

Presentation AI Program

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AI PROGRAM

- ▶ Mandatory Courses
- ▶ Elective Courses

MANDATORY COURSES: 23 ECTS IN TOTAL

A student in AI has to follow **all** of the following courses:

Course	ECTS	Semester
Actual Trends in Artificial Intelligence	6	1-2
Computational Game Theory	6	1
Heuristic Optimisation	5	2
Statistical Foundations of Machine Learning	6	2

OVERVIEW MANDATORY COURSES

Actual Trends in Artificial Intelligence - Johan LOECKX

Talks of guest AI-lecturers on their current research

Statistical Foundations of Machine Learning

2018-19: Gianluca BONTEMPI@ULB and
2019-20: Bernard MANDERICK

Computational Game Theory - Tom LENAERTS@ULB, Ann NOWÉ

Strategic individual and population learning

Heuristic Optimisation - Thomas STÜTZLE@ULB

Focus on stochastic local search techniques

ELECTIVE COURSES: AT LEAST 7 ECTS

A student in AI has to obtain **at least 7 ECTS** from the list below

Course	ECTS	Semester
Adaptive Systems Seminar	6	2
Advanced Methods in Bioinformatics	6	2
AI Programming Paradigms	6	1
Computer Vision	4	1
Decision Engineering	5	1
Evolution of speech	6	1
Multi-agent Learning Seminar	6	1-2
Natural Language Processing	6	2
Pattern Recognition	3	2
Swarm Intelligence	5	2

OVERVIEW ELECTIVE COURSES

Adaptive Systems Seminar - Bernard Manderick

Selection of state of the art topics in machine learning

Advanced Methods in Bioinformatics - Wim VRANKEN

Algorithms and methods in computational biology

AI Programming Paradigms - Katrien BEULS

Five advanced AI topics in Lisp

Computer Vision - Hichem SAHLI

Decision Engineering - Yves DE SMET@ULB

Introduction to decision theory

OVERVIEW ELECTIVE COURSES (CONT.)

Evolution of Speech - Bart DE BOER

Biological evolution of human speech

Multi-Agent Learning Seminar - Ann NOWE

Reinforcement Learning: reading papers and doing project work

Natural Language Processing - Katrien BEULS

Speech and Language Processing, D. Jurafsky and J.H. Martin

Swarm Intelligence - Mauro BIRATTARI@ULB, Marco

DORIGO@ULB

Natural and artificial systems composed of many individuals that coordinate using decentralized control and self-organization