



Example template – Course analysis (course evaluation)

Course code 1BI048	Course title Molecular Medicine – Cardiometabolic and Infectious Diseases	Credits 15
Semester (spring/autumn) Autumn	Period 2020-11-04 – 2021-01-15	

Course coordinator Rachel Fisher (Course Director) Hanna Björck, Christopher Sundling (Deputy Course Directors) Mari Liljefors (course administrator)	Examiner Rachel Fisher
Teacher in charge of component Rachel Fisher + Hanna Björck (Cardiometabolic diseases) Christopher Sundling (Infectious diseases) Nicolas Pillon + David Plaza (Research application) Magdalena Paolino (Lab – Methods in Molecular Biology)	Other participating teachers A range of teachers, both from within and outside the Department of Medicine (Solna), including both clinicians and researchers (from KI and/or KS).

Number of registered students during the three week check 41 + 2 returning students (HT16 and HT19, respectively)	Number approved on the last course date 36 (incl. one returning student with results registered under HT19).	Response frequency course valuation survey 51%
<p>Other methods for student influence (in addition to concluding course valuation)</p> <p>The course had two course councils. One was held in the middle of the course with course representatives and the second was open to all students and was held at the end of the course, after the final exam and oral presentations of the research application.</p> <p>Students were encouraged to give feedback either directly to the course leaders or to the class representatives for subsequent discussion with course leaders. Students were also asked for feedback on the structure of Journal club seminars, which were also modified accordingly.</p> <p>The setup and structure of the digital distance exam was discussed with the course representatives, and their points were taken into consideration when designing the exam.</p>		
<p>Feedback reporting of the course evaluation results to the students</p> <p>The summary of the course survey was made available on the course webpage on Canvas, at the same time as the course analysis was made available. Specific issues brought up by the students in the course evaluation were commented on in the course analysis.</p> <p>Results of the survey from the previous course (HT19) were presented at the start of the present course, and strengths and weaknesses of the HT19 course were discussed. Changes that had been made (content, structure etc.) were presented and explained in the context of the results of the survey. The importance of collecting feedback from students for developing and improving the course was explained.</p>		



Note that...

The analysis should (together with a summarising quantitative summary of the students' course evaluation) be communicated to the education committee at the department responsible for the course and for programme courses and also the programme coordinating committee.

The analysis was communicated to the education committee on the following date: 2021-03-09

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1. Description of any conducted changes since the previous course occasion based on the views of former students

i) The Research Application assignment was developed in response to comments from students from the previous course. Firstly, the research application assignment was more thoroughly introduced as a whole and topics more relevant from a global health perspective were chosen. The introduction was divided into two sessions. Secondly, aspects of global health were also incorporated as an assignment, to guide the students into looking for data on the global health impact of the research application topic. Thirdly, assignments to promote reading and understanding was introduced where students individually had to provide a short summary of a relevant paper. Lastly, the contact with mentors/discussion partners was formalised to facilitate and strengthen this interaction. Specifically, groups were required to contact their mentor and report to responsible teachers how the discussion went. This helped prevent problems that arose with unavailable mentors and groups contacting them too late.

ii) Workshops were improved and instead named journal clubs, with the aim to promote critical thinking. Published scientific articles were analysed and critically discussed, from an experimental point of view as well as from a wider perspective. Answering preparatory journal club questions for each research article, respectively, were made compulsory in order to encourage a more active discussion among students.

ii) The timing of some parts of the course were altered in an attempt to improve the organisation of the course.

iii) Some new lecturers were introduced and some previous lecturers were removed (partly in response to student feedback). This was especially the case for the part of the course relating to infectious diseases, to minimise overlap with the Immunology and Microbiology course in semester 3 of the Programme. The content of lectures was modified to go into the topics with greater depth and to focus on the integration of different topics from those covered in semester 3.

2. Brief summary of the students' evaluations of the course

(Based on the students' quantitative responses to the course valuation and key views from free text responses. Quantitative summary and any graphs are attached.)

The students generally appreciated the research application, assignments, labs and lectures. Students thought that they had achieved the course's learning outcomes. Specifically, they felt that the course had promoted a scientific way of thinking and reasoning, which was a key goal of the course. Further, students felt that they took a great responsibility for their own learning during the course, but found the workload challenging due to assignments and learning activities running in parallel and several

deadlines to keep track of. Students encourage improved digitalization and recording of lectures for future courses.

