

HAX606X – Satisfaction survey (2024-2025)

Course name. Convex optimization.

Institution. Faculty of Sciences of Montpellier.

Audience. Pure & applied mathematics students.

Level. 3rd year of B.Sc.

Role. Practical/coding classes and exams marking.

Contents

Chap. 1 – Unconstrained extrema

- Notion of convexity and optimality conditions
- Descent methods and separable functionals
- Stochastic gradient

Chap. 2 – Constrained extrema

- Strong and weak formulations, Lagrange multipliers and Newton's method
- KKT conditions, duality and Uzawa algorithm
- Linear programming

Chap. 3 – Introduction to mathematical learning and applications

Objectives. As part of my doctoral journey and with the ambition of becoming a university lecturer, I have once again conducted a satisfaction survey to gather direct feedback from my students. This feedback is essential to help me evaluate and continuously refine my teaching practices, ensuring they align with the high standards expected in higher education.

Beyond personal development, this survey also provides valuable insights for potential recruiters. It offers an authentic and transparent view of my teaching style, as experienced directly by students, highlighting aspects such as the clarity of explanations, the relevance of the materials, the overall effectiveness of the sessions, and the degree of student engagement.

For this course, 12 students responded to the survey out of the 15 who attended regularly (from a total of 22 enrolled). Their feedback and detailed results are presented on the following pages.

Pedagogical method. For this course, I was exclusively in charge of the practical classes, focused on numerical programming and coding aspects. Given that some students had little or no prior experience with programming, I adopted a highly guided approach at the beginning of the semester, carefully explaining each line of code and ensuring that the logic behind every instruction was clear.

Beyond simply writing code, I also took time to teach good programming practices, including the importance of writing clean, readable code and how to effectively debug — an essential skill often overlooked at this level.

Throughout the semester, I maintained a strong emphasis on personalized support. During every session, I regularly moved around the classroom to check on each student individually, answering questions, helping them troubleshoot issues, and making sure no one was left behind.

This close and attentive approach helped students gradually build confidence in their coding abilities, and allowed them to connect theoretical concepts to their practical implementation in a meaningful and supportive environment.

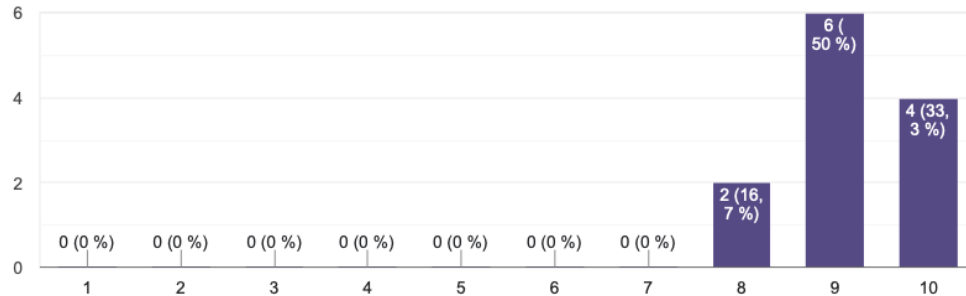
Survey results.

Final grade for my teachings : **9.17/10**.

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Final grade: your overall satisfaction with this tutorial and the supervisor? (note finale : ta satisfaction globale concernant ce TP et l'encadrant ?)

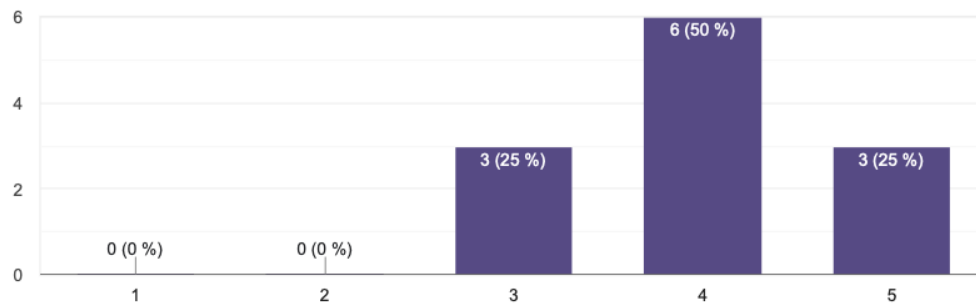
12 réponses



Involvement in tutorial classes (Niveau d'implication en TP)

