Example template – Course analysis (course evaluation)

Course code	Course title	Credits
1BI051	Biochemistry	12hp
Semester (spring/autumn) VT26	**Period** 19/1 – 10/3	

Course coordinator	Examiner
Manuel Zeitelhofer	Bernhard Lohkamp
Teacher in charge of component	**Other participating teachers** various

Number of registered students during the three week check	Number approved on the last course date	Response frequency course valuation survey
69	42	72%
Other methods for student influence (in addition to concluding course valuation) **Course committee meetings** (3 times, 2 during the course, 1 after)		
Feedback reporting of the course valuation results to the students Survey (without comments) will be published on Drupal and sent to students who have participated in the survey. Survey was discussed with the course committee.		

Note that...

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

The analysis was communicated to the education committee on the following date: 260401
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1. Description of any conducted changes since the previous course occasion based on the views of former students

In the protein lab preparation quiz new questions giving examples for calculations needed for this lab were added, which was very much appreciated by the students. The lipid lab manual has been reviewed and adapted to a more user-friendly form i.e. reshuffling of content not related to the practical part into the lab section of the Canvas course page.
To foster group work in the project works randomization of presentation order was introduced i.e. the students did not know which part they should present until 2 days before the presentation session. The course survey questions have been reviewed and questions related to both project works, learning expectation as well as to the AI workshop and the COPE seminar were included.

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

Overall, the course was rated very good, with a mean score of 4.9/6 for overall satisfaction and 4.9/6 for active learning opportunities. Students particularly appreciated the integrative nature of the course, the relevance of content, and the combination of lectures, labs, and project work. Students reported a strong sense of inclusion and a supportive learning environment (mean 5.2/6) and high responsibility for their own learning (mean 5.4/6). The course structure and examination were generally perceived as relevant to learning outcomes (means ~4.9-5.0/6), although some students noted inconsistencies between teaching content and what was examined (this was mainly related to the topic of atherosclerosis as well as to a wish for more explicit information on what content of the PW metabolism in health and disease is part of the examination). Feedback was rated somewhat lower (mean 4.5/6), with recurring comments requesting more detailed feedback, particularly for project work presentations. Workload was generally perceived as appropriate (65%), although a substantial proportion of students considered it too high, especially due to clustering of deadlines (week 5 of the course with PW lipid presentation, intermediate lipid test and submission of lipid lab report) and the presence of two project works presentations. Laboratory components were highly valued, especially the insulin lab (mean 4.3/5), while the lipid lab and project works received slightly lower ratings due to organisational issues and perceived workload, respectively. A notable finding is that a large proportion of students reported using AI tools, primarily to improve understanding of course content (73.9%)

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

Strengths of the course

The course continues to demonstrate strong integration between theoretical and applied biochemistry, which is highly appreciated by students. The combination of lectures, seminars, laboratories, and project work supports deep learning and helps students connect biochemical pathways to physiological and clinical contexts. Laboratory exercises are a major strength, particularly due to their relevance and hands-on nature. Students highlighted the value of working with real biological samples and developing practical skills. The overall course structure, including intermediate tests, supports continuous learning and helps students manage the content. Students also appreciated the enthusiasm and availability of teaching staff, as well as the generally clear structure of the course.

Weaknesses of the course

Despite improvements, several challenges remain. Seminar quality varied between groups, largely due to differences in teacher engagement (this applies only to seminar 1-3 according to student feedback). Students expressed a desire for more guidance and better feedback for their seminar group works especially in those 3 seminars. Although there were many positive comments on the project works, they were perceived as demanding. The presence of two project works, combined with the randomized presentation format, contributed to increased stress. For some students workload distribution seems an issue, but only for week 5 with several overlapping deadlines (lab report, intermediate test, and project work presentation). The lipid lab organisation still needs improvement. Issues included (perceived) insufficient staffing, waiting times, and uneven teacher support across student groups. Students expressed a wish for

more detailed model answers to previous examination questions to better understand the expected depth and level of detail required in their responses. Finally, feedback for the project work presentations as well as for the protein lab report was perceived as insufficient.

4. Other views

The course committee meetings confirmed many of the survey findings. Regarding AI, while many students used AI tools to support learning, attendance at the AI workshop was very low both due to perceived relevance (better phrasing of the title next year) as well as due to the occurrence of previous AI workshops.

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

For the lipid laboratory, a key improvement with high impact and no additional cost would be to split the lab over two days. Gas chromatography (GC) analyses could then be performed the following days (GC of Monday samples on Tuesday, and GC of Tuesday samples on Wednesday). This adjustment would improve workflow, reduce congestion and waiting times, and enhance the overall student experience (ODa and MZe).

For the protein laboratory, an important issue identified was inconsistency in grading and feedback between different lab teachers. Some students reported that the feedback received was unclear and not sufficiently actionable for improving subsequent lab reports. Thus, we have to continue to work on emphasizing the importance of the feedback to the teachers and point them towards the example corrections we have on the Canvas teacher corner (MZe and TNy).

Regarding the project wors, it would be beneficial to keep the project work metabolism in health and disease as it is central to the integrative metabolism module of the course while exploring alternative formats for the project work lipids that retain the key learning outcomes while reducing the overall workload for students (and thus limiting the course to a single presentation session). This could be managed by redesigning the project work lipids into a more interactive or creative format, such as a blog-style assignment published on the course webpage followed by a structured discussion session. This could reduce perceived stress associated with 2 presentation sessions during the course while enabling more effective assessment of students' understanding (ISu, SPa, BLo, MZe).

Provide improved guidelines for seminar teachers including standardization of seminar structure and expectations across all sessions (MZe).

An important point raised by students regarding the examination concerns the expected level of detail in short-answer questions. Students expressed a need for clearer guidance on how much to write in order to achieve maximum points, as well as to better manage their time during the exam and ensure sufficient time is allocated to the essay questions. The model answers for previous exams will be reviewed and eventually updated and will check how we can on improving the clarity of the exam questions (MZe and BLo).

The AI workshop should be renamed and more clearly framed to emphasise its direct integration into course activities, i.e. the project work, and to distinguish it from AI workshops previously attended by the students. At the same time, it is important to consider the actual need for

additional AI workshops, as student feedback suggests that their AI-related skills are already relatively advanced, potentially exceeding the expectations of the teaching staff.

Changes effecting course plan revisions will be implemented latest by 1 October, schedule changes by October and others by the beginning of the course.

Appendices:

Survey