On the negative side, the students found it very hard to see the common theme running through the course in terms of linking cardiometabolic and infectious diseases. While the journal clubs (which aimed to highlight this interplay) seemed to be appreciated, many students did not attend them since they were not compulsory, even though they were judged to be worthwhile. Making the submission not only of answers to the journal club discussion questions compulsory but also journal clubs were generally thought to be a good development for the future.

There was criticism regarding the design of the digital distance exam and its set up was experienced as stressful.

3. The course coordinator's reflections on the implementation and results of the course

Strengths of the course:

- The research application encourages independent thinking in choosing a research question and designing an appropriate experimental design.
- The main lab covers important methodologies for molecular studies and focuses on the whole process from set up and design of experiments, acquiring and analyzing data, as well as interpretation and presentation of results, in the format of a scientific abstract.
- The assignments take complex research-based problems and provide a forum for discussion, which enables misunderstandings to be clarified.
- Journal club seminars provide training in reading, analysing and critically discussing published scientific articles, which promote the development of critical thinking.

Weaknesses of the course:

- The course's objectives and learning outcomes would benefit from clarification to improve coherence between learning outcomes, learning activities and lectures, and the final examination.
- Lack of a course textbook (this makes it difficult for the students to know exactly what they should learn for the exam).
- Difficult to exemplify the connections between the cardiovascular/metabolic and infectious diseases. Not many teachers are expert in this area and hence hard to lead discussions etc. Journal clubs were included to highlight the area, find connections and promote understanding.

3. Other views

Due to the pandemic, the course had to be held almost exclusively online. Although the transition of most of the learning activities went smoothly, improvements are needed for future semesters. Many lectures included online activities to activate students and support them in their learning. These activities can be developed further in future to strengthen the course's pedagogical development.

Digital examination is preferable as this facilitates the inclusion of more advanced questions that promote analysis and test deeper understanding through the utilisation of different resources. However, digital examination at distance provides a number of major challenges, but this format was necessary in HT20 due to the Covid-19 situation.

The clinical aspect of the course is extremely important, but it is not always easy to get the level right for Biomedicine students. Clinical lecturers are sometimes experienced to teach at a level that would be more appropriate for medical students. Generally, it is difficult to ensure that teachers are appropriately prepared so that they understand the specific requirements for the student group they are teaching. It is challenging to get a good balance between expertise in the different topics covered in the course and continuity (i.e. many teachers vs. few teachers).

4. Course coordinator's conclusions and any suggestions for changes

(If changes are suggested, state who is responsible for implementing them and provide a schedule.)

The purpose of the course needs to be presented even more clearly during the introduction to the course, as well as emphasized throughout the course. The goal is to make it clear that the main aim of the course is to train the students in skills and competences that are necessary for biomedical research, e.g. critical thinking/analysis, designing a research project, interpreting and presenting data, giving and receiving constructive feedback and acting upon this feedback,. The main focus is not to learn about the interplay between cardiometabolic and infectious diseases, as this is rather used to support the primary aim of developing the students scientific approach. In order to do so the course syllabus will be updated and modified. Those responsible for this development are Hanna Björck (Course Director) and Christopher Sundling (Deputy Course Director).

A number of new lectures will be introduced. Both in order to promote the understanding of the interplay between cardiometabolic and infectious diseases, but also to broaden the health perspective and prepare the students for their Bachelor's thesis, which follows directly after this course. For example, a lecture/workshop on the topic 'the interprofessional work environment' will be introduced, as well as lectures related to epidemiological research, how to design experiments, and finally how to interpret and present different types of data. Those responsible for this development are Hanna Björck (Course Director) and Christopher Sundling (Deputy Course Director). In addition, integration of digital tools to support student learning activities and teachers will be further advanced. The responsible person for this development is Mari Liljefors (course administrator).

Journal clubs (answering preparatory questions and seminars) will be made compulsory. Their timing, as well as deadlines for submitting answers will be revised. Some of the articles will be changed/improved. Those responsible for this are Christopher Sundling (infectious diseases) and Hanna Björck (cardiometabolic diseases).

The research application assignment will be further developed and improved. Specifically, as a result of student feedback, the format of the lecture related to scientific writing will be changed into a workshop, in which the students are given the possibility to work with, and get feedback on their own research application. The teachers responsible for this part of the course are Nicolas Pillon and David Plaza.

The above changes are in line with preparing the students for their Bachelor's thesis, which follows directly after this course. The "Molecular Medicine – Cardiometabolic and Infectious Diseases" course should function as an opportunity for the students to review what they have learnt previously in the programme and apply this in a range of scenarios.

Appendices: