

5.00 credits	30.0 h + 15.0 h	Q2
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Teacher(s)	Mareschal Bertrand (compensates Meskens Nadine) ;Meskens Nadine ;Tancrez Jean-Sébastien (coordinator) ;
Language :	French
Place of the course	Mons
Prerequisites	<ul style="list-style-type: none"> <li>• Linear programming</li> <li>• Basics in probability</li> </ul> <p><i>The prerequisite(s) for this Teaching Unit (Unité d'enseignement – UE) for the programmes/courses that offer this Teaching Unit are specified at the end of this sheet.</i></p>
Main themes	<ul style="list-style-type: none"> <li>• Multi-objective optimization</li> <li>• Multi-criteria decision support methods</li> <li>• Stochastic modeling and uncertainty management</li> <li>• Queuing theory</li> </ul>
Learning outcomes	<p><b>At the end of this learning unit, the student is able to :</b></p> <p>Given the « competencies referential » linked to the LSM Bachelor in Management and Business Engineering, this course mainly develops the following competencies:</p> <ul style="list-style-type: none"> <li>• 2. Acquire a knowledge base</li> <li>• 3. Apply a scientific approach</li> <li>• 6. Become a team player</li> <li>• 8. Communicate</li> </ul> <p>1 At the end of the class, the student will be able to:</p> <ul style="list-style-type: none"> <li>• make decisions on a quantitative basis in a digital world</li> <li>• analyze an optimization problem with multiple criteria</li> <li>• find the balance between several discordant goals</li> <li>• apply appropriate techniques to assist in decision-making in the presence of multiple criteria</li> <li>• understand the impact of uncertainty on operational problems</li> <li>• model simple systems influenced by hazards</li> <li>• discover the optimal policy to choose in an uncertain environment</li> </ul>
Bibliography	<ul style="list-style-type: none"> <li>• HILLIER F.S. and LIEBERMAN G.J. (2010), Introduction to Operations Research, 9th edition, McGraw-Hill.</li> <li>• WINSTON W.L. (2004), Operations Research : Applications and Algorithms, Duxbury Press.</li> <li>• POMEROL J.C., BARBA-ROMERO S. (1993), Choix multicritère dans l'entreprise, Hermes.</li> </ul>
Faculty or entity in charge	CLSM

<b>Programmes containing this learning unit (UE)</b>				
Program title	Acronym	Credits	Prerequisite	Learning outcomes
Bachelor : Business Engineering	<a href="#">INGM1BA</a>	5	<a href="#">MQANT1227</a>	