Dauphine | PSL
UNIVERSITÉ PARIS

Mathématiques et Informatique
de la Décision et des Organisations

Evaluation guide
Academic year 2023 - 2024

2ème year Master's degree in Computer Science
Artificial Intelligence, Systems and Data" (IASD) course

Initial Classical Training

I - General principles

The 2ème master's degree courses in Computer Science, Artificial Intelligence, Systems and Data are organised into semesters 3 and 4. Each semester is made up of courses (="unité d'enseignement" in french or UE) plus an internship sblock for semester 4 (see Appendix 1).

1 – Pedagogical registration

To be admitted to courses and examinations, candidates must have completed the administrative registration formalities with the central registrar by September 30th of the current year and the pedagogical registration formalities with the MIDO department. They must also have paid their tuition fees in order to obtain their school certificate and student card.

2 - Course validation

The final grade for the first session of a course is obtained by weighting the grades for continuous assessment, projects, half-term examinations and final examinations. The continuous assessment grade may include several elements: projects, homework, written or oral examinations and participation grades (see Annex 2).
In the event of a remedial session, the final grade for a course is obtained by final examination. It replaces the final grade for the first session of the course.
Any course for which the student has obtained a final grade equal to or higher than 10/20 is definitively acquired, as are the associated ECTS.

3 – Semester validation

Semester 3 is made up of core courses (or fundamental courses) and semester 4 is made up of optional courses and an internship. The final grade for semester 3 is calculated as the weighted sum of the final grades for all the core courses composing the semester; the final grade for semester 4 is calculated as the weighted sum of the final grades for the 6 best grades for the optional courses **excluding the internship**, the weight of the final grade for a course being equal to the ECTS associated with the course.
A semester is definitively acquired if all the following conditions are met**:**
- it consists of at least 30 ECTS ;
- the final grade for the semester is **greater than or equal to 10/20 ;**
- the final grade for each of the courses composing the semester **is equal to or higher than 06/20 ;**
- the final grade for **6 optional courses in** semester 4 **is 06/20 or higher**
- the final grade for the work placement course **for the validation of semester 4 is greater than or equal to 10/20**.

Validation of a semester implies validation of each course in that semester and the associated ECTS.
Once a semester has been passed, the courses for that semester cannot be retaken at the remedial session.

4 – Internship/Research dissertation

Students must carry out research work leading to the writing of an individual dissertation. This research work may be replaced by aninternship with a high research content. The subject must be approved by the course leader before the research work or work placement begins.

The duration of the research work or placement varies from 5 to 6 months. In any case, students must have completed 5 months of internship or research work by the time they defend their thesis, which is generally scheduled for the second week of September.

The grade for the "internship" is awarded after correction of its report and evaluation of the oral presentation and is taken into account for 12 ECTS.

5 – Year validation

a) Recognition of Student Commitment (REE)

Pursuant to the decree of 10/05/2017 on the recognition of students' commitment to associative, social or professional life and the circular of 23 March 2022, Université Paris Dauphine-PSL is implementing a cross-cutting recognition scheme for the validation of skills additional to academic training (cf. decision of the Board of Directors of 2 July 2018).

The criteria for recognising student commitment are as follows:

- voluntary activity within an internal or external Dauphine association
- elective office at Dauphine or in external bodies
- voluntary activities related to Dauphine's social and environmental responsibility outside the framework of associations (in particular tutoring, sponsorship, involvement in bodies such as the RSU committee, CSE, mission handicap, new campus ambassador)
- professional activity (student employee, self-employed, student entrepreneur, House of entrepreneurship, etc.) and any activity covered by the circular and mentioned in article L.611-9 of the Education Code
- other: high-level sportsperson or artist (excluding talent pathway), student parent, universal national service, family carer and any activity mentioned in article 611-9 of the Education Code.

The principles governing the eligibility of applications are as follows:

- the same activity can only be credited once during an initial training course (Bachelor's and Master's degrees at Dauphine);
- this valuation is only possible for a commitment in the current academic year.
- if the student is engaged in several activities in the same year, only one activity is eligible for recognition of student commitment.
- activities that are already recognised as part of the degree (work experience, internship, etc.) cannot be recognised as student commitment.
- possibility of applying during a gap year and validation of the commitment by the isscourse of a certificate.

