

3-årig emneevaluering: GEOV331

Emne:

Semester og år for gjennomført emneevaluering: 2021 (våren)

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Innhold:

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

The course theme and content is co-designed with the students as a means of giving them ownership of their own learning and content from the start. This works well and the students engage strongly with the process however it does require significant guidance and oversight in order to insure maximum value (of the specific content)—it also ensures that the material is maximally relevant. The format is a student run seminar discussion of scientific papers where the aim is to critically and constructively identify the value and weakness of a given study and to identify what the next research step should be following on this. By the end of the course the students increase their discussion skills, are able to synthesize and present complex ideas, critically assess scientific work/results/literature, and identify new hypotheses and design experiments to answer them. The latter point is achieved/evaluated through a proposal project that the students undertake in the final third of the course. Peer-peer assessment is used in the proposal project as a formative tool to increase student understanding of what makes a successful proposal and what specific content and approaches are successful. This peer assessment has been a recent addition over the past couple of years and the students respond very positively to this and feel strongly that it has value (as demonstrated in follow up in-class surveys which I carry out). I have intentionally minimized the lecture based learning to a couple of short introductions in the beginning and at key transition points in the course where new and complex concepts and proxies require short introductions. Students instead are asked to synthesize and present most new proxies/concepts for each other and generally do well (with guidance and oversight/additions from the lecturer during the discussions). COVID-19 slowed the discussions and progress in the course because of the difficulty and awkwardness of digital platforms—instead we built online discussion forums for discussing specific aspects in advance of meeting in person. We were able to cover less ground because of this, but the students felt the pre-discussions gave them a chance to go back to the literature and investigate ideas and comments more thoroughly so that they were much better prepared for in person discussions and acquired deeper insights into the topics. We have since made these online pre-discussions a regular part of the in-person course.

Emneevalueringer skal også minst omfatte:

2. Oppfølging av tidligere evalueringer

While the course has always had student input in its content, the co-design was enacted and formalized following suggestions from earlier student evaluations. Likewise, the proposal project was added in response to students expressing uncertainty in whether they were really learning to formulate hypotheses well enough (based on follow up discussions and surveys in previous

years). The extended proposal project with formative peer assessment allows them to sharpen their skills and ultimately, trains them to self-assess their own abilities.

3. Studentevaluering og andre evalueringer som er relevante for emnet

See above answers, normally student evaluations have been exceptionally positive (thus not particularly helpful) but specific student reflections and follow up discussions with students has been instrumental in refining the course design and learning activities.

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

No other staff contribute, students lead the course and their experiences have been included in comments above. Unfortunately GEO rarely evaluates this course so I have to run my own evaluations at the end of the course—they are less formal but highly instructive. Why do we not formally evaluate courses every year?

5. Strykprosenten på emnet (1.4% since 2011; 0% last 4 years)

Rapport i Tableau: https://rapport-dv.uhad.no/#/views/SVP3Emnegjennomfring_1/Emnegjennomfringslister?:iid=2

6. Eventuell fagfellevurdering

I had peer review in 2020 in GEOV331 as part of a pedagogics course I was attending. Since it was COVID lockdown, it was about how we did the online discussions/fora and how that worked as a precursor to in person discussions session to help the students identify areas where they need to go back to the literature and investigate more deeply. The approach was adopted by the peer reviewer in their own course.

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

I have already described this above but can repeat via a specified response to each learning outcome:

Kunnskapar

Studenten kan

- summere opp havsirkulasjon i tidlegare tider, og forklare korleis den skilte seg frå den moderne tilstanden
 - students do this on a weekly basis and review and synthesize what new aspect we have learned and what it tells us about circulation in the past as part of the weekly discussion. The evaluation is obvious as they can, or cannot, do this each week.
- forklare metodar som vert nytta til å rekonstruere havet sin kjemi og sirkulasjon, og moglege feil i samband med kvar metode
 - They explain and present these methods to each other throughout the course as we read and present papers employing different methods. The evaluation, again, is their ability to do this.

Ferdigheiter

Studenten kan

- analysere og tolke data og trekke logiske slutningar om tidlegare endringar i havet
- formulere og presentere vitenskapelige argument og konsept
- kritisk vurdere vitenskapelige studiar for robustleik, logisk og empirisk konsekvens, klarheit, og reflektere over tydinga av eit resultat
 - These goals are all acquired and demonstrated/assessed through the weekly discussion of scientific articles where they have to analyze results and draw critical and reasoned conclusions of the presented results. They also have to reflect over (and synthesise) how the new results combine with previous findings that were already discussed and add to the picture of what we do, and do not, understand about past circulation.

Generell kompetanse

Studenten kan

- arbeide og diskutere i grupper for å kollektivt tolke vitenskapelige data
- presentere, diskutere, og kritisk vurdere primær litteratur
- formulere ein vitenskapelig hypotese og designe eit eksperiment for å teste hypotesen
 - Again, these outcomes are demonstrated (trained and evaluated) through group discussion activities. The formulation of hypothesis and design of an experiment to test it is evaluated through the project proposal activity and refined through peer-peer assessment.

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

Critical reflection and training at the scientific method are general goals of the program which are foci of this course. In addition, the specific goals of the course are to train students to read papers critically, formulate arguments and assess the value and limitations of a given study. More specifically, the course provides a background in how the ocean circulation works and varies with climate in the past and provides a theory introduction to the utility and limitations of specific approaches (proxies and models) for reconstructing past ocean environments. These are all supporting both the course and program goals.

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