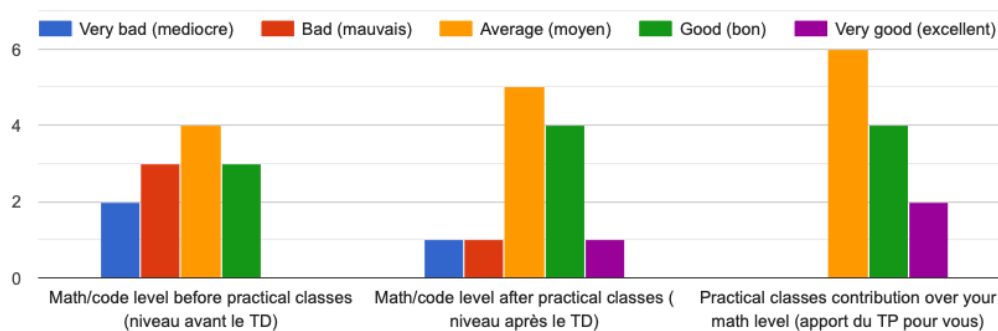
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12 réponses



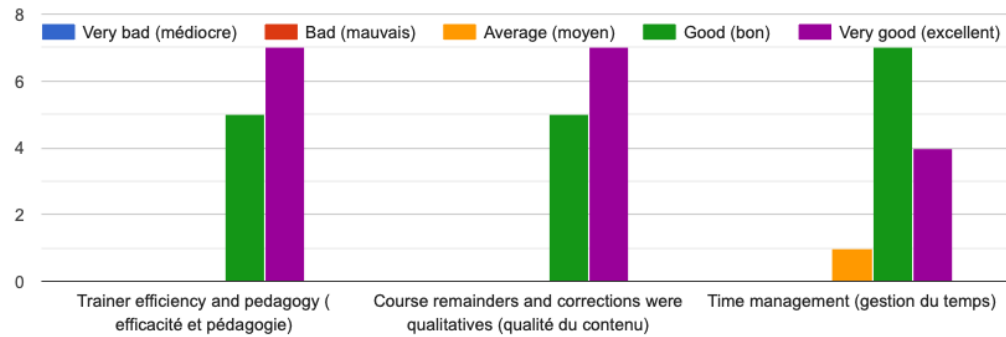
Contribution to learning (contribution à l'apprentissage ce semestre)

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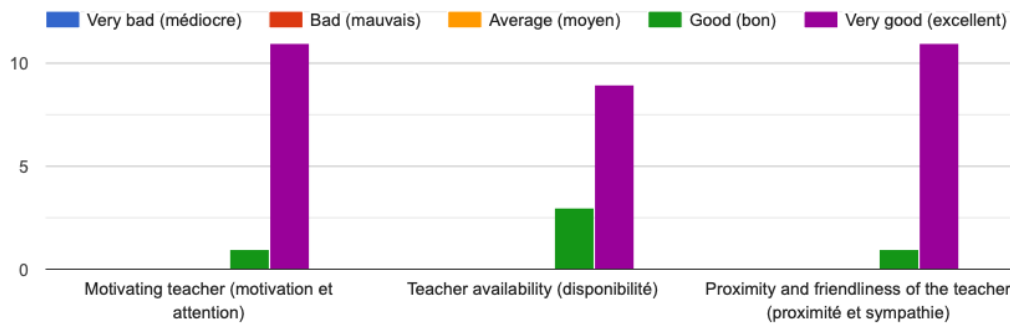
Trainer skills and responsiveness (compétences et réactivité de l'enseignant)

