

SST102e Human Factors and Systems Design

Level: 1

Credit Units: 5 Credit Units

Language: ENGLISH

Presentation Pattern: EVERY SEMESTER

E-Learning: BLENDED - Learning is done MAINLY online using interactive study materials in Canvas. Students receive guidance and support from online instructors via discussion forums and emails. This is supplemented with SOME face-to-face sessions. If the course has an exam component, this will be administered on-campus.

Synopsis:

Human factors is about understanding human strengths and limitations and designing systems that fit them. SST102 Human Factors and Systems Design gives students an overview of the underlying philosophy, aims and approaches of human centered systems design. Students are introduced to the human sensory and physiological systems and cognitive processes. They are exposed to basic principles of designing and evaluating workplaces and interfaces. Issues on accidents, human error and designing for safety are also covered in this course.

Topics:

- Introduction to Human Factors and Systems Approach
- Design and Evaluation Methods
- Human Perception
- Cognition and Decision Making
- Displays Design
- Controls Design
- Engineering Anthropometry and Workspace Design
- Stress and Workload
- Safety and Accident Prevention
- Selection and Training
- Human-Computer Interaction

Textbooks:

C.D. Wickens, J.D. Lee, Y.L Liu, and S.E.G. Becker.: An Introduction to Human Factors Engineering (eTextbook) 2nd Edition, 2004 Pearson Education Prentice Hall.
ISBN-13: 9781292035512

C.D. Wickens, J.D. Lee, Y.L Liu, and S.E.G. Becker.: An Introduction to Human Factors Engineering (eTextbook) 2nd Edition, 2004 Pearson Education Prentice Hall.
ISBN-13: 9781292035512-AA

Learning Outcome:

- Define the human factors and systems approach
- Discuss the principles underlying human factors and the implications for design
- Describe human capabilities and limitations and their relevance to systems, workplace and environmental design
- Explain human-machine system design principles
- Identify and make effective recommendations to correct human factors deficiencies in existing human-machine-workplace-environment system
- Illustrate how human factors principles are applied to deal with safety in the workplace
- Show how different human factors methods are appropriately applied for evaluation, design and research

Assessment Strategies:

Continuous Assessment Component	Weightage (%)
PRE-CLASS QUIZ	2
PRE-CLASS QUIZ	2
PRE-CLASS QUIZ	2
QUIZ	8
GROUP BASED ASSIGNMENT	16
Sub-Total	30

Examinable Component	Weightage (%)
Written Exam	70
Sub-Total	70

Weightage Total **100**