

Sapienza Università di Roma

Process Management and Mining

A.A. 2026/2027

Exam Structure and Rules

Andrea Marrella

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Written Exam Rules

► Duration:

- 2 hours

► Final mark:

- Obtained as a weighted average of the two parts (**project: 1/3, written exam: 2/3**) and will be registered only when both parts have been passed.
- **Final mark == 30L** → **project mark == 30** AND **exam mark == 31**
- An oral examination **is exclusively possible** if you want to get 18 (in the case of a final mark <18) or 30L (in the case of a final mark == 30).

► Structure

1. Modelling Exercise (15/31)
2. Practical Exercise (10/31)
3. Theory Question (6/31)

Modeling Exercise

1. **Modelling Exercise (15/31)**

- Given in input a textual specification describing the behaviour of a procedure, model it using BPMN notation.

2. Practical Exercise (10/31)

3. Theory Question (6/31)

Practical Exercise

1. Modelling Exercise (15/31)

2. **Practical Exercise (10/31)**

- Given an event log, apply the alpha algorithm to discover the corresponding workflow net.
- Given a log and a process model as a Petri net, apply the trace alignment algorithm and compute the fitness value.
- Given a process model, enhance it with suitable exception flows.
- Given a declarative process model represented as a set of DECLARE constraints, specify N execution traces that comply with the model.
- Given a Petri net and an initial marking, compute the reachability graph of the net describing the algorithm steps performed.
- ...and many others possible examples.

3. Theory Question (6/31)

Theory Question

1. Modelling Exercise (15/31)
 2. Practical Exercise (10/31)
 3. **Theory Question (6/31)**
 - Discuss, with the support of an example, the soundness properties of a workflow net.
 - Describe the main techniques available in the area of process mining.
 - Shortly introduce the most relevant qualitative and quantitative process analysis techniques.
 - ...and many others!
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- **Anything covered in the slides could potentially be asked!**