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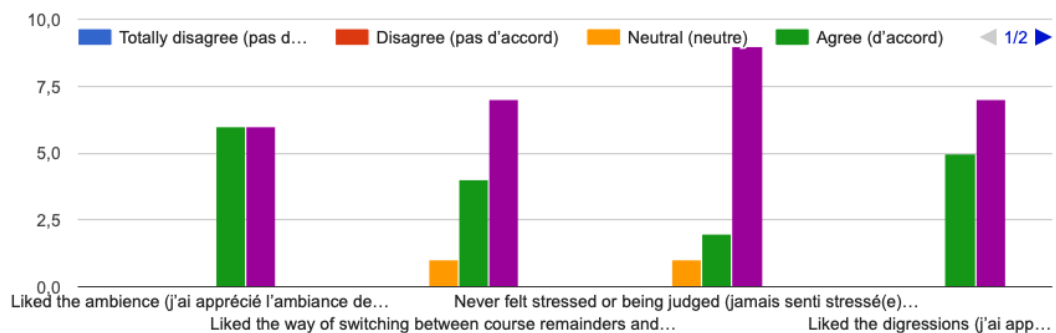
Trainer human qualities (qualités humaines de l'enseignant)

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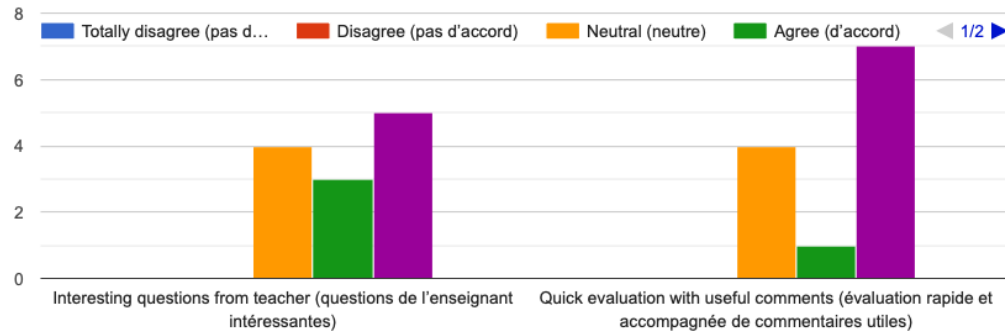
Atmosphere and activities (ambiance et activités)

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Assessment (évaluation)

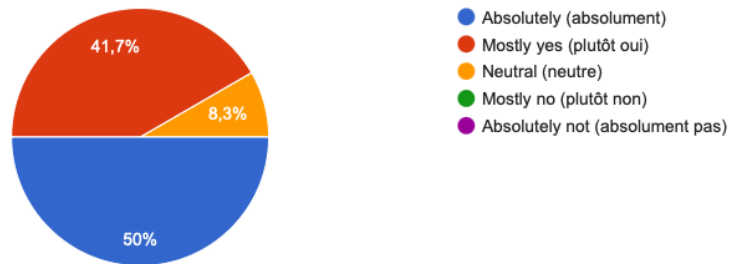
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Has your vision of numerical analysis evolved positively between the start and the end of the tutorial? (est-ce que votre vision de l'analyse numérique a évolué positivement entre le début et la fin du TP ?)

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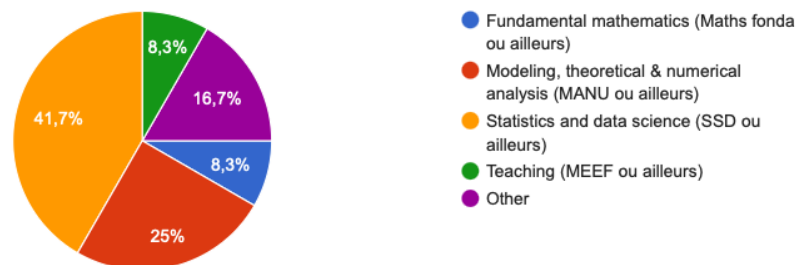
12 réponses



Which type of master's degree do you want to pursue next year? (Quel type de master souhaitez vous suivre l'année prochaine ?)