A cross-disciplinary panel is responsible for assessing the acquisition of specific skills. Validation of these skills takes the form of a bonus that is systematically included in the final average for the year:

0 ; 0,1 = Interesting ; 0,2 = Good ; 0,3 = Very Good ; 0,4 = Exceptional

a) Year validation and final grade calculation and diplomation

Validation of a year entails validation of both semesters and all the courses composing them, as well as all the associated ECTS.

The final grade for a year is calculated as a weighted average of the final grades for all the courses composing the year, the weight of the final grade for a course being equal to the ECTS associated with the course.

The 2ème year diploma in Computer Science is definitively acquired (as well as the 60 ECTS associated with it) if all the following conditions are met:

- the year consists of at least **60 ECTS** and the final grade for the year **is at least 10/20** ;
- the final grade for each semester is **greater than or equal to 10/20** provided that the final grade for each course in the semester is **greater than or equal to 06/20** ;
- the course grade is **equal to or higher than 10/20**.
- validation of at least one PSL WEEK.

6 - Distinctions

The grade point average (GPA) is calculated as the average of the final grades for each semester and the grade is determined as follows:

- Passed (Passable: P) rating, if $10 \leq Nf < 12$;
- Honours (Assez Bien: AB) grade if $12 \leq Nf < 14$;
- Summa cum Laude (Bien: B) if $14 \leq Nf < 16$;
- Magna cum Laude (Très Bien: TB) if $Nf \geq 16$.

7 - Remedial session

In the event of failure at the first examination session, the student must retake the final course grades of **less than 06/20**. This grade cannot be retained for the remedial session (and failure to attend the remedial examination **will result in a grade of 0/20**).

The student may choose whether or not to retake the other courses that have not been validated (**reminder: a course that is part of an acquired semester (cf. paragraph I.3) is automatically validated**). For these courses, in the event of absence from the examination, the grade from the first session is retained; in the event of attendance at the examination, the grade from the remedial session replaces the grade from the first session.

For each course, the type and duration of the test in the second session may differ from those in the first session. In particular, an oral examination may be organised.

II - Specific rules

1 - Number of registration authorizations in the 2ème year Master's degree in Computer Science (IASD)

In the event of failure, re-registration in the 2ème year Master's degree in Computer Science (IASD) is not automatic. Only the jury, at the remedial session, will decide whether to authorise the student to repeat the year.

If a student repeats a year, he or she retains:

- validated semesters.
- the dissertation, if validated
- all courses for which the final grade is **greater than or equal to 10/20** in non-validated semesters.
- all the courses in which they have been admitted.

2 - Students completing their Master 2 in two years

At the end of the first year, the jury applies the same rules to the courses taken by the student as for repeating the year (see section II.1).

At the end of the second year, the jury applies the same rules to the student as for a one-year course.

3- Pedagogical Committee

In the event of a change in the course or year syllabus, a teaching committee chaired by the professor in charge of the program will be responsible for establishing any correspondence between the acquired courses and the the current year courses.

4 - Absence

Any absence from a mid-term or final examination will result in a grade of 0/20. No remedial examinations may be organised outside the mid-term or final examination timetable set by the department.

Absence from a continuous assessment test (other than a part-time examination) will also result in a grade of 0/20 unless a waiver is granted by the professor in charge of the course, with supporting documentation. This waiver must be requested within 15 days of the test.

5 - Fraud

In the event of fraud or attempted fraud in examinations, the teacher responsible for supervising the room will take all necessary measures to put an end to the fraud (without interrupting participation in the test) and will initiate disciplinary proceedings in accordance with the internal regulations.

Only the disciplinary section, to which the relevant authorities have referred the matter, has the power to impose a penalty.

6- Choosing credits from other Master programs

In semester 4, students enrolled in the 2ème year Master's degree in Computer Science (IASD course) may choose optional courses from those offered in the 2ème Master's degree in Mathematics and Applications (MASH course):

- Computational methods and MCMC
- Applied Bayesian Statistic

- Logs and data
- Graphical models

This approach requires:

- Compatibility of timetables (note that some of the courses offered in M2 MASH may be taught in the 1er semester).
- a written request from the student.
- the written agreement of the teacher of the concerned course.
- a written response from the administration.
- compliance with the M2 MASH knowledge assessment procedures for the evaluation of courses.

