




5.00 credits

30.0 h

Q2

Teacher(s)	Hazée Simon ;
Language :	English
Place of the course	Louvain-la-Neuve
Prerequisites	<i>Basic knowledge in mathematics and statistics (including multivariate statistical analysis using supporting statistical software).</i>
Learning outcomes	<p><b>At the end of this learning unit, the student is able to :</b></p> <p>The main objective of this course is to help students become reflective, responsible business leaders making sound data-driven decisions. This course accordingly helps bridge the gap between managers and data scientists. In particular, students – after taking this course – should be able to:</p> <ul style="list-style-type: none"> <li>• Understand the current digital ecosystem and the important role of data in business;</li> <li>• Understand what is big data, what sources can be used for data collection, and what types of data are available for analysis;</li> <li>• Understand the “big data” challenges, from data extraction and transformation (e.g., database connections and query) to data analysis and interpretation;</li> <li>• Define ethical guidelines for the use of personal customer data.</li> <li>• Identify the right data and digital analytics techniques for specific business problems;</li> <li>• Understand and conduct specific statistical techniques for digital data analysis;</li> <li>• Obtain insights from data and turn them into strategic decision-making;</li> <li>• Assess return on business efforts/investments;</li> </ul>
Evaluation methods	<p>Students' performance is assessed based on:</p> <ul style="list-style-type: none"> <li>• <i>partial continuous evaluation (60% of the final score)</i>, including group activities (e.g., case studies, Accenture business analytics challenge) and class participation</li> <li>• <i>an individual written exam (40% of the final score)</i> with essay questions, taking place during the mid-term week</li> </ul>
Teaching methods	<p>The course includes theoretical lectures, case studies, practical exercises, and guest lectures by practitioners from top companies. This CEMS course is practice-oriented. Most concepts and analytical techniques discovered throughout this course will be taught through use-cases and how-to examples, using different business intelligence and statistical software. Students will also have the opportunity to take part in a business analytics challenge co-organized with Accenture.</p> <p>The professor reserves the right to adapt the course format and eventually opt for a blended learning format that combines online and in-class activities.</p> <p>Students are required to carry out preparatory work prior to some sessions, and to take an active role in class discussions</p>
Content	<p>In today's digital economy, an unprecedented vast amount of data is available to companies, including for instance data on how consumers feel, behave, interact with brands, and respond to business efforts. Data is even being called the “oil” of the digital economy. How to effectively capture, store, and leverage data to support business decisions yet remains a key challenge for numerous companies. This course accordingly explores the growing important role of data in business and how companies can develop competitive advantages and achieve impact through data.</p> <p>This course teaches widely-used frameworks of business analytics including descriptive analytics, predictive analytics, and inquisitive analytics (experimentation). Students then implement these frameworks through exercises and case studies to solve various business problems related to customer behavior/churn prediction, digital ads optimization, sales and website traffic prediction, customer segmentation, and business performance assessment, among others. Particular attention is paid to corporate digital responsibility, that is the legal and ethical issues behind data gathering, storage and usage.</p> <p>Analytics approaches and techniques covered in this course include data preparation with Excel (Power Query), data visualization - considered as a key tool to make (big) data more understandable - using advanced business intelligence tools (Tableau or Power BI), as well as statistical and data mining tools (SAS Enterprise Miner or KNIME). Students will learn and use these techniques to leverage and turn data into relevant business insights.</p> <p>The ultimate goal of this course is to help students become “link creators”, that is people who have the ability to envision how data can be used to enhance the business and create value, have enough mastery of business analytics to be able to lead discussions with data specialists, and have the ability to act on that vision by making sound data-driven responsible decisions.</p>

<p>Bibliography</p>	<p><i>Recommended readings</i></p> <p><b>Textbooks:</b></p> <ul style="list-style-type: none"> <li>• Winston, W. L. (2014), "Marketing Analytics – Data-Driven Techniques with Microsoft Excel", John Wiley &amp; Sons Inc.</li> <li>• Pauwels, K. (2014), "It's Not the Size of the Data – It's How You Use It: Smarter Marketing with Analytics and Dashboards", AMACOM.</li> <li>• Provost, F., &amp; Fawcett, T. (2013), "Data Science for Business – What You Need to Know About Data Mining and Data-Analytic Thinking", O'Reilly Media Inc</li> </ul> <p><b>Scientific and managerial articles (exhaustive list available on Moodle):</b></p> <ul style="list-style-type: none"> <li>• Balducci, B., &amp; Marinova, D. (2018), "Unstructured data in marketing", <i>Journal of the Academy of Marketing Science</i>, 46, 557-590.</li> <li>• Bradlow, E., Gangwar, M., Kopalle, P., &amp; Voleti, S. (2017), "The Role of Big Data and Predictive Analytics in Retailing", <i>Journal of Retailing</i>, 93(1), 79-95.</li> <li>• Davenport, T. H. (2006). "Competing on Analytics", <i>Harvard Business Review</i>, 1-11.</li> <li>• George, G., Osinga, E., Lavie, D., &amp; Scott, B. (2016), "Big Data and Data Science Methods for Management Research", <i>Academy of Management Journal</i>, 59(5), 1493-1507.</li> <li>• Gupta, S., Leszkiewicz, A., Kumar, V., Bijmolt, T., &amp; Potapov, D. (2020), "Digital Analytics: Modeling for Insights and New Methods", <i>Journal of Interactive Marketing</i>, 51, 26-43.</li> <li>• Katsikeas, C., Morgan, N., Leonidou, L., &amp; Hult, T. (2016), "Assessing Performance Outcomes in Marketing", <i>Journal of Marketing</i>, 80 (March), 1-20.</li> <li>• Lobschat, L., Müller, B., Eggers, F., Brandimarte, L., Diefenbach, S., Kroschke, M. and Wirtz, J. (2020), "Corporate digital responsibility", <i>Journal of Business Research</i>, forthcoming.</li> <li>• Van Auken, S. (2015), "From Consumer Panels to Big Data: An Overview on Marketing Data Development", <i>Journal of Marketing Analytics</i>, 3(1), 38-45.</li> <li>• Villarroel Ordenes, F. and Silipo, R. (2021), "Machine learning for marketing on the KNIME Hub: The development of a live repository for marketing applications", <i>Journal of Business Research</i>, 137, 393-410.</li> <li>• Wedel, M., and Kannan, P.K. (2016), "Marketing Analytics for Data-Rich Environments", <i>Journal of Marketing</i>, 80(6), 97-121.</li> </ul>
<p>Faculty or entity in charge</p>	<p>CLSM</p>

Programmes containing this learning unit (UE)				
Program title	Acronym	Credits	Prerequisite	Learning outcomes
Master [120] in Management [CEMS Programme]	GEST2M	5		
Master [120] in Management [CEMS Programme]	GESM2M	5		
Master [120] : Business Engineering [CEMS Programme]	INGE2M	5		
Master [120] : Business Engineering [CEMS Programme]	INGM2M	5		