Report - MJ2507 - 2024-01-26

Respondents: 1
Answer Count: 1
Answer Frequency: 100.00%

Please note that there is only one respondent to this form: the person that performs the course analysis.

Course analysis carried out by (name, e-mail):

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DESCRIPTION OF THE COURSE EVALUATION PROCESS

Describe the course evaluation process. Describe how all students have been given the possibility to give their opinions on the course. Describe how aspects regarding gender, and disabled students are investigated.

I extended an invitation to all students to nominate themselves as part of the course council, and I'm pleased to say that 6 students kindly accepted the invitation. Subsequently, I introduced the members of the course council to the entire student body and encouraged all students to share their thoughts, feedback, suggestions, and concerns with the council.
During the semester, I convened a meeting with the course council to gather feedback on the first block of the course. Another meeting is scheduled with the course council at the end of the course.
The course council comprised 5 male members and 1 female member, and no students with disabilities were represented.
Additionally, towards the end of the course, I distributed an evaluation questionnaire to all students and sent reminders to encourage active participation. The questionnaire results include average responses to LEQ statements for all students, disaggregated by gender (Female, Male, Other, Prefer not to say), student type (International master student, International exchange student, Swedish student in years 1-3, Swedish student in years 4-5, Other type of student, Prefer not to say), and disability status (Yes, No, Prefer not to say), with only 1 student with ADHD responding.

DESCRIPTION OF MEETINGS WITH STUDENTS

Describe which meetings that has been arranged with students during the course and after its completion. (The outcomes of these meetings should be reported under 7, below.)

At the outset of the course, I provided my email address to all students and encouraged them to reach out if they had any concerns or points to discuss. I assured them of my willingness to respond via email or schedule a meeting if necessary. Additionally, I invited all students to nominate themselves for the course council, and I'm pleased to report that 6 students graciously accepted this invitation. Subsequently, I introduced the council members to the entire student body and encouraged open communication, inviting all students to share their thoughts, feedback, suggestions, and concerns with the council.
Throughout the semester, I organized a meeting with the course council to gather feedback on the initial phase of the course, and another meeting is planned for the conclusion of the course. These sessions have been focused on course evaluation.
In addition to these meetings, the course included 18 sessions comprising teaching, labs, seminars, etc., although I understand that this question pertains specifically to the course evaluation sessions.

COURSE DESIGN

Briefly describe the course design (learning activities, examinations) and any changes that have been implemented since the last course offering.

The course is divided into three main parts. The first part consisted of three programming sessions aimed at ensuring that all students acquired a basic understanding of programming. The second part focused on the theory of deep learning techniques, beginning with simple algorithms and gradually progressing to more complex ones, allowing students to grasp the evolution process. Each theory lecture was followed by practical programming homework assignments, enabling students to apply what they had learned during the sessions. This part of the course comprised nine lectures, two exercises, and five home assignments. During one of the lectures, an industrial lecturer was invited to discuss the practical applications of the course in industry.
The third part of the course involved group projects. Students were randomly assigned to 24 groups of five people each. The projects were related to research topics within three units of the Department of Energy Technology. The group work commenced with a session where all supervisors explained the projects, and team members had the opportunity to become acquainted with one another. Every two weeks, students and supervisors met to discuss progress. At the conclusion of the course, all groups presented their work and received feedback from supervisors and peers. The course concluded with a group report.
This was the inaugural presentation of the course.

THE STUDENTS' WORKLOAD

Does the students' workload correspond to the expected level (40 hours/1.5 credits)? If these is a significant deviation from the expected, what can be the reason?

The course is worth 6 credits, equivalent to 160 hours of study time. According to the results of the questionnaire, 32% of respondents perceive the workload to be between 6-8 hours per week, 24% estimate it to be between 3-5 hours per week, and 12% believe it to be between 12-14 hours per week. If we take the average workload as 8 hours per week, over the course of 19 weeks, the total workload would amount to approximately 152 hours, which is slightly less than the allotted 160 hours. However, given that the course requires some basic programming knowledge, it is understandable that certain students may perceive the workload to be higher.

