Report - MJ2424 - 2022-08-16

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.

Students are encouraged to contact the course leader or other teachers if there are questions or concerns. Some input had been obtained this way. Feedback was also channeled via the involved MSc programs. (Note: much of the teaching was conducted remotely owing to the pandemic.)

No specific actions were taken in addressing issues related to gender or accessibility for students with special needs. However, the course leader completed a course on gender aspects during HT19.

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.)

Meetings were arranged via the SEE Program during the course. Feedback was also obtained from RENE, although no face-to-face meetings between students and instructor were organized.

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

This course had been organized by Paul Petrie-Repar prior to VT20 (he left KTH in May 2019) and is nearly identical to the contents of MJ2480, offered to THRUST students during the fall semester. Since taking responsibility of the course the overall structure was retained. P3 covers key theory required for successfully implementing CFD simulations using commercial software, and serves as a basis for programming of simple CFD problems. P4 involves group projects using ANSYS as a tool. Previously developed lecture material was further refined, including references to an e-book available through KTHB. Home assignments were reviewed and updated, with complete solutions included and support given in class.

For VT22 the lecture material was improved for both MJ2480 and for the present course round. Additional support on Matlab programming was offered and support for home assignments (before and after submission) was improved. A CFD group project on heat transfer was offered once again in addition to the aerodynamics project offered in previous years.

Going in to VT22 there was uncertainty as to if in-class teaching could be allowed owing to the pandemic. In the end all course activities were moved to digital formats. The most significant impact with this adaptation was on the exam. In previous editions (prior to VT21) the exam was traditional: in-class, paper-based with emphasis on theory. For a second round a take-home exam was offered that was largely based on programming done for home assignments.

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?

A 6 hp course corresponds to a weekly workload of approximately 11 hours (assuming 14 weeks active study throughout the semester). All respondees (6 of 61 students) reported efforts in this range.

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?

As in the last round students performed satisfactorily on the home assignments and exam and very good on the CFD projects. The oral confirmation following the exam allowed for a one-on-one check on student performance. During these 15 minute sessions it was possible obtain a reasonable idea on student engagement in the course, most notably on programming of CFD calculations. Here it was found that a majority students had made solid attempts at programming, with many excelling in this task. A few students did not manage the programming part well and had to submit an Fx assignment to pass the course.

STUDENTS´ANSWERS TO OPEN QUESTIONS
What does students say in response to the open questions?

Responses indicated a high level of satisfaction with the aerodynamics project and to some degree the quality of the home assignments. Some critical feedback was provided on the theory/lecturing module along with the heat transfer project. Also, programming efforts were considered to be high.

SUMMARY OF STUDENTS' OPINIONS
Summarize the outcome of the questionnaire, as well as opinions emerging at meetings with students.

Difficult to compare student opinion with outcomes from VT21 as the number of respondees was very low in this round. Overall there seems to be a reasonable level of satisfaction although some critical issues are raised.

The three main strengths of the course (scores 6.0-6.6): the assessment of the course was fair and honest; my background knowledge was sufficient to follow the course; I was able to learn by discussing and collaborating with others.

The three main weakness of the course (scores 3.8-5.2): the intended learning outcomes helped me to understand what I was expected to achieve; I was able to learn from concrete examples that I could relate to; The course activities helped me to achieve the intended learning outcomes efficiently.

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.

As in the last round the programming-based problems from the home assignments were highly emphasized as these problems were a basis for the take-home exam. Theoretical topics linked to these assignments remain critical but there is still scope to improve the presentation of these topics in lectures, including more emphasis on practical issues linked to CFD programming. Mismatch between projects (aerodynamics and heat transfer) remain so this needs to be examined.

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?

Not possible to address owing to the low number of respondees.

PRIORITIZED COURSE DEVELOPMENT

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

This course has been phased out although the theoretical/programming module taught in P3 will be retained in a new 3-hp course on numerical heat transfer. The overall structure of this module is judged to be satisfactory. Students joining the new course are expected to have good programming skills since the course is elective, which should contribute to a smooth delivery. Important to keep improving the lecture contents and link them to actual applications.