








5.00 credits

30.0 h + 30.0 h

Q2

Teacher(s)	Bronchart Nicolas ;
Language :	English > French-friendly
Place of the course	Louvain-la-Neuve
Main themes	<ul style="list-style-type: none"> • Quality: definition & history • Company strategy and Quality strategy • The position of Quality within an organization; alignment between culture, organization and strategy • Quality Management & Quality Management Systems (QMS): principles, evolution and quality improvements methods • From Quality management to management (safety, environment, human resources, CSR,...)
Learning outcomes	<p>At the end of this learning unit, the student is able to :</p> <p>With respect to the reference AA of the programme of studies "Masters degree in Mechanical Engineering", this course contributes to the development and acquisition of the following skills:</p> <ul style="list-style-type: none"> • AA2.3, AA2.5 • AA4.1, AA4.3, AA4.4 • AA5.1, AA5.3, AA5.6 • AA6.1, AA6.2 <p>1 Specific learning outcomes of the course:</p> <p>At the end of the course, the student will be able to</p> <ul style="list-style-type: none"> • Define what is Quality, how it impacts an organization (through products, processes, people), including historical and cultural aspects; • Illustrate the links between Quality Management and Strategy, including aspects such as HR Management, R&D Strategy, Investments' Strategy or in general Leadership aspects; • Choose a Quality Improvement tool and apply it to a specific situation • Define a long term Quality Management Strategy, and implement it through an enterprise simulation.
Evaluation methods	<p>The final grade will be based on:</p> <ul style="list-style-type: none"> • The participation to the enterprise simulation (50%) including the final group presentation (either through an oral presentation, or as a written report). This portion of the final grade will be given to the whole group; • An examination (50%). The exam will be either oral or written, depending on the number of students and general class organization. <p>There is also the possibility to replace part of the final grade with a personnel work on a given subject (book, specific theme). This possibility will have to be discussed as a case-by-case basis for specific situations</p>
Teaching methods	<p>The course is based on lectures, illustrated by case studies and examples from companies and actual situations. Speakers from different companies and backgrounds will be invited to illustrate some topics and give different examples and visions, from various industries and markets (pharma, medical devices, automotive, services, food,...) Physical presence at the class is essential to benefit fully of the exchanges on the various subjects.</p> <p>During the exercise periods, students will get the opportunity to practice the concepts presented. They will participate in a business simulation game that will allow them to play the role of managers / leaders, as a management team. These sessions will be in the form of a group work through an online platform and participation during practical workshops in class.</p>
Content	<ol style="list-style-type: none"> 1. The Origins: definition and historical perspectives. How did we reach the current situation, and where could we go next? Examples to show the impact of Quality Management going poorly or making a difference. 2. Company Strategy: models, content, goals / necessity, objectives; why is it important to have a strategy? What are the existing models? What is included in such a strategy? 3. Quality Strategy & Operations: how is Quality integrated in a global company and a company strategy. How does it impact competitiveness, and the critical importance of the holistic view when taking strategic decisions. Roles & Responsibilities of Quality Control (QC), Quality Assurance (QA), Regulatory Affairs (RA), Release, and Continuous Improvements. 4. Quality Management Systems (QMS): definition, content, examples. How does one manage Quality at mid and long term in companies? How does one implement continuous improvement and operational excellence? Examples of some Quality management Systems (6 Sigma, TPS, Lean...)

	5. From Quality Management to Management: Safety, Environment, CSR, new types of organizations,... Show the criticality of leadership to move companies in the right direction, through shaping a Culture based on Quality, satisfaction of all stakeholders (customers, employees, shareholders, planet and society), adapting to the constantly changing environment
Inline resources	https://moodleucl.uclouvain.be/course/view.php?id=8305
Bibliography	<ul style="list-style-type: none"> • « The Goal : A Process of Ongoing Improvement », E. M. Goldratt, 2014 (or previous editions) • « Processus et Entreprise 2.0 - Innover par la collaboration et le Lean management », Yves Caseau, 2011 • « Quality Management for organizational excellence: introduction to total quality », David Goetsch & Stanley Davis, 2012 • « This is Lean », N. Modic & P. Ahlstrom, Rheologica Publishing, 2014 • « Le Joueur de Flux », J.-F. Brunet, L'Harmattan, 2022 • « Team Topologies: Organizing Business and Technology Teams for Fast Flow », M. Skelton, IT Revolution Press, 2019 • « Responsabilité Sociétale de l'Entreprise: Faut-il enchaîner Promothée? », P. de Woot, Economica, 2004
Faculty or entity in charge	MECA

Programmes containing this learning unit (UE)				
Program title	Acronym	Credits	Prerequisite	Learning outcomes
Master [120] in Biomedical Engineering	GBIO2M	5		
Master [120] in Statistics: Biostatistics	BSTA2M	5		
Master [120] in Mechanical Engineering	MECA2M	5		
Master [120] in Chemistry and Bioindustries	BIRC2M	5		
Master [120] in Electro-mechanical Engineering	ELME2M	5		
Master [120] in Mathematical Engineering	MAP2M	5		
Master [120] in Agricultural Bioengineering	BIRA2M	5		
Master [120] in Energy Engineering	NRGY2M	5		