**HOCHSCHULE FURTWANGEN UNIVERSITY**

**Course of studies:** Business Consulting Master

**Title** | Special Topics in Operations and Supply Chain Management  
**Lecturer** | Prof. Dr. Thomas Marx  

**Schedule**  
<table>
<thead>
<tr>
<th>1st Semester</th>
<th>2 SWS</th>
<th>3 Credits</th>
<th>Elective Subject</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Workload</strong></td>
<td>total 90 h</td>
<td>presence 30 h</td>
<td>preparation and after-work 45 h</td>
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</tbody>
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**Level**  
- Computer Science: low  
- Business Administration: low  
- Basic Skills: medium  
- Key Qualifications: medium  

**prerequisites**  
none

**Educational Objectives**  
- Understanding the main issues of Operations and Supply Chain Management  
- Understanding special topics in deepness  
- Understanding interactions and dependencies of functions  
- Setting a broad base for understanding overall relationships

**Content**  
- Process design, special topics: WIP, utilization, Little’s law, Pareto charts  
- Locating facilities, special topics: balancing capacities, break even analysis of capacity expansion, Cost-Profit-Volume analysis  
- Managing constraints, special topics: Theory of constraints (TOC), Drum-Buffer-Robe (DBR), Product mix decisions  
- Capacity planning, special topics: Overall equipment effectiveness (OEE), Cost Volume Analysis  
- Inventory Management, special topics: Economic order quantity (EOQ), Economic production quantity, ABC Analysis, holding cost, ordering cost, working capital cost, quantity discounts, reorder level, lead time distribution  
- Forecasting, special topics: Linear regression, multiple regression, seasonal components and fluctuations, mean squared error, MAD, MAPD, tracking signal  
- ERP Systems, special topics: SOP, MPS, MRP, BOM, MRP Netting process, backward scheduling, Available to promise, lead times, lot sizing rules  
- Project Management, special topics: Work breakdown structures, activity on nodes network, earned-value control, budgeted cost of work scheduled, actual cost of work performed, schedule and cost variance, CPI, SPI, CPM, critical path, float, activity slack, crashing networks

**Recommended Textbooks**  

**Teaching Methods**  
- Lectures  
- Practical Exercises

**Grading**  
- Written examination 70 %  
- Seminar presentation 30 %