

**Modulbezeichnung:** Integrated Production Systems (Lean Management) (IPS) **5 ECTS**  
(Integrated Production Systems (Lean Management))

Modulverantwortliche/r: Jörg Franke

Lehrende: Jörg Franke

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|-----------------------------|-----------------------|------------------------------|
| Startsemester: WS 2022/2023 | Dauer: 1 Semester     | Turnus: halbjährlich (WS+SS) |
| Präsenzzeit: 60 Std.        | Eigenstudium: 90 Std. | Sprache: Englisch            |

#### Lehrveranstaltungen:

Lecture, Course at the Virtual University of Bavaria (vhb). For participation a registration at the vhb is necessary!  
Integrated Production Systems (vhb) (WS 2022/2023, Vorlesung, 4 SWS, Jörg Franke)

#### Es wird empfohlen, folgende Module zu absolvieren, bevor dieses Modul belegt wird:

BWL für Ingenieure  
Produktionstechnik I + II

#### Inhalt:

- Concepts and Success Factors of Holistic Production Systems
- Production organization in the course of time
- The Lean Production Principle (Toyota Production System)
- The 7 Types of Waste (Muda) in Lean Production
- Visual management as a control and management instrument
- Demand smoothing as the basis for stable processes
- Process synchronization as the basis for capacity utilization
- Kanban for autonomous material control according to the pull principle
- Empowerment and group work
- Lean Automation - "Autonomation"
- Fail-safe operation through Poka Yoke
- Total Productive Maintenance
- Value stream analysis and value stream design
- Workplace optimization (lean manufacturing cells, U-Shape, Cardboard Engineering)
- OEE analyses to increase the degree of utilization
- Quick Setup (SMED)
- Implementation and management of the continuous improvement process (CIP, Kaizen)
- Overview of quality management systems (e.g. Six Sigma, TQM, EFQM, ISO9000/TS16949) and analysis tools for process analysis and improvement (DMAIC, Taguchi, Ishikawa)
- administrative waste
- Specific design of the TPS (e.g. for flexible small-batch production) and adapted implementation of selected international corporations

#### Lernziele und Kompetenzen:

After successfully attending the course, students should be able to

- Understand the importance of holistic production systems;
- Understand and evaluate Lean Principles in their context;
- to evaluate, select and optimise the necessary methods and tools;
- To be able to carry out simple projects for the optimisation of production and logistics on the basis of what has been learned in a team.

#### Verwendbarkeit des Moduls / Einpassung in den Musterstudienplan:

Das Modul ist im Kontext der folgenden Studienfächer/Vertiefungsrichtungen verwendbar:

##### [1] Berufspädagogik Technik (Master of Education)

(Po-Vers. 2020w | TechFak | Berufspädagogik Technik (Master of Education) | Gesamtkonto | Wahlpflichtmodule  
Fachwissenschaft | Wahlpflichtmodule (Vertiefungsmodule) | Integrated Production Systems)

#### Studien-/Prüfungsleistungen:

Integrated Production Systems (Prüfungsnummer: 71231)

(englische Bezeichnung: Integrated Production Systems)

Prüfungsleistung, Klausur, Dauer (in Minuten): 90

Anteil an der Berechnung der Modulnote: 100% Prüfungssprache: Englisch

Erstablesung: WS 2022/2023, 1. Wdh.: SS 2023

1. Prüfer: Jörg Franke

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**Organisatorisches:**

Only the following aids are allowed during the test:

- non-programmable calculator
- indelible pens
- highlighter
- ruler, triangle ruler, compass
- name stamp

No other aids are permitted (this applies in particular to smartwatches, mobile telephones or other electronic devices).