


5.00 credits	30.0 h	Q2
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Teacher(s)	Agrell Per Joakim ;
Language :	English
Place of the course	Louvain-la-Neuve
Prerequisites	This course is reserved for students with a bachelor's degree in business engineering or students with equivalent quantitative method skills.
Main themes	The course provides an indepth treatment of the relationships between independent firms in a supply chain through the analysis of their behavior, contractual frame, product, process and market choices. The first part of the course aims at understanding and modelling the strategic behavior between firms using the tools of LSM2031 and game theory in order to understand how to design the features and parameters of supply chain information. The second part looks at supplier relationships from a strategic perspective, interfacing with procurement, production planning and product innovation, to understand the scope and limits of the previously defined tools in contexts such as e.g. armslength, partnerships and supplier pools. Strategic sourcing is a collaborative and systematic approach to reduce external spending, while improving quality, internal processes and total cost of ownership or usage.
Learning outcomes	<p>At the end of this learning unit, the student is able to :</p> <p>During their programme, students of the LSM Master's in management and Master's in Business engineering will have developed the following capabilities :</p> <p>KNOWLEDGE AND REASONING</p> <ul style="list-style-type: none"> • Master highly specific knowledge in one or two areas of management : advanced and current research-based knowledge and methods. <p>A SCIENTIFIC AND SYSTEMATIC APPROACH</p> <ul style="list-style-type: none"> • Perceptively synthesize the essential elements of a situation, demontsrating a certain conceptual distance, to diagnose and identify pertinent conclusions. <p>WORK EFFECTIVELY IN AN INTERNATIONAL AND MULTICULTURAL ENVIRONMENT</p> <ul style="list-style-type: none"> • Position and understand the functioning of an organization, in its local and international socio-economic dimensions and identify the associated strategic issues and operational decisions. <p>TEAMWORK AND LEADERSHIP</p> <ul style="list-style-type: none"> • Work in a team :Join in and collaborate with team members. Be open and take into consideration the different points of view and ways of thinking, manage differences and conflicts constructively, accept diversity.

Evaluation methods	<p>Continuous evaluation</p> <ul style="list-style-type: none"> • Two group projects with modelling and quantitative analysis (2 x 20%) • Type of evaluation: written report <p>Evaluation week</p> <ul style="list-style-type: none"> • Oral: <i>No</i> • Written: <i>No</i> • Unavailability or comments: <i>No</i> <p>Examination session</p> <ul style="list-style-type: none"> • Oral: <i>No</i> • Written: <i>Yes (2 hours), closed book, one page of personal notes allowed.</i> <p>Term paper</p> <ul style="list-style-type: none"> • Scope: the final exam can be substituted by a term paper on a topic on supply chain coordination (models, methods, practice). • The term paper is an individual, well-edited report in English that follows a structure outlined in the course plan, with a clear and individual contribution. • The term paper topic has to be approved by the instructor by a deadline specified in the course plan and on Moodle. • Evaluation: Written report and oral presentation. <p>Case points valid for the current year and the following (if >10/20). If the case grade is <10/20, the exam counts for 100% of the final grade.</p> <p>Individual make-up projects available at request to replace the grade of the lowest graded project.</p>
Teaching methods	The class is mainly analytical and based on modern readings in the area. The sessions are devoted to theoretical discussions of selected aspects and debriefs of cases and assignments. Applied examples for the concepts using real firms, newspaper clips and numerical illustrations are provided at the lectures. At some occasions, interactive games are used to illustrate the intuition or complexity of certain models. Inbetween lectures, participants work on the reading assignments and the course cases.
Content	The purpose of the course is to provide analytical skills in supply chain coordination techniques. The base models will be primarily the standard newsboy model for inventory management and simple two-period investment-production models for the strategic game models. Some topics that will be studied: <ul style="list-style-type: none"> # Mechanisms for coordination (Information, Relational, Contractual) # Quantity Discounts # Buy-back contracts # Revenue Sharing # Price Protection and Quantity Flexibility # Game-theoretical models in supply chain coordination # Hold-up problems (investment, inventory) # Investment incentives for product and process innovation
Inline resources	Moodle webpage
Bibliography	All required teaching material and supplementary texts available on Moodle.
Other infos	Prerequisites (ideally in terms of competencies) LSM2030 LSM2031 LSM2032 The course requires active skills in modelling and coding of optimization problems in a software such as AIMMS, Xpress, GAMS, R or similar.
Faculty or entity in charge	CLSM

Programmes containing this learning unit (UE)				
Program title	Acronym	Credits	Prerequisite	Learning outcomes
Master [120] : Business Engineering	INGE2M	5		
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