RESEARCH METHODOLOGY

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OBJECTIVE

This course aims to enhance students' skills such as the ability to face a research problem, evaluate relevant literature, generate research objectives and research questions, the ability to understand a conceptual framework, the ability to select and justify a particular research design and methodology and the ability to frame their contribution to knowledge. Students will understand and apply the important methods and techniques and will learn how to report critically on research outcomes.

SYLLABUS

- What is a research process?
- Research Problem
- Research objectives and formulating research questions
- What Is Academic Writing?
- Type of Academic Text (Essay, dissertation, research proposal)
- Academic language
- Writing supporting tools
- IDE
- Latex
- Write a research paper
- Structure of a research paper
- How to write sections (Abstract, Introduction, Methodology, Results, Validation…)
- Reviewing literature
- Using Sources (Citing and referencing)
- Practical exercise
- Effective presentations

Module 1: Introduction
- AI in various industries
- I.D.E.A. Framework
- Case examples and Discussion

Module 2: Applied I.D.E.A. to a hypothetical scenario
- Inspire, Design, Empower, Achieve (theory and practice)

Module 3: Data Science Pipeline
- Phases of data science
- Case examples and Discussion

Module 4: Capstone project
- Use Cases initiation
- Exam preparation

LEARNING ASSESSMENT METHOD

Working groups (up to 3 people)
Use case development (from the proposal list) applying I.D.E.A. framework
Research paper (6-10 pages) including development code (link to github)
Final presentation