

Ministry of Higher Education and Scientific Research
University of Mila
Faculty of Mathematics and Computer Science
Department of Computer Science
Master 2 - I2A
2026/2027

Big Data

Presented by: Dr. Brahim Benabderrahmane

Objectives of the Big Data Course

- 01** **Discovering Map/reduce methodology**
- 02** **Learning to use Hadoop**
- 03** **Learning to write and execute Hadoop Programs**
- 04** **Learning to use MangoDB**
- 05** **Learning to use Apache Spark**

Prerequisites

To get the most out of this course, you should be familiar with:

- Distributed Systems
- Object-Oriented Programming (Java)
- Databases
- Parallel and Distributed Algorithms

Target Audience

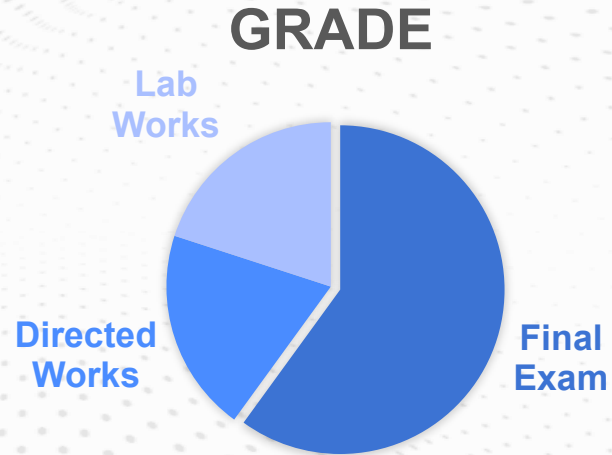
- Master 2 I2A students



Evaluation Mode

The final evaluation consists of:

- A final exam, which accounts for 60% of the final grade.
- Directed Works : 20% (Continuous assessment, participations, presentations, quizzes).
- Lab Work : 20 % (Coding, Mini-Projects)



Course Plan

Chapter 1: Introduction to Big Data

Chapter 2: Hadoop Systems

Chapter 3: Apache Spark

Chapter 4: NoSQL Database: MongoDB



Directed Works Plan

- 01** Performance Metrics
- 02** Map/Reduce Algorithmics
- 02** HDFS
- 03** NoSQL



Practical works Plan

- 01 Environment Preparation
- 02 Sales analysis using Hadoop
- 03 A project using Apache Spark
- 04 MongoDB and Python



Presentation on Big Data technologies

1. **Apache Cassandra**
2. **Apache Kafka**
3. **QlikView**
4. **Qlik Sense**
5. **Table**
6. **Apache Storm**
7. **Apache Hive**
8. **Apache Pig**
9. **Presto**
10. **Apache Flink**
11. **Apache Sqoop**
12. **Rapidminer**
13. **KNIME**
14. **Elasticsearch**

**Good
Luck!**