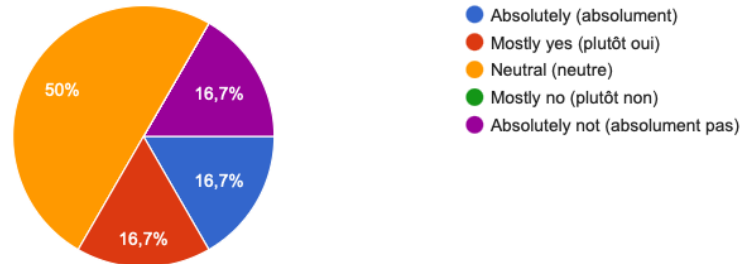
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12 réponses



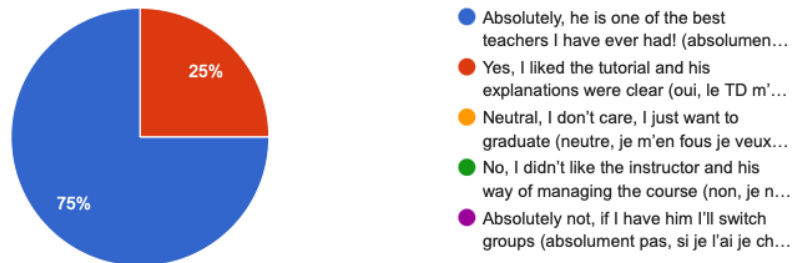
Did your professor influence your choice of master's degree? (est-ce que votre professeur vous a influencé dans votre choix de master ?)

12 réponses



Would you like to have your teacher back in lectures or tutorial classes one day? (souhaiteriez-vous un jour avoir votre encadrant de nouveau en CM ou TD/TP ?)

12 réponses



Positive aspects.

1. **Dedication and accessibility** : Students praised my strong investment in their success, particularly through personalized guidance during practical sessions and my constant availability for individual support.
2. **Teaching style and pedagogical skills** : My methodical and progressive approach to explaining code — line by line at the beginning — was highly appreciated. Students emphasized the clarity and patience with which concepts and practices were introduced.
3. **Practical programming and best practices** : Beyond simply learning to code, students valued being introduced to clean coding habits and debugging techniques, skills that are often overlooked at this stage.
4. **Positive evolution of skills and confidence** : Many students reported a significant progression in their coding abilities and a more positive vision of numerical analysis by the end of the semester.
5. **Support for academic orientation** : Several students mentioned that the course helped them refine or confirm their plans for master's studies, especially in fields related to numerical analysis, modeling, or data science.

Suggestions for improvement.

1. **Clarification of some statements** : A few students suggested that some practical instructions could be formulated more clearly, to make it easier to understand what is expected during the coding sessions.

2. **More step-by-step guidance for beginners** : Although the coding was progressively explained, some students recommended providing even more hints or examples for those completely new to programming.
3. **Adjusting workload perception** : One comment pointed out that, for students with no prior coding experience, the workload could sometimes feel intense ; a slight adaptation for absolute beginners could be considered.

Personal note.

I feel truly fortunate to have worked with such a serious, determined, and enthusiastic group of students throughout this semester. Many of them showed remarkable perseverance and curiosity, even when faced with the challenges of programming for the first time.

Teaching practical sessions exclusively allowed for a different kind of interaction, focused on building technical skills step by step. It was truly rewarding to witness the students' rapid progression : at the beginning of the semester, many had little or no experience with coding, yet by the end, they were able to develop and implement full numerical schemes to solve complex problems.

From the first sessions, I made it a priority to support each student individually, moving around the classroom to provide explanations, correct errors, and encourage good practices such as clean coding and debugging techniques. Seeing the confidence and autonomy they gradually gained was one of the most satisfying aspects of this experience. To properly conclude this very rewarding semester, I am planning to organize a small gathering where we can meet again, share a snack, and celebrate the journey and achievements we have built together.

Some of the nicest comments (traduced).

- "The course progressed very gradually, and no one was really left behind, which was great. The corrections provided on Moodle were also very complete, making it very practical to review and work at home."
- "I really liked the fact that you weren't passive like most other TP instructors. For once, it felt genuinely useful to be in class rather than doing it from bed with ChatGPT as backup."
- "Perfect from the beginning to the end."
- "Personally, I really liked your teaching method, and it allowed me to make real progress in Python. The fact that you explained your code step-by-step while taking the time to check individually with each student really helped us understand our code and our mistakes."
- "Overall, it was very solid in my opinion — you have nothing to envy compared to many professors (compared to those I've had before)."
- "Yes, he made sure to check in with everyone during each practical session."
- "I was already considering pursuing the MANU master's program, but (like many others, I think) you really convinced me to go for it. Also, if your goal is to become a great professor, I sincerely think you're well on your way — you can be proud of yourself!"