Scoring

Course title – Intitulé du cours	Scoring
Level / Semester – Niveau /semestre	M2 / first semester
School – Composante	Ecole d'Economie de Toulouse
Teacher – Enseignant responsable	David Roux
Other teacher(s) – Autre(s) enseignant(s)	
Other teacher(s) – Autre(s) enseignant(s)	
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Other teacher(s) – Autre(s) enseignant(s)	
Lecture Hours – Volume Horaire CM	15
TA Hours – Volume horaire TD	
TP Hours – Volume horaire TP	
Course Language – Langue du cours	English / Anglais
TA and/or TP Language – Langue des TD et/ou TP	English / Anglais

Teaching staff contacts – Coordonnées de l'équipe pédagogique :

Email : david.roux.consulting@gmail.com

Course Objectives – Objectifs du cours :

After defining the scoring goals and vocabulary, the course introduces the generalized linear model and extensively the logistic regression model. We detail the definition, estimation and interpretation of the odds ratios as well as the computations of marginal effects. We then discuss tools such as the Lorenz and ROC curves for the evaluation of the quality of a scoring model. Banking area is one of the fields of application where scoring is very usefull, so a practical application will be performed in this area (realization of a project per group of students by using SAS software).

Prerequisites – Pré requis :

Basic knowledge about linear regression, classification. Practice of SAS software.

Practical information about the sessions – Modalités pratiques de gestion du cours :

Personal computers allowed. The course attendence is compulsory

Grading system – Modalités d'évaluation :

Project per group of students - Bonus for participation No late project accepted.

Bibliography/references – Bibliographie/références :

About generalized linear models

chapters 1 and 6 of Extending the linear model with R, J.J. Faraway, Chapman \& Hall/CRC, 2006.
chapter 7 of W.N. Venables and B.D.Ripley, Modern Applied Statistics with S, 2002, Springer. \item
chapter 1 and 2 of Generalized additive models, an introduction with R, S. Wood, Chapman \& Hall/CRC, 2006.
chapter 2 of L. Fahrmeir and G. Tutz, Multivariate statistical modelling based on generalized linear models, Springer series in statistics, 1994. 2)

About logistic regression and alternatives

J.M. Hilbe, Logistic regression models, CRC Press, Chapman and Hall, 2009.
D.W. Hosmer, S. Lemeshow, Applied logistic regression, second edition, Wiley, 2000.
chapter 10 of S. Tufféry, Data mining et statistique décisionnelle, 2005.
S. Tufféry, Etude de cas en statistique décisionnelle, 2009.
chapter 2 of JP. Nakache and J. Confais, Statistique explicative appliquée, Technip, 2003.
M. Bardos, Analyse discriminante, application au risque et scoring financier, Dunod, 2001.
G. Shmueli et al., Data mining for business, techniques, and applications in R, Wiley, 2018.

About the practice of scoring

R. Anderson, The credit scoring toolkit, Oxford U.P., 2007. –
Thomas, Edelman and Crook, Credit scoring and its applications, SIAM, 2002.
N. Siddiqi, Credit risk scorecards, Wiley, 2006

Session planning – Planification des séances :

Day	Duration	from	to
Tuesday 04/10/2022	03h00	09h30	12h30
Tuesday 04/10/2022	03h00	14h00	17h00
Monday 10/10/2022	03h00	09h30	12h30
Tuesday 11/10/2022	03h00	09h30	12h30
Tuesday 11/10/2022	03h00	14h00	17h00

Distance learning – Enseignement à distance :

Distance learning can be provided when necessary by implementing, for example: / En cas de nécessité, un enseignement à distance sera assuré en mobilisant, par exemple :

- Interactive virtual classrooms / Classe en ligne interactive
- Remote (online) tutorials (classes) / TP/TD à distance
- Email support