Artificial intelligence in Business

EM054M6G

Program

PGE
PGE 2A - FINANCE - COMPTABILITE

UE

Artificial intelligence in Business

Semester

B

Discipline

Information systems management

Contact hours

27 H

Number of spots

25

ECTS

5

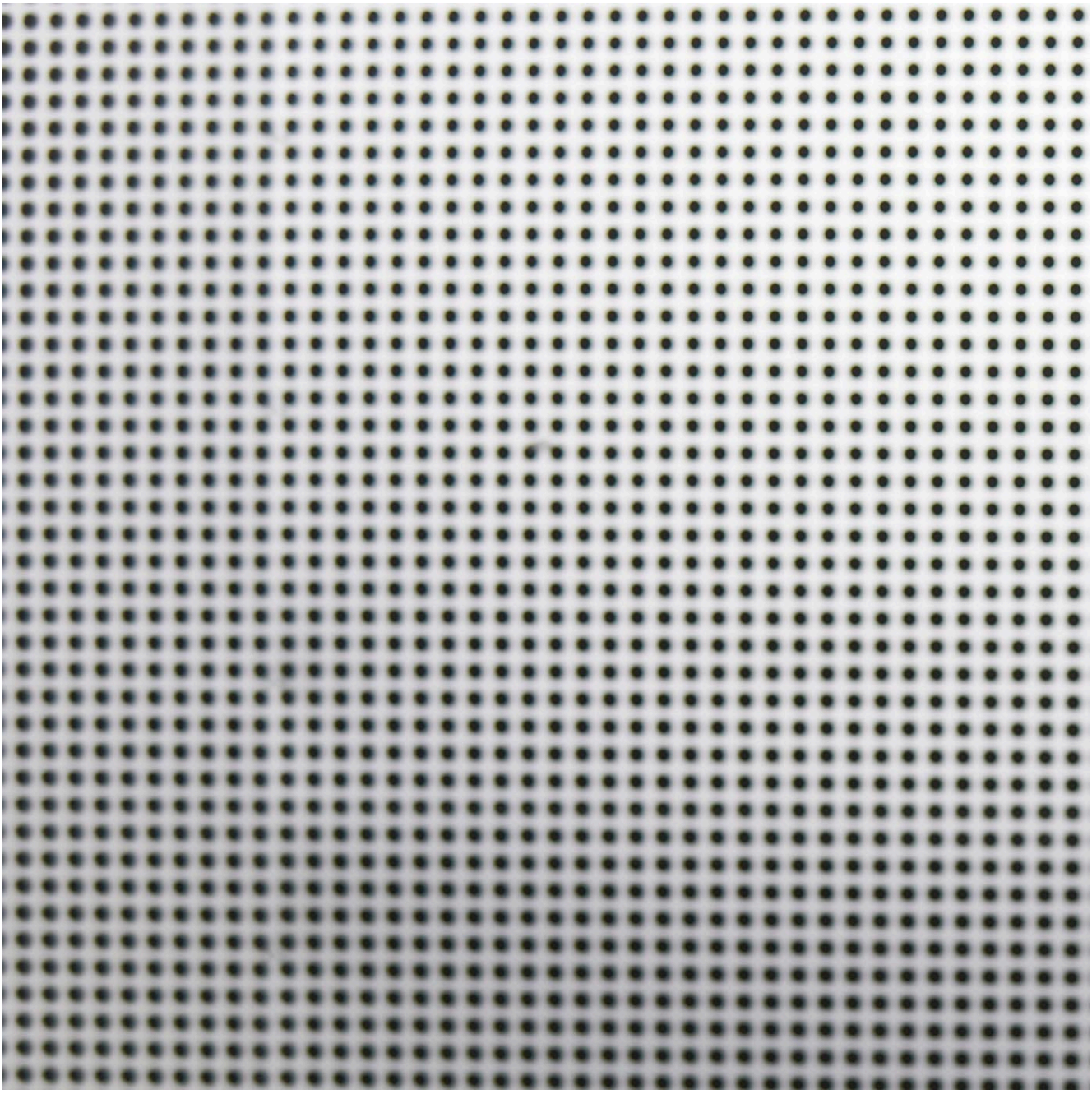
Open to visitors

Yes

Language

Coordinator

Samia CHEHBI GAMOURA



List of lecturers

Lecturer(s)	Email	Contact hours - lecture
Samia CHEHBI GAMOURA	samia.gamoura@em-strasbourg.eu	**27 h**

Pedagogical contribution of the course to the program

Développer un management à impact grâce aux connaissances et aux outils les plus récents dans les domaines du management

Developing a strategic and managerial vision in a complex, uncertain and changing environment

Evaluate sustainable managerial practices using managerial concepts and instruments as well as digital tools

Design solutions adapted to organizational problems by applying relevant methodologies

Développer des compétences managériales de niveau avancé se traduisant par un leadership responsable

Recommend decision making by taking a critical approach to driving change in organizations

Pratiquer un management à impact dans un environnement multiculturel et international, porté par un "European mindset"

Communicate in a professional context in (foreign) languages, in writing and/or orally

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Description

Today, artificial intelligence and data systems are pervading all systems in organizations. Management and business sectors are integrating artificial intelligence techniques and algorithms into all activities at all levels. Many decisions in managers' daily tasks are now supported and automated or semi-automated by AI. Artificial intelligence" is a paradigm that covers many techniques and approaches. Some of them are used more in business and management, such as marketing, finance, merchandising, manufacturing, logistics, human resources, etc.

