|  |  |  |
| --- | --- | --- |
| **DS&AI course building blocks** | KNOWLEDGE REPRESENTATION (3 credits, elective) | |
| **Section 1** | **Knowledge Representation and Reasoning** | |
| Lesson 1 | Ontologies | Video, discussion forum |
| Lesson 2 | Conceptual Graphs | Slides |
| Lesson 3 | Linked Data and Semantic Web | Slides |
| Lesson 4+5 | Description Logics and UML | Slides |
| Lesson 6 | Nonmonotonic Reasoning | Slides |
| Lesson 7 | Answer Sets | Slides |
| Lessons 8+9 | Rule-based, Model-based and Case-based Reasoning | Slides |
| **Section 2** | **Classes of Knowledge and Specialized Representations** | |
| Lessons 10+11 | Reasoning about Knowledge and Belief | Slides |
| Lesson 12 | Reasoning about Actions, Events, and Time | Slides |
| Lesson 13 | Situation Calculus | Slides |
| Lessons 14+15 | Event Calculus and Transaction Logic | Slides |
| **Section 3** | **Knowledge Representation in Applications** | |
| Lessons 16+17 | The semantic Web | Slides |
| Lesson 18 | Robotics | Slides |
| Lessons 19+20 | Knowledge Engineering | Slides |

Total 25 hours lab sessions and 20 hours lessons