

MGT-432

Data science for business

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Cursus	Sem.	Type
Energy Management and Sustainability	MA1, MA3	Opt.
Financial engineering	MA1, MA3	Opt.
Management, Technology and Entrepreneurship minor	H	Opt.
Managmt, tech et entr.	MA1, MA3	Opt.

Language of teaching	English
Credits	6
Withdrawal Session	Unauthorized Winter
Semester	Fall
Exam	During the semester
Workload	180h
Weeks	14
Hours	4 weekly
Courses	3 weekly
TP	1 weekly
Number of positions	50

It is not allowed to withdraw from this subject after the registration deadline.

Remark

only for MA3

Summary

The course introduces students to the methods and tools used by data scientists to model prediction problems for business. Students will also learn how to apply these concepts to real programming problems.

Content

This course introduces students to some of the programming tools used by data scientists to address real world business analytics problems. Accordingly, the course objectives are three fold: (1) to develop an understanding of how Data Science methods can support decision making in business environments; (2) to gain familiarity with how Data Science tools function through experience in addressing real-world problems and programming real-world solutions; (3) to evaluate the strengths and weaknesses of alternative approaches. The course is particularly applicable for students interested in working for, or learning about, data-driven companies.

Keywords

Data science; data analysis; business analytics; python; data-driven management

Learning Prerequisites**Required courses**

Prior to the start of class, all students must complete a comprehensive course in statistics covering descriptive statistics, analysis of variance, and the OLS linear regression model. Additionally, students must have prior experience with at least one programming language, and familiarize themselves with the Python 3 programming language.

Recommended courses

It is strongly recommended that students familiarize themselves with the syntax and data structures of the Python programming language before the start of class. There are numerous online MOOCs and/or tutorials that can serve this need. It also is strongly recommended that students take a masters-level statistics course, over-and-above the required foundational course in statistics, before the start of class.

Learning Outcomes

By the end of the course, the student must be able to:

- Formulate prediction models
- Assess / Evaluate the performance of prediction models
- Describe their findings to others

Transversal skills

- Access and evaluate appropriate sources of information.
- Take feedback (critique) and respond in an appropriate manner.
- Plan and carry out activities in a way which makes optimal use of available time and other resources.
- Assess one's own level of skill acquisition, and plan their on-going learning goals.
- Assess progress against the plan, and adapt the plan as appropriate.
- Collect data.

Teaching methods

Weekly lectures, demonstrations, assignments, and exercises.

Expected student activities

Attending class regularly to both acquire content and to review problem sets and exercises. Exams will be given during regularly scheduled class hours.

Assessment methods

50% Individual Assignments - Five assignments at 10% each
25% Semester Project - Group Project completed in teams
25% Final Exam - Written exam administered during final class period

Resources

Bibliography

Textbook: "Data Science for Business" by Provost & Fawcett. (2013) Publisher: O'Reilly Media; ASIN: B017PNWLKQ

A list of additional readings will be distributed at the beginning of the course.

Ressources en bibliothèque

- [Data Science for Business / Provost](#)