

Program of Studies:	Master Program Bioinformatics
Name of the module:	Artificial Intelligence
Abbreviation:	I-M-5
Subtitle:	Core lecture
Modules:	Lecture 4 h (weekly) Tutorial 2 h (weekly)
Semester:	1 st -3 rd Semester / At least once every two years
Responsible lecturer:	Prof. Dr. Jörg Hoffmann
Lecturer:	Prof. Dr. Jörg Hoffmann, Prof. Dr. Wolfgang Wahlster
Language:	English
Level of the unit/ Mandatory or not :	Graduate course / mandatory elective
Course type/weekly hours:	Lecture 4 h (weekly) Tutorial 2 h (weekly) Tutorials in groups of up to 20 students
Total workload:	270 h = 90 h of classes and 180 h private study
Credits:	9
Entrance requirements:	For graduate students: none
Aims/Competences to be developed:	Knowledge about the fundamentals of artificial intelligence
Content:	<p><i>Problem-solving:</i></p> <ul style="list-style-type: none"> - Uninformed- and informed search procedures - Adversarial search <p><i>Knowledge and reasoning:</i></p> <ul style="list-style-type: none"> - Propositional logic - SAT - First-order logic, Inference in first-order logic - Knowledge representation, Semantic Web - Default logic, rule-based mechanismus <p><i>Planning:</i></p> <ul style="list-style-type: none"> - STRIPS formalism and complexity - Delete relaxation heuristics <p><i>Probabilistic reasoning:</i></p> <ul style="list-style-type: none"> - Basic probabilistic methods - Bayesian networks

Assessment/Exams:	<ul style="list-style-type: none">- Regular attendance of classes and tutorials- Solving of weekly assignments- Passing the final written exam <p>A re-exam takes place during the last two weeks before the start of lectures in the following semester.</p>
Literature:	<p>An updated list of used literature will be issued at the beginning of the semester on the website.</p> <ul style="list-style-type: none">- S. Russell, P. Norvig: Artificial Intelligence – A Modern Approach