Modulbezeichnung:	**Integrated Production Systems (Lean Management) (IPS)** (Integrated Production Systems (Lean Management))	**5 ECTS**
Modulverantwortliche/r:	Jörg Franke	
Lehrende:	Jörg Franke	

Startsemester: WS 2021/2022	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 2021/2022, 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)

Dieses Modul ist daneben auch in den Studienfächern "Berufspädagogik Technik (Bachelor of Science)", "International Production Engineering and Management (Bachelor of Science)", "Maschinenbau (Bachelor of Science)", "Maschinenbau (Master of Science)", "Mechatronik (Bachelor of Science)", "Mechatronik (Master of Science)", "Wirtschaftsingenieurwesen (Bachelor of Science)", "Wirtschaftsingenieurwesen (Master of Science)" verwendbar.

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

Erstablegung: WS 2021/2022, 1. Wdh.: SS 2022
1. Prüfer: Jörg Franke

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).