GHENT UNIVERSITY

Course Specifications

Valid as from the academic year 2024-2025

Analytical Customer Relationship Management (FOOO712)

Course size *(nominal values; actual values may depend on programme)*

Credits 6.0 **Study time 180 h**

Course offerings and teaching methods in academic year 2024-2025

A (semester 1)	English	Gent	lecture
			seminar

Lecturers in academic year 2024-2025

Van den Poel, Dirk	EB23	lecturer-in-charge

Offered in the following programmes in 2024-2025	**crdts**	**offering**
Master of Science in Business Engineering(main subject Data Analytics)	6	A
Master of Science in Business Engineering (Double Degree)(main subject Data Analytics)	6	A
Master of Science in Business Engineering (Double Degree)(main subject Operations Management)	6	A
Master of Science in Business Engineering(main subject Operations Management)	6	A
Exchange programme in Economics and Business Administration	6	A

Teaching languages

English

Keywords

analytical customer relationship management (aCRM), Marketing models, Quantitative methods in marketing, computer programming, Python, CRISP-DM, CLV, LTV, Data Mining, logistic regression.

Position of the course

Analytical CRM represents the last part of the supply chain (contact with final customers). This course introduces students to the analytical tools to carry out projects in aCRM.

Contents

Introduction to:

- analytical Customer Relationship Management (CRM), analysis of CRM:
  1 customer acquisition analysis,
  2 growing customers,
  3 retention analysis,
  4 recapturing 'lost' customers.
- Data Mining (with a strong emphasis on classification models to predict the four types of customer behavior mentioned in the previous bulletpoint)
- High-level data manipulation and modeling language (Python with Python packages)

Initial competences

Intermediate statistics & Econometrics

Final competences

1 Awareness of the most importants quantitative CRM models in marketing and their assumptions.
2 Building CRM models for customer acquisition/up- or cross-sell/customer churn.
3 Mastering a higher level programming language for data manipulation and modeling (Python).
4 Using the appropriate techniques for model building and developing creative approaches to solving real-life problems.

5 Taking appropriate business decisions based on the outcomes of analytical models and communicating results en conclusions towards professionals and laymen using complex data structures.
6 Feature Engineering: Creative construction of variables to be used in marketing models.
7 In-depth coverage of research methodology (logistic regression, classification models).
8 Applying a literature study in international, peer-reviewed journals to CRM problems.
9 Validating the results of one's own research with existing CRM literature.
10 Executing a real-life business case study (in team as a group assignment).
11 Delivering a professional oral report on complex issues and their solutions.

Conditions for credit contract

Access to this course unit via a credit contract is determined after successful competences assessment

Conditions for exam contract

This course unit cannot be taken via an exam contract

Teaching methods

Seminar, Lecture

Extra information on the teaching methods

Ex cathedra sessions as well as active class discussions of the different techniques and models with interactive exercises in the PC room.

Study material

Type: Slides

Name: Slides and papers
Indicative price: Free or paid by faculty
Optional: no
Language : English
Available on Ufora : Yes

References

D'Haen J., Van den Poel D., Thorleuchter D., Benoit D. (2016), "Integrating expert knowledge and multilingual web crawling data in a lead qualification system", Decision Support Systems, 82: 69-78.
VAN DEN POEL Dirk, LARIVIÈRE Bart (2004), “Customer Attrition Analysis for Financial Services Using Proportional Hazard Models”, European Journal of Operational Research, 157 (1), 196-217.
BUREZ Jonathan, VAN DEN POEL Dirk (2006), CRM at a Pay-TV Company: Using Analytical Models to Reduce Customer Attrition by Targeted Marketing for Subscription Services, Expert Systems with Applications, 32 (2), 277-288.

Course content-related study coaching

Numerous exercises are being solved during sessions. In addition, assignments (to be solved in teams) are handed out.

Assessment moments

end-of-term and continuous assessment

Examination methods in case of periodic assessment during the first examination period

Examination methods in case of periodic assessment during the second examination period

Examination methods in case of permanent assessment

Oral assessment, Skills test, Written assessment with open-ended questions, Peer and/or self assessment, Assignment

Possibilities of retake in case of permanent assessment

examination during the second examination period is possible

Extra information on the examination methods

Written exam to determine to what extent the student mastered
- the principles of analytical CRM,
- the higher-level programming language Python.

The use of generative AI is not allowed during the programming exam.

Calculation of the examination mark

Exam period (60%) and permanent evaluation (40%).
The total grade is computed as follows:
60% aCRM programming exam in Python during the exam period
40% group assignment during the academic year (potentially adjusted by peer assessment).
To pass, a student should pass both parts of the evaluation. If a student does not pass for both parts and the score is 10/20 or more, the score will be reduced to 9/20.