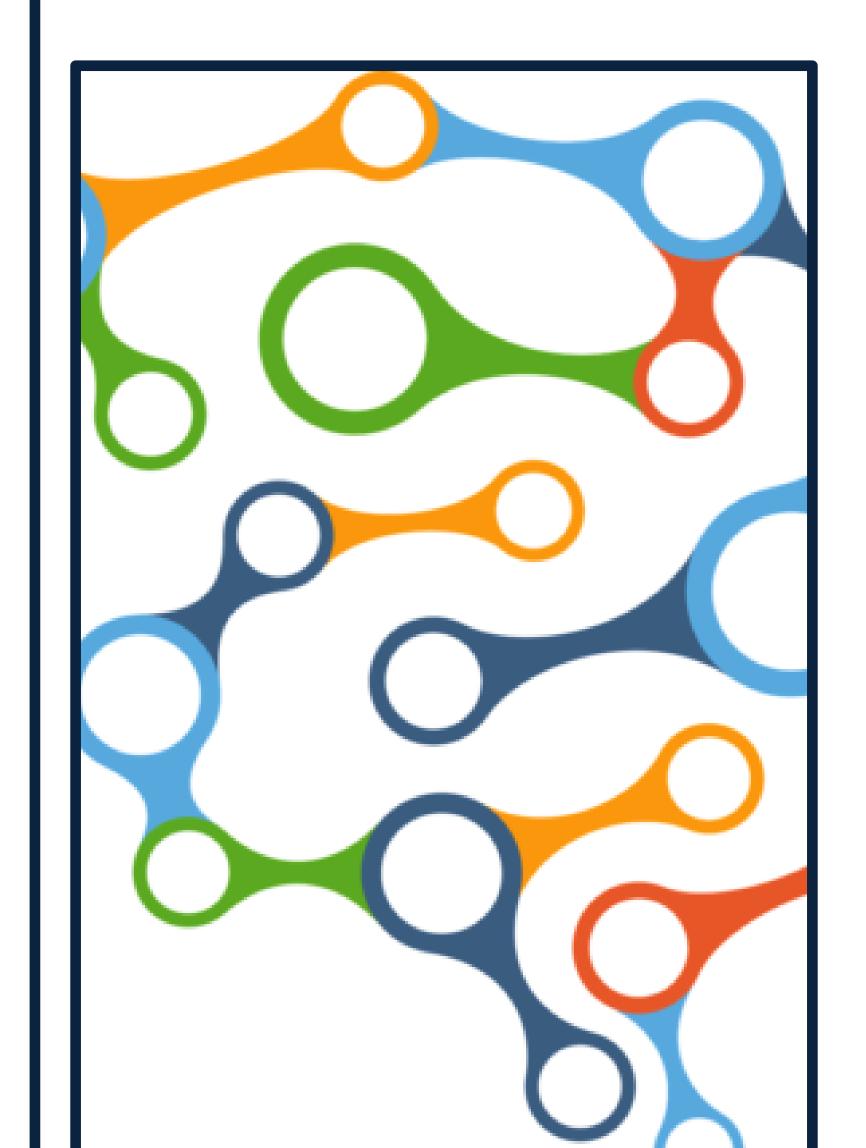# IDEM205

# Cognitive Ergonomics for Complex Systems

**Q1**

Cognitive ergonomics is traditionally concerned with mental processes, such as perception, memory, reasoning, and motor response, as they affect interactions among humans and other elements of a system. Relevant topics include mental workload, decision-making, performance, human-computer interaction, and skill acquisition. Nowadays, products and systems are becoming more and more intelligent by the use of artificial intelligence. This requires a completely new understanding of the interaction that humans have with these systems or the systems with humans. We postulate that intelligent systems and humans have different views and behaviors of the same world and that this presents a new challenge to design to find the proper balance.

These topics will be related to and examined in the context of complex systems. The course consists of two parts:

1. A theoretical part; 2. An empirical part.

Theory will be exemplified by current and past research of our faculty. The empirical part will be based on a real-life situation of an encounter with a complex system and an abstraction made of this situation. This abstraction should mimic an aspect of a real-life situation and be tested in an experimental setting. The final step is to derive the implications for the real-life situation.

**Assessment: Presentation**

**Rene van Egmond**