7- Examination adjustments for disability grounds

In order to guarantee equal opportunities for all students (circular no. 2011-220 of 27 December 2011), students with disabilities are allowed adjustments to the conditions under which they sit for examinations, whether for continuous assessment tests or final examinations, and whatever the arrangements for these tests. These adjustments may be made for one semester or for the whole of an academic year and include in particular the granting of extra time and its inclusion in the examination timetable.

For students whose disability is established at the start of the academic year, the university's Mission Handicap must be contacted by the student within 3 weeks of the beginning date of the course.
For students whose disability is established during the course of the academic year, the student must contact the university's Mission Handicap as soon as possible and at least 15 working days before the date of the first test for which adjustements is requested, whether for continuous assessment or final exams.

After receiving advice from the Preventive Medicine doctor, the administrative authority, the Vice-President for Training and Student Life by delegation of the President, decides on the adjustements granted and notifies the student of its decision.

Before the start of each test, students must be able to show proof of the adjustements they have been granted. In the absence of such proof, the administration reserves the right to refuse access to the adjustements on the day of the examination.

III - Role of the jury

The jury takes its decisions in full sovereignty and independence on the basis of all the results obtained by each candidate during the examination, where applicable.
The jury's deliberations are recorded in minutes.
The jury's deliberations are not subject to the obligation to state reasons.
Any dispute must be duly justified and submitted in writing to the Chair of the Examination Board or the President of the University within 2 months of the publication of the results. The response to the complaint must be sent by registered post with acknowledgement of receipt. Within the same time limit, the interested party may also remedial to the Paris Administrative Court. However, students are reminded that they may not challenge the jury's sovereign assessment of the value of their performance in the examinations.

1 - First-semester jury

At the end of the first semester, the jury draws up a report listing the students who have been declared "admitted" or "not admitted" for the first semester.
The first-semester jury may exempt a student from retaking the semester in which the final grade is less than 10 at the remedial session. In this case, the final grade for the first semester is retained. However, the student may waive this right (in writing before the remedial session) and retake at the remedial session all or some of the courses for which the final grades are below 10. For each course retaken, the new grade will be taken into account.
Repeat students who meet the conditions for validation of the year (see section I.5.b) by the 1er semester jury, may be awarded the 2nd year of the Master's degree in Computer Science, IASD course.

2 - Remedial session jury

At the end of the remedial session, the jury draws up a report listing the students declared "admitted" or "not admitted". The jury may validate a semester even if the conditions indicated (see paragraph I.3) are not met. In this case, the final grade for the semester is retained.
The jury reserves the right to validate a year even if the conditions indicated (see paragraph I.5.b) are not met. In this case, the final grade for the year is retained.

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Appendix 1: Composition of semesters

Semester 3

Fundamental courses 3 (30 ECTS)
- Foundations of Machine Learning (5 ECTS) - Optimization for machine learning (6 ECTS) - Data acquisition, extraction and storage (5 ECTS) - Data Science Lab (5 ECTS) - Deep learning for image analysis (3 ECTS) - Reinforcement learning (3 ECTS) - Large language models (3 ECTS)

Semester 4

Optional courses (choose a minimum of 18 ECTS)
- Advanced machine learning (3 ECTS) - Incremental learning, game theory and applications (3 ECTS) - Point Clouds and 3D Modelling (3 ECTS) - Knowledge graphs, description logics, reasoning on data (3 ECTS) - Graph analytics (3 ECTS) - Machine learning on Big Data (3 ECTS) - Computational social choice (3 ECTS) - Monte-Carlo search and games (3 ECTS) - Deep reinforcement learning and applications (3 ECTS) - Privacy for machine learning (3 ECTS) - No SQL databases (3 ECTS) - Knowledge representation, planning and reasoning (3 ECTS) - Planning, search and constraint solving (3 ECTS)

PSL Week (2 ECTS)

Internship (10 ECTS)
Internship 5 to 6 months

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Appendix 2: Calculation of scores

An evaluation element is characterised by several attributes:
- Attribute 1: continuous assessment / final examination,
- Attribute 2: execution mode,
- Attribute 3: individual control / group control.

