

# Human-Centred Manufacturing and Usability

Sommer

HCAMU

(in German: Human-Centred Manufacturing and Usability )

**Module-ID: FIN-INF-120512**

| Abbreviation | Credit Points | Semester | Term | Duration   | Language | Level  |
|--------------|---------------|----------|------|------------|----------|--------|
| HCMU         | 6             | Sommer   | 2.   | 1 Semester | english  | Master |

|                                     |                                                                                                                                                                                                                                                                         |
|-------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Link:</b>                        | <a href="#">LSF</a>                                                                                                                                                                                                                                                     |
| <b>Limited accessibility:</b>       |                                                                                                                                                                                                                                                                         |
| <b>Responsibility:</b>              | Ernesto William De Luca                                                                                                                                                                                                                                                 |
| <b>Lecturer:</b>                    | Marianna Ciccarelli                                                                                                                                                                                                                                                     |
| <b>Classes:</b>                     | Lecture/Exercise: <i>Human-Centred Manufacturing and Usability</i>                                                                                                                                                                                                      |
| <b>Applicability in curriculum:</b> | <ul style="list-style-type: none"><li>- M.Sc. INF: Informatik</li><li>- M.Sc. INGINF: Informatik</li><li>- M.Sc. WIF: Informatik</li><li>- M.Sc. DKE: Applied Data Science</li><li>- M.Sc. DE: Fachliche Spezialisierung</li><li>- M.Sc. VC: Computer Science</li></ul> |

## Intended learning outcomes:

The students ...

- have theoretical and practical skills for the evaluation and design of safe, efficient, and human-centered work environments

- can apply principles of Human-Centered Design and Human-Centered Manufacturing
- understand risk assessment methodologies

### Content:

The course aims to provide both theoretical and practical skills for the evaluation and design of safe, efficient, and human-centered work environments. It will cover key concepts related to health and safety in industrial settings, with a particular focus on risk prevention and the integration of human resources into Industry 4.0 processes. Special attention will be given to the principles of Human-Centered Design and Human-Centered Manufacturing, with an introduction to occupational ergonomics and methods for analyzing physical and cognitive ergonomics. The course will also explore risk assessment methodologies, including applications in human-robot collaboration, as well as user-machine interaction paradigms and usability concepts. Learning activities are supported by hands-on exercises in ergonomic analysis and usability testing.

### Workload:

- block course
- 40 contact hours + 140 hours self study

| Pre-examination requirements: | Type of examination:        | Teaching method / lecture hours per week (SWS): |
|-------------------------------|-----------------------------|-------------------------------------------------|
|                               | Written report (Hausarbeit) | 4 SWS Lecture/Exercise                          |

| Prerequisites according to examination regulations: | Recommended prerequisites: |
|-----------------------------------------------------|----------------------------|
| keine                                               |                            |

| Media: | Literature: |
|--------|-------------|
|        |             |

### Comments:

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