Teaching methods

Face-to-face

- Lectures
- Tutorials

In group

- Exercises
- Oral presentations
- Case studies/texts

Interaction

- Discussions/debates

Others

No items in this list have been checked.

Learning objectives

Cognitive domain

Upon completion of this course, students should be able to

- - (level 1) **identify** the main algorithms and techniques of Artificial Intelligence that are known in the business sector
- - (level 2) **give examples** about the different AI techniques in business cases
- - (level 3) **manipulate** some datasets in AI integration cases
- - (level 4) **analyze** situations where automated decisions are needed and thus AI maybe applied
- - (level 5) **interpret** situations and results when applying AI in some business cases

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Affective domain

Upon completion of this course, students should be able to

- - (level 1) **choose** and apply the main concepts about Artificial Intelligence in the Business contexts
- - (level 2) **discuss** the business models to integrate AI techniques
- - (level 3) **explain** some relevant cases of use that may need AI integration

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Outline

I. Business data
1. Turing machine
2. Automated decision-making
3. Data-driven systems
II. Analytics
1. What and why
2. Analytics mutations
2.1. Traditional analytics
2.2.1. OLAP
2.2.2. Business Intelligence
2.2. Advanced analytics
2.2.1. Data Mining
2.2.2. Artificial Intelligence
III. Artificial intelligence
1. What and why
2. History
3. Design patterns
4. AI branches
5. Machine learning
6. Deep learning
7. Applications
7.1. in marketing: association rule algorithm
7.2. in warehousing: decision tree algorithm
IV. The future of data and artificial intelligence in business?
1. Existing challenges and opportunities

2. Future challenges and opportunities

No prerequisite has been provided

Knowledge in / Key concepts to master

Fundamentals in organizations and management – Skills about business concepts - Skills in MS Excel

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Teaching material

Mandatory tools for the course

- Computer
- Calculator
- Reference manuals

Documents in all formats

- Case studies/texts
- Worksheets

Moodle platform

- Upload of class documents
- Interface to submit coursework
- Assessments
- Coaching/mentoring

Software

No items in this list have been checked.

Additional electronic platforms

- Other :

Recommended reading

Main reading material
Book: Rose, D. (2018). Artificial Intelligence for Business What You Need to Know about Machine Learning and Neural Networks. (available in Moodle)
Book: Deshpande, A., & Kumar, M. (2018). Artificial intelligence for big data: Complete guide to automating big data solutions using artificial intelligence techniques. Packt Publishing Ltd. (available in Moodle)

Book: A. J. Gutman, J. Goldmeier (2021). Becoming a Data Head: How to Think, Speak, and Understand Data Science, Statistics, and Machine Learning (available in Moodle)

Additional literature
Book: Finlay, S. (2021). Artificial intelligence and machine learning for business: a no-nonsense guide to data driven technologies (No. 4th ed). Relativistic.
Book: Panda, S. K., Mishra, V., Balamurali, R., & Elngar, A. A. (Eds.). (2021). Artificial Intelligence and Machine Learning in Business Management: Concepts, Challenges, and Case Studies. CRC Press.

EM Research: Be sure to mobilize at least one resource

Textbooks, case studies, translated material, etc. can be entered
CHEHBI GAMOURA S. (2021). Predictive Reinforcement Learning Algorithm for Unstructured Business Process Optimization: Case of Human Ressources Process. International Journal of Spatio-Temporal Data Science, 1 (n° 2).

CHEHBI GAMOURA S., DERROUICHE R., DAMAND D., BARTH M. (2020). Insights from Big Data Analytics in Supply Chain Management: An All-Inclusive Literature Review Using the SCOR Model. Production Planning and Control, 31 (n° 5) [CNRS cat.2, FNEGE cat.2, HCERES cat.A] Impact Factor. 4.

Review. Artificial Intelligence and Applied Mathematics in Engineering Problems, Cham, Switzerland, Springer Nature, 1-16.

Assessment

List of assessment methods

Intermediate assessment / continuous assessment 1 Other (date, pop quiz, etc.) : après chaque session (pour 7 sessions)
Written (40 Min.) / Individual / English / Weight : 15 %
Details : test automatisé dans moodle pour chaque session (7 sessions)
This evaluation is used to measure ILO1.1-PGE, ILO1.2-PGE, ILO1.3-PGE, ILO2.2-PGE, ILO1.1-PGE, ILO1.2-PGE, ILO1.3-PGE, ILO2.2-PGE, ILO1.1-PGE, ILO1.2-PGE, ILO1.3-PGE, ILO2.2-PGE, ILO1.1-PGE, ILO1.2-PGE, ILO1.3-PGE, ILO2.2-PGE, ILO1.1-PGE, ILO1.2-PGE, ILO1.3-PGE, ILO2.2-PGE, ILO1.1-PGE, ILO1.2-PGE, ILO1.3-PGE, ILO2.2-PGE

Intermediate assessment / continuous assessment 2 Class no. 4
Written and oral (180 Min.) / Group / English / Weight : 15 %
Details : business case à présenter en groupe
This evaluation is used to measure ILO1.2-PGE, ILO1.3-PGE, ILO2.2-PGE, ILO4.1-PGE, ILO1.1-PGE, ILO1.2-PGE

Final evaluation Last class
Written (120 Min.) / Individual / English / Weight : 70 %
Details : examen final
This evaluation is used to measure ILO1.1-PGE, ILO1.2-PGE, ILO1.3-PGE, ILO2.2-PGE, ILO4.1-PGE, ILO1.1-PGE, ILO2.2-PGE, ILO1.2-PGE