

3-årig emneevaluering GEOV112

Emne: GEOV112

Semester og år for gjennomført emneevaluering: H2019, H2020, H2021

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Innhold:

1. **Beskriv og begrunn pedagogiske valg i emnet, reflekter over studentens læring som følge av disse valgene.**

GEOV112 is a 3rd semester course. It is mandatory for the geophysics students. Other students who take the course are exchange students, geology students and, sometimes, students from other departments. GEOV112 is the 2nd/3rd geophysics course for the geophysics students (it is taught in parallel with GEOV113) and its main goal is to provide the students with basic (Matlab) programming skills with applications in a variety of geophysical problems. GEOV112 in its current form has been taught since 2010.

The course is roughly divided in two parts. The first part, which lasts 8 weeks, has a strong focus on programming with applications in geophysics. The 2nd part covers two topics in geophysics, various aspects of plate tectonics and magnetism, and lasts 4 weeks. There is programming in this second part but it is not emphasized as much.

As the students learn a practical skill (programming) in this course and how to apply this skill to problems in geophysics this is a practical course. The best way to teach that is using active learning techniques. A variety of active learning techniques have been used in this course. At the request of students less active learning techniques have been used than in the past.

An integral part of the course consists of the exercises. There are a total of 7 exercise sets. These are graded and currently form 25% of the final grade. The exercise sets develop Matlab skills and apply these to geophysical problems. In addition to the exercises, there are 3 quizzes in the first part of the course. The emphasis in the quizzes is more on the Matlab and less on the geophysics. The quizzes also form 25% of the final grade. Most years there are also one or two practice quizzes, i.e. quizzes that do not count towards the final grade.

The students work on the exercises on their own, in pairs or in groups of threes. They do this to a large extent during 4 hours in class 'teaching'. It turned out there was a demand for more guidance. This is why, a number of years ago, an additional 2 hours every week were introduced. The exercises are a time consuming part of the course from an instructional point of view. The presence of teaching assistants is therefore basically a must. The teaching assistants, who give their feedback on the course in point 4 below, also grade the exercises. The graded exercises are discussed with the teachers and detailed written and oral feedback on the exercises is given to the students. The quizzes are graded by the teacher and, discussed in class as well with individual written feedback, if necessary. The exercises and quizzes together constitute the formative assessment part of the course. A summative assessment of the course is done in the final exam which counts for 50% of the grade.

We thus believe that there is good constructive alignment between the learning outcomes, the teaching methods and the assessment. At the same time there is probably also room for improvement. For example, it would be useful to, already at this stage, be able to let the students do (small) independent projects. However, this is not easy to organize from a practical point of view and especially challenging now that the budget for teaching assistants (TAs) has been cut.

Typically there used to be 3-4 TAs and for many years there was also a stipendiat. Last semester there was only one TA. This is worrisome. Besides being time consuming for both the teachers and students, this course is also challenging. Having TAs significantly helps the students and also lowers the threshold for the student to ask for assistance, though even in that case it is sometimes not easy for the students to ask for help (see the comments from the TAs below). Obviously, in the end it is up to the individual student to make use of the various types of help that are offered.

As an aside it is perhaps also good to note that for the TAs, either older Bachelor students or 1st year Master students, being part of the course is a very valuable teaching and learning experience.

The Covid-19 related lockdown obviously also affected teaching of GEOV112. In 2020 a large part of the course was taught online. While the students kept on participating well this is far from ideal. In 2021 the students who took the course had just finished a year of teaching which to a large extent had been taught online. The teachers' impression was that this had a negative affect on the learning habits of the students. Among other things, they did not do as well in the quizzes as in previous years. However, it is difficult to quantify this.

Finally, this is an essential course for the (geophysics) students. The skill learned in this course forms the basis for the programming skills that the students develop further in 200-level courses and eventually use in their master thesis projects. Students, TAs and colleagues tend to be very positive about the course and its learning outcomes. As pointed out earlier it is useful to have a textbook that can be used in the course. This is still work in progress. It would be possible, in principle, to modify the exercises and the topics covered, as there are many other interesting topics in geophysics not covered in this or other courses, but this is quite a bit of work.

2. Oppfølging av tidligere evalueringer

See point 3 below.

3. Studentevaluering og andre evalueringer som er relevante for emnet

In the period 2019-2021 only one evaluation was done. This was in 2021. There was an evaluation in 2018. Based on the latter evaluation (which is quite positive, with 1A and 3B's) as well as the teachers' own experience it was decided that no major change in the course was needed.

The 2021 evaluation also revealed that the students were quite happy with the course. The students again gave the course a relatively high grade: 3 A's and 5 B's. This is quite good for a mandatory 100-level course. It is also consistent with, and perhaps a slight improvement compared to, most previous evaluations. At the same time the students also thought this is not an easy course; which is as it should be.

There were a few comments on the quizzes, with one student asking for the answers. The quizzes are a useful part of the course as they show to students potential knowledge gaps. The quizzes, including the answers always are extensively discussed in class after they have been graded.

4. Erfaringer fra andre som bidrar i undervisningen på emnet, både studenter og ansatte

Feedback from teaching assistants who helped out in the course:

Faget oppleves som veldig greit å være studentassistent i. Studentene virker å trives med faget, de er engasjerte og gjør en innsats. Det er også tydelig at de hører på tilbakemeldinger. Emneansvarlige er veldig kjekke å jobbe med, og vi ser at de er engasjerte for studentene og deres læring. Faget oppleves som kontinuerlig relevant, og derfor «lett» å komme tilbake til. Det krever relativt lite forberedelser da lærestoffet blir brukt jevnlig gjennom studieløpet.

Tidligere år (2020 og 2019) var arbeidsmengden for undervisningsassistent overkommelig. Med kun én assistent i 2021 ble det litt i overkant. Fra 2019-2020 var det noe feil i fasit ved retting, men dette ser ut til å være rettet opp i aller største grad til 2021. Bruken av digitale verktøy som mittUiB for å kommunisere med studentene har også blitt utbedret.

Vi opplever at flere studenter ikke spør om hjelp, selv om de egentlig trenger det. Vi lurer derfor på om det hadde vært mulighet for opprettelse av et forum hvor studentassistenter kan legge ut tips, og svar på ofte stilte spørsmål. På den måten vil også de studentene som ikke oppsøker hjelp kunne få noe av den samme veiledningen.

5. Strykprosenten på emnet

In the period 2019-2021 no students failed the course. 7% of the students received an E.

Rapport i Tableau:

https://rapport-dv.uhad.no/#/views/SVP3Emnegjenomfring_1/Emnegjenomfringslister?:iid=2

6. Eventuell fagfelleevaluering

Not applicable.

7. Vurdering av samsvar mellom emnets læringsutbyttebeskrivelse og undervisnings-, lærings- og vurderingsformer

We believe that the active learning methods used in the course constructively align with its learning outcomes. See also point 1 above.

8. Vurdering av om framdrift og opplegg for emnet er i samsvar med de fastsatte målene for emne og program

See point 1 above.

9. I de tilfellene det er tilknyttet praksis eller arbeidsrelevans i emnet, skal det evalueres om ordningen fungerer tilfredsstillende.

Not applicable.