THE STUDENTS' RESULTS

How well have the students succeeded on the course? If there are significant differences compared to previous course offerings, what can be the reason?

Around 16 out of 119 students (around 13%) didn't complete the course. These 16 students have passed INLA and PROA, and just need to take re-exam to pass KONA.

STUDENTS´ANSWERS TO OPEN QUESTIONS

What does students say in response to the open questions?

Students appreciated various aspects of the course, including: Relevance and industry applicability, Interesting and well-covered topics, particularly neural networks, Structured lectures and helpful homework assignments, Engaging group projects that expanded understanding, Supportive teaching staff and structured lectures, Real-life applications of course content.
However, Students provided a range of feedback on how to improve the course, including suggestions to: Randomize projects within program tracks for better relevance, Increase coding emphasis in homework assignments, Accelerate lecture pace and elevate homework difficulty, Provide additional coursework on data cleaning and processing, Enhance clarity on group project structure and requirements, Offer more energy-related examples in class, Provide clearer instructions for data cleaning and forecasting tasks, Ensure equitable distribution of programming expertise within project groups, and Address concerns about exam difficulty and clarity.

SUMMARY OF STUDENTS' OPINIONS

Summarize the outcome of the questionnaire, as well as opinions emerging at meetings with students.

The questionnaire and discussions with students revealed several key points:

Workload and Course Structure:
Generally, the workload was considered acceptable, but improvements in project organization and supervision were suggested, especially for those investing more time.
Some students felt the workload was well-distributed, while others found it heavy, particularly when dealing with coding aspects.

Project Organization:
There were concerns about the organization and fairness of group projects, with suggestions for clearer guidelines, fairer distribution of work, and more support from supervisors.

Course Content and Learning Experience:
Students appreciated the relevance of the course content to industry and the engaging nature of topics like neural networks and AI applications.
Homework assignments were seen as helpful for reinforcing lecture content, although some students suggested more challenging coding tasks.
Suggestions were made to improve lecture pacing, increase homework difficulty, and include additional topics like data cleaning and processing.

Exam and Grading:
Feedback on the exam varied, with concerns about its fairness, clarity, and alignment with course content.
Some students felt the grading system, especially for homework assignments, was inconsistent and could be improved for fairness.

Recommendations for Future Participants:
Future participants were advised to prepare in programming if beginners, start the final project early, and engage actively in group projects to enhance learning.

Additional Suggestions:
Some students suggested offering foundational programming courses for those lacking prior knowledge.
There were mixed opinions on the exam format, grading criteria, and project assessment, highlighting the need for clearer guidelines and consistency.

Overall, while students appreciated the course content and learning opportunities, there were notable areas for improvement in project organization, workload management, exam clarity, and grading consistency. Addressing these concerns could enhance the overall student experience and learning outcomes.

OVERALL IMPRESSION

Summarize the teachers' overall impressions of the course offering in relation to students' results and their evaluation of the course, as well as in relation to the changes implemented since last course offering.

Based on the feedback provided by students, there are several key takeaways and areas for improvement in the course offering:
1) Workload and Balance: Overall, the workload seemed to be acceptable for most students, with some noting that it was perfectly distributed, while others felt it was heavy at times, particularly for those with less programming experience.
2) Group Work Dynamics: Issues with group formation and unequal contributions were highlighted, indicating a need for better supervision and support to ensure fair collaboration within groups.
3) Project Organization: Several students mentioned issues with the organization and structure of the group project, including lack of clarity on expectations, differing approaches among supervisors, and challenges with presentation logistics.
4) Course Content and Structure: Students appreciated the relevance of the course content, particularly its application to real-world scenarios. However, there were suggestions to enhance certain aspects such as increasing the depth of certain topics, adding more energy-related examples, and providing clearer instructions for assignments.
4) Assessment and Grading: There were mixed opinions regarding the assessment and grading methods. Some students felt that the grading was fair, while others expressed concerns about the fairness of group assessments and the grading criteria for exams and assignments.
5) Preparation and Prerequisites: Some students suggested that a stronger background in programming would have been beneficial for effective learning in the course. Recommendations included providing foundational knowledge sessions or prerequisites to bridge skill gaps.
6) Communication and Expectations: Clear communication of expectations, assessment criteria, and course policies was highlighted as an area for improvement to avoid confusion and ensure a smoother learning experience.
7) Suggestions for Future Participants: Advice for future participants included recommendations to start assignments early, seek help when needed, and ensure a solid understanding of programming basics before the course begins.

