UE Process engineering

Level
Baccalaureate +5

ECTS
6 credits

Component
UFR IM2AG (informatique, mathématiques et mathématiques appliquées)

Semester
Automne

> **Teaching language(s):** English

> **Open to exchange students:** Yes

> **Code d'export Apogée:** GBX9MO57

Presentation

Description

Business process management (BPM) is the discipline in which people use various methods to discover, model, analyze, measure, improve, optimize, and automate business processes. BPM has become a strategic activity in all organizations around the world because of its potential to increase profit margins and reduce operating costs. This course aims at providing an overview of some key existing solutions for modelling and developing processes, while emphasizing and discussing open research problems in this area.

More specifically, this course focuses on three main parts:

- The first part (Process Modelling) introduces the Business Process Model and Notation (BPMN), which is the ISO standard graphical notation used for modelling business processes. This part also shows how to use existing frameworks (such as the bonita studio) to support the development of BPMN processes along with their life-cycle (design, configuration, execution and control).
- The second part (Process Mining) presents a family of techniques that support the analysis of business processes based on event logs. Process mining applies specialized data mining algorithms on event log data in order to identify trends and patterns contained in these event logs. Process mining aims at improving process efficiency and understanding of processes.
- The third part (Process Analysis) introduces formal models for defining the semantics of process executions. These formal models allow the analysis of the processes using simulation and verification techniques for optimizing resource allocation or controlling the evolution of the business processes.

Program:

- Process Modelling (15h)
  - Introduction to Business Process Management (BPM)
  - Business Process Model and Notation (BPMN)
  - Process perspectives (collaborations and choreographies)
  - BPM life-cycle
- Process Mining (9h)
  - Motivations & positioning of process mining
  - Types of process mining (discovery, conformance & enhancement)
  - Process mining methods & tools
- Process Analysis (12h)
  - Formal models
  - Functional and quantitative analysis
  - Resource allocation
  - Process comparison and evolution

Course parts

Lectures	Lectures (CM)	36h

Period : Semester 9

Useful info

Contacts

Program director

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Campus

❯ Grenoble - University campus