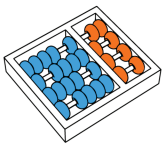
MC906A/MO416A - Introducition to Artificial Intelligence
Institute of Computing - Unicamp
First Semester 2020



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http://www.ic.unicamp.br/~esther/teaching/2020s1/mc906

Course Information - Updated Syllabus due to class suspension

1 Summary

The course will be conducted through online tools. We will adopt Google Classroom (https://classroom.google.com) as our main tool. To get access to Google Classroom, students must use their DAC accounts. Invites to the course page with access codes will be sent to your e-mails.

Credits:	4
Class hours:	The discipline will happen asynchronously
Website:	https://classroom.google.com and http://www.ic.unicamp.br/~esther/teaching/2020s1/mc906
Support to students:	The support will happen through virtual channels. Synchronous meetings will happen on Mondays - from 7pm to 9pm) to resolve doubts and synchronize the themes as needed

Course Goals:

Every Monday	19:00h - 21:00h	Online meeting for discussions and clarifications over the last content
Every Wednesday	19:00h	The course material for the week will be available online

2 Assistance and attendance

We will meet weekly via Google Meet on Mondays, from 19:00 to 21:00. If no one is active until 19:30h, the meeting will ble closed for that day. Given the asynchronous form of the discipline, the presence in the synchronous activities that may be carried out will not be counted. Students will not fail for absences.

3 Syllabus

Topics to be presented in the course include:

- History and AI principles
- Intelligent agents
- Search without information, with information and competitive. Genetic algorithms
- Constraint satisfaction problem
- Evolutionary computing
- Planning
- Fuzzy Systems
- Uncertainty and Bayesian Networks

- Machine learning
  - Learning paradigms (supervised, unsupervised and Reinforcement Learning)
  - Decision trees
  - Neural networks
  - Markov Models and Reinforcement Learning
- AI Topics

4 Programming languages

The programming language used in the course is open, as long as it is compatible and justified in the context of the problem.

5 Course Page and Activity Submission

The course material will be available on the course page `http://www.ic.unicamp.br/~esther/teaching/2020s1/mc906` and in the Google Classroom. Practical work and projects carried out during the course must be submitted through Google Classroom in the area corresponding to the course.

6 Evaluation

The evaluation of the discipline will be conducted based on the following activities:

- A set R of varied tasks that will have grades distributed proportionally. Tasks include readings, reviews of recommended articles and online tests:
  - $R = \frac{R_1+R_2+...+R_n}{n}$, where n is the number of activities carried out throughout the semester
- Two projects, $P1$ and $P2$ with weights 20% and 25%, respectively
- A final project PF to be carried out in a group, weighing 45%. For the final project:
  - The student can only do the final project PF if he/she has delivered the two projects $P1$ and $P2$
  - Groups must have 5 students
  - The implementation language is free, as long as justified in the context of the application
  - The group must present the final project proposal within the time set by the teacher
  - The final report must present the adopted solution, discussing the results achieved in scientific article format, in the model proposed by the professor
  - The code and the final report must be delivered via Google Classroom
  - The project must be presented by the group as indicated by the professor
- The final grade, MF, will be calculated as: $MF = 0.10R + 0.20P1 + 0.25P2 + 0.45PF$
- The student will be approved if his final grade is $MF \geq 5.0$¿ Otherwise, he/she will fail.
- For graduate students, the grade range will be:
  - A: >=8.5
  - B: >=7.0 and <8.5
  - C: >=5 e <7.0
  - D: <5

6.1 Deadlines

- Project 1 ($P1$): 04/05/2020
- Project 2 ($P2$): 01/06/2020
- Final project (PF):
  - Final project submission PF: 05/07/2020
  - Final project submission PF: 06-08/07/2020

7 Bibliography

Some of the references considered important for the fulfillment of the proposed content are listed below. The complementary material to be used will be indicated on the course page.

1. RUSSEL, S.; NORVIG, P. Artificial Intelligence: a modern approach. Prentice Hall. 3rd edition, 2010.
2. MITCHELL, T. Machine Learning. McGrawHill, 1997.
3. BISHOP, C. M. Pattern Recognition and Machine Learning. Springer, 2006.
4. SUTTON, R.; BARTO, A. G.; Reinforcement Learning: An Introduction. Cambridge, Massachusetts: MIT Press, 2017.

Observations

- There will be no substitute projects.
- **Any fraud attempt on the projects will result in a final score of $MF = 0$ (zero) for all involved.**