ANALYSIS

Is it possible to identify stronger and weaker areas in the learning environment based on the information you have gathered during the evaluation and analysis process? What can the reason for these be? Are there significant difference in experience between:
- students identifying as female and male?
- international and national students?
- students with or without disabilities?

Strengths:
1) Many students found the course content to be relevant, interesting, and applicable to real-world scenarios, particularly in the field of renewable energy and artificial intelligence.
2) The alignment between lectures, homework assignments, and group projects helped students to understand and apply the concepts learned in class effectively.
3) Several students expressed enthusiasm for the subject matter and appreciated the opportunity to learn about neural networks and AI algorithms.
4) Homework assignments were generally viewed positively as they provided regular practice and reinforcement of lecture content.
5) While some students faced challenges with group dynamics, others appreciated the opportunity to collaborate and learn from their peers.

Areas for Improvement:
1) Several students mentioned issues with group formation, unequal contributions within groups, and lack of clarity in project organization. Improving group dynamics and ensuring equal participation could enhance the learning experience.
2) Some students expressed the need for more emphasis on coding skills, particularly in Python, and suggested increasing the difficulty of homework assignments to better prepare for the project.
3) Concerns were raised about the exam structure, including lack of clarity on format and content, as well as discrepancies between sample exams and actual exams. Students also highlighted issues with project grading fairness and transparency.
4) Students suggested providing clearer instructions and prerequisites for the course, particularly regarding programming skills, to ensure a more equitable learning experience for all participants.
5) While not explicitly mentioned in the feedback, ensuring diversity and inclusion in course materials, examples, and group dynamics could contribute to a more enriching learning environment for all students.

Analysis of Differences:
Gender: The feedback did not contain explicit references to differences based on gender.
International/National: Some international exchange students mentioned their previous knowledge in programming, which influenced their experience with the course content. However, no significant differences were explicitly mentioned based on nationality.
Students with/without Disabilities: The feedback did not contain specific references to differences based on disability status.

PRIORITIZED COURSE DEVELOPMENT

What aspects of the course should be developed primaily? How can these aspects be developed in short and long term?

Project Organization and Group Dynamics:
1) Develop a more structured approach to forming project groups to ensure equal contribution from all members.
2) Implement clearer guidelines and expectations for project progress updates and presentations.

Course Content and Structure:
1) Incorporate more energy-related aspects into class lectures and homework assignments to better align with the subject matter.
2) Increase the difficulty of homework assignments, particularly in terms of coding, to better prepare students for project tasks.

Exams and Grading:
1) Communicate exam details, including duration, format, and grading criteria, clearly and well in advance to alleviate student stress.
2) Consider offering an open-book exam format with coding allowed, consistent with the skills developed during homework assignments.
3) Ensure fairness in grading by addressing concerns about unequal workload distribution and the impact on individual grades within group projects.

Support and Resources:
1) Offer support or additional sessions for students who may have a weaker background in programming to ensure they can fully engage with the course material.
2) Provide access to relevant literature or resources on machine learning and coding to supplement course materials.

Feedback and Assessment:
1) Review the grading system for homework assignments and exams to ensure consistency and fairness.
2) Consider providing more detailed feedback on both individual assignments and group projects to facilitate learning and improvement.

Continuous Improvement:
1) Regularly solicit feedback from students and instructors to identify areas for improvement and make adjustments accordingly.
2) Continuously update course content and structure to reflect advancements in the field of machine learning and address emerging industry needs.