Semester 3

Compulsory courses **Coefficient : 30 ECTS**

Course	ECTS	Attribute 1	Attribute 2	Attribute 3	Scoring formula
Foundations of Machine Learning	5	Continuous assessment (cc)	To be specified at the beginning of the course	Individual	N1 = 0.3CC + 0.7E
		Final examination	Written exam	Individual	
Optimization for machine learning	6	Continuous assessment (Project)	Homework assignment	Individual	N2 = 0.5Pr + 0.5E
		Final examination	Written exam	Individual	
Data acquisition, extraction and storage	5	Continuous assessment (Project)	To be specified at the beginning of the course	Individual	N3 = 0.5Pr + 0.5E
		Final examination	Written exam	Individual	
Data Science Lab	5	Continuous assessment (Project)	To be specified at the beginning of the course	Individual	N4 = Pr
Deep learning for image analysis	3	Continuous assessment (TP)	In-class and home assessment	Individual	N5 = 0.25CC + 0.75E
		Final examination	Table-top or online exam	Individual	
Reinforcement learning	3	Continuous assessment (cc)	To be specified at the beginning of the course	Individual	N6 = 0.25CC + 0.75E
		Final examination	Written exam	Individual	
Large language models	3	Continuous assessment (cc)	To be specified at the beginning of the course	Individual	N7 = 0.5CC + 0.5Pr
		Continuous assessment (Project)	To be specified at the beginning of the course	Individual or group	

CC = Continuous assessment
E = Examination
Pr = Project
TP = Practical work

$$NS3 = \frac{6N2 + 5(N1 + N3 + N4) + 3(N5 + N6 + N7)}{30}$$

Semester 4

Optional courses **Coefficient : 18 ECTS**

Select a minimum of 6 courses from :

Course	ECTS	Attribute 1	Attribute 2	Attribute 3	Scoring formula
Advanced machine learning	3	Continuous assessment	To be specified at the beginning of the course	Individual	N1 = CC
Incremental learning, game theory and applications	3	Continuous assessment	To be specified at the beginning of the course	Individual	N2 = CC
Point Clouds and 3D Modelling	3	Continuous assessment (cc)	To be specified at the beginning of the course	Individual	N3 = 0.3CC + 0.7Pr
		Continuous assessment (Project)	Homework assignment	Individual	
Knowledge graphs, description logics, reasoning on data	3	Final examination	Written exam	Individual	N4 = E
Graph analytics	3	Continuous assessment (Project)	Homework assignment	Individual	N5 = Pr
Machine learning on Big Data	3	Final examination	Written exam	Individual	N6 = E
Computational social choice	3	Final examination	Written exam	Individual	N7 = E
Monte-Carlo search and games	3	Continuous assessment (Project)	Homework assignment	Individual	N8 = Pr
Deep reinforcement learning and applications	3	Continuous assessment	To be specified at the beginning of the course	Individual	N9 = CC
Privacy for machine learning	3	Continuous assessment (cc)	Homework assignment	Individual	N10 = 0.4CC + 0.6Pr
		Continuous assessment (Project)	Oral examination	Group	
No SQL databases	3	Continuous assessment	To be specified at the beginning of the course	Individual	N11 = CC
Knowledge representation, planning and reasoning	3	Final examination	Written exam	Individual	N12 = E
Planning, search and constraint solving	3	Continuous assessment (Project)	To be specified at the beginning of the course	Individual	N13 = Pr

CC = Continuous assessment
E = Examination
Pr = Project

$$NS4 = \frac{6(\text{from N1 to N13})}{18}$$

Course	ECTS	Attribute 1	Attribute 2	Attribute 3	Scoring formula
Internship	10	Continuous assessment (dissertation)	Home evaluation	Individual	N14 = NS
		Final examination	Oral examination (defense)	Individual	

NS = Note de Stage

$$MG = \frac{30\ NS3 + 18\ NS4 + 10\ N14}{58}$$