In this package, you will learn how to model and analyze various business operations and processes, and how to solve the resulting decision problems. It is recommended (but not obligatory) to follow the courses in this package when you plan to enter the Master Operations Management & Logistics. When you consider entering this Master, this package will give you a good idea of the kind of courses you will encounter in that Master.

One of the courses is designed to develop your skills in the field of quantitative modeling and analysis: Quantitative modeling & analysis of business processes. The other two are focused on important applications domains: Transportation & distribution and Maintenance and service logistics. It is possible to take Transportation & distribution already in the first year.

### Course description

**Transportation & distribution (1CK00)**  
This exciting course introduces the student to the world of transport and distribution. We start with discussing the key transport and distribution functions within companies. The important transport activities are reviewed in detail. Special attention is given to the planning and control of the transportation function in the supply chain. Topics include multi-modal transport, vehicle routing, traveling salesman and city logistics. Next to studying basic concepts in logistics, planning and scheduling, a significant part of the course is devoted to the design and implementation (programming) of mathematical models (Integer Linear Programming) for basic transportation problems.

**Quantitative modeling & analysis of business processes (1CK20)**  
This course helps students to learn how mathematical models and statistical techniques can be applied to analyze and improve decisions on the design and control of business processes.

**Maintenance and service logistics (1CK60)**  
At many companies, processes depend on the availability of certain technical systems. Think of medical equipment, airplanes, and production lines. How does one keep such systems up and running? And how does one do that in an efficient way? One does this via smart maintenance concepts, leading to a reduced number of failures, and via a smart approach to quickly solve the remaining failures. It is further important to ensure that the right spare parts are available to perform the maintenance. We introduce mathematical models for these problems and the tools to analyze and optimize the models.