Course Specifications
Valid as from the academic year 2019-2020

Analytical Customer Relationship Management (F000881)

Course

Lecturers in academic year 2019-2020
Van den Poel, Dirk
EB23 lecturer-in-charge

Offered in the following programmes in 2019-2020
Master of Science in Marketing Analysis

crds
offering
8
A

Teaching languages
English

Keywords
Marketing models, Quantitative methods in marketing, CLV, LTV, Data Mining, CRISP-DM, logistic regression, decision trees, Python.

Position of the course
This course provides a refresher of some basic techniques required for marketing modeling.
The main purpose of this course is to learn to understand the most important quantitative models for analytics in CRM. Much attention will be paid on learning a high-level data manipulation and modeling language as well as techniques of model construction.
The program aims at providing a thorough scientific training. The overall objective is to train and educate marketing graduates specialised in marketing analysis, who can support the marketing strategy and marketing action plans of a company. Emphasis is placed on the practical use of these analysis techniques within a company setting.

Contents
1 Basic techniques for marketing modeling:
• econometrics (regression analysis)
• statistics (statistical tests)
2 In-depth coverage of logistic regression and decision trees for classification
3 CRM modeling
• Customer Relationship Management (CRM), analysis of CRM: customer acquisition analysis, growing customers, retention analysis.
4 Data Mining (CRISP-DM) methodology
5 Feature Engineering: models need variables to be computed based on existing data.
6 High-level data manipulation and modeling language (Python software with python packages)
7 Customer Lifetime Value (CLV) modeling
8 Data visualization for decision support

Initial competences
Introduction to statistics.

Course size
Credits 8.0
Study time 240 h
Contact hrs 80.0 h

Course offerings and teaching methods in academic year 2019-2020
A (semester 1) English
lecture
seminar: practical PC room classes
seminar: coached exercises
self-reliant study activities
group work

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Initial competences
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(Approved)
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 an international and interdisciplinary team with different levels of experience.
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
Group work, lecture, self-reliant study activities, seminar: coached exercises, seminar: practical PC room classes

Extra information on the teaching methods
Interactive excercises about marketing models, using programming languages and/or software tools. Active class discussions of the different techniques and models.

Learning materials and price
• Manual of high-level data manipulation and modeling language
• Own syllabus
• Scientific papers about analytical customer relationship management, including:

References

Course content-related study coaching
Numerous exercises are being solved during sessions. In addition, assignments (to be solved in teams) are handed out.
Students receive coaching in the process of solving the assignments and feedback afterwards (collectively, by team and individually).
After the tests about the programming language Python and the content aCRM students will receive individual feedback & coaching.

Evaluation methods
continuous assessment

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

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

Examination methods in case of permanent evaluation
Written examination with open questions, open book examination, oral examination, assignment, skills test, peer assessment

Possibilities of retake in case of permanent evaluation

(Approved)
examination during the second examination period is possible in modified form

Extra information on the examination methods

Written and oral to determine to what extent the student mastered (1) the principles of analytical CRM, (2) the higher programming language Python and Python Packages and (3) formulating business conclusions based on results obtained by using marketing models.

Calculation of the examination mark

Permanent evaluation (100%)
The total grade is computed as follows:
20% Python programming exam (during the academic year)
40% aCRM programming exam in Python during the academic year
40% group assignment during the academic year (potentially adjusted by peer assessment).
The grades for the two exams (Python and aCRM programming exam) are aggregated on the one hand and group assignment on the other hand.
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.