# Bachelor seminar Predictive Maintenance

every

(in German: Bachelorseminar Predictive Maintenance )

## Module-ID: FIN-INF-110524

| Abbreviation | Credit Points | Semester | Term | Duration | Language | Level |
|---|---|---|---|---|---|---|
| PREDMA_BSEM | 5 | every | ab 3. | 1 Semester | english | Bachelor |

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|---|---|
| **Link:** | LSF |
| **Limited accessability:** | true |
| **Responsibility:** | Prof. Dr. Myra Spiliopoulou, Prof. Dr.-Ing. Benjamin Noack |
| **Lecturer:** | Prof. Dr. Myra Spiliopoulou, Prof. Dr.-Ing. Benjamin Noack |
| **Classes:** | • Seminar *PredMa_BSeminar* |
| **Applicability in curriculum:** | - B.Sc. INF: Informatik - Wahlpflicht<br>- B.Sc. INF: Studienprofil: Künstliche Intelligenz<br>- B.Sc. CV: Informatik - Wahlpflicht<br>- B.Sc. INGINF: Informatik - Wahlpflicht<br>- B.Sc. WIF: Gestalten und Anwenden - Wahlpflicht<br>- B.Sc. INF (bilingual): Informatik - Wahlpflicht |

**Intended learning outcomes:**
When successfully completing this seminar, the students can:

- read scientific articles given to them on introductory topics of predictive maintenance
- discuss these articles and reflect on them

- compare the methods that appear in these articles and discuss the pros and contra of each method in comparison to other methods
- summarize article contents on predictive maintenance in a report and present them
- formulate questions on these articles and answer questions formulated by other seminar participants

**Content:**
In this seminar, the participants will learn about

- challenges and methods for data acquisition in industrial processing
- data analysis tools in predictive maintenance
- process modeling, fault detection, and state prediction

**Workload:**
28 h in presence (consultation meetings, presentations) / 96 h self-study for:

- Reading and Understanding of Provided Papers
- Writing an essay
- Presentation and question answering

| Pre-examination requirements: | Type of examination: | Teaching method / lecture hours per week (SWS): |
|---|---|---|
| | Referat | Seminar (2 SWS) |

| Prerequisites according to examination regulations: | Recommended prerequisites: |
|---|---|
| none | • Linear Algebra and Calculus<br>• Underpinnings of data analytics<br>• Underpinnings of signal processing |

| Media: | Literature: |
|---|---|
| | Scientific articles on Predictive Maintenance;<br>choice of articles depends on topic assignment and is given to each student together with the assignment |

**Comments:**

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