

Teaching portfolio

1. Teaching CV: A list of any lecturing and supervision tasks, including specification of academic fields, scope, level (bachelor, master, continuing education, PhD) as well as any external examiner tasks.

Courses:2022-2023: General Biology (BA, 5 ECTS, 6/12 course sessions)2021-2021: Applied Statistics (BA, 5 ECTS, 12/12 course sessions)2015-2020: Industrial Microbiology and Food Chemistry (BA, 5 ECTS, 7/12 course sessions)2013-2014: Industrial Microbiology and Food Chemistry (BA, 5 ECTS, 6/12 course sessions)2013-2014: Microbial Biotechnology (Master, 5 ECTS, 2/14 course sessions)

Project supervision:2023: Mette Stær Lassen (Bachelor project + Engineering internship)2022-2023: P2: The Central Dogma of Molecular Biology (BA, 15 ECTS, 3 project groups)2020-2022: Bt8: Protein Chemistry (Master, 15 ECTS, 4 project groups)2020-2022: Bt3: Experimental Microbiology (BA, 15 ECTS, 6 project groups)2020-2020: Bio3: Microbial Ecology (BA, 15 ECTS, 2 project groups)2019-2020: Mathias Hansen (Master's thesis)2018-2019: Julie Bruun Jensen (Master's thesis)2018-2019: Cecilie Marcussen (Master's thesis)2018-2019: Bt3: Experimental Biotechnology (BA, 15 ECTS, 5 project groups)2012-2017: P0+P1: Enzyme Technology (BA, 15 ECTS, 23 project groups)

Censorship work (Internal, since 2015):2019-2022: Applied Statistics (BA, 5 ECTS, 484 students)2018-2022: P0+P1: Enzyme Technology (BA, 15 ECTS, 17 project groups)2015-2020: Mt3: Microbial Ecology (BA, 15 ECTS, 13 project groups)

Censorship work (External, since 2015):Censor for Bachelor's and Master's projects at Aarhus UniversityCensor for Bachelor's projects at the Engineering College in AarhusCensor for General Molecular Biology at the Engineering College in AarhusCensor for Master's projects at the University of CopenhagenCensor for Bachelor's projects at the University of Southern Denmark

2. Study administration: A list of any study administration tasks, e.g. study board membership, head of studies or semester or course coordinator, accreditation, etc.

2021-2023: Semester coordinator for the first study year at the Department of Chemistry and Bioscience.

2021-2023: Member of the education committee at the Section for Bioscience and Engineering.

3. University pedagogy qualifications: A list of any completed courses in university pedagogy, PBL courses, workshops, academic development projects, collegial guidance and supervision, etc.

I have completed the "University Pedagogy for Assistant Professors" (2011-2013) at Aalborg University where I have participated in the following courses and workshops:

- Teaching Portfolio as a Method to Further Develop Teaching and Supervision (4 ECTS) including the mandatory workshops- Teaching Methods and Learning Processes (1 ECTS) including the mandatory workshops- Project Work and Supervision (2 ECTS) including the workshops "Supervision and the Role of the Supervisor in PBL" and "PBL in Engineering Education" - Students, teaching methods and learning environment – making changes (1 ECTS) including the "Introduction", "Assessment" and "Feedback" workshops

Attending the courses gave me many useful tools, which I use in my teaching. The workshop on "Supervision and the Role of the Supervisor in PBL" provided novel insight into how you can take advantage of different supervision roles, during different stages of the project supervision. The assessment workshop made me reflect upon how students can be assessed during the teaching period.

References

Biggs, J. (2003): Aligning Teaching and Assessment to Curriculum Objectives, (Imaginative Curriculum Project, LTSN Generic Centre).

Illeris, K. (2006): Læring. København: Roskilde Universitetsforlag.

Savin-Baden, M. and Major, C.H. (2004) Problem Based Learning and Theories of Learning. Chapter three in Foundations of Problem-based learning. The Society for Research into Higher Education & Open University Press.

4. Other qualifications: Conference attendance, editorials, presentations, etc. relating to education, 'University Teaching Day', etc.

Type your answer here...

5. Teaching activity development and teaching materials: A list of any contributions to the development of new modules, teaching materials, study programmes, e-learning, collaboration with external business partners, etc.

Teaching material

My first lectures were based on material and PowerPoint slides I had inherited from prior lecturers of the courses. However, I soon realised that it is difficult to provide good teaching based on other people's material. I therefore restructured my courses, found new teaching materials, and created new PowerPoint slides. After each lecture, I review my PowerPoint slides, and make the needed adjustments. I think this is a good way to produce quality to my teaching.

My project supervision primarily involves supervision of 1st semester students. One of the major goals here is to provide the students with the basic tools required to structure project-based learning and write a good research project. I therefore provide the framework for the project and explicit laboratory protocols. This allows the student to focus on how to write the report and structure their group work. I have made the laboratory protocol myself and after each semester I review these and adjust them if required.

Teaching methods

My lectures are usually based on PowerPoint presentations. I try to include short videos in each lecture to make the lecture more dynamic. The videos are chosen based on their ability to support difficult topics or to outline the context of the material presented. I also try to interact with the students during the lectures by asking questions. In theory, this should create a more energetic teaching environment. However, the students are often reluctant to provide answers and to engage in discussions. Questions are provided for each lecture. During the time allocated for the exercises, I come around to the groups and help with the questions. As the project groups are spread across our new building, the groups send me an email with their room number, when they are in need of help.

For the supervision of 1st semester students, I have designed the overall experimental framework of the projects. This ensures that the experiments will be successful and meet the requirements of the curriculum. The students choose the context of the project, which can be either medical or environmental. This gives the students an influence on the projects and increases their motivation and thereby eagerness to learn. I try to be as much in the labs together with the students as much as possible because it is often here that the students have the opportunity to ask theoretical questions. This provides a friendly atmosphere where the students are not afraid to ask "stupid" questions and thereby clear out eventual misunderstandings. To encourage the students to gain a deeper theoretical understanding, I am also willing to assist in providing relevant scientific papers, which can otherwise be difficult to retrieve due to the limited starting knowledge of the students or rarity of the papers.

Reflections on my teaching material and style

I am convinced, that the best classroom teaching is obtained by using multiple media and by showing enthusiasm about the subject you lecture in. A broad theoretical background on the subject is also advantageous, if not required. It is also important to provide "real life" examples of how the theory can be applied. This ensures that the students can relate to the theory. Asking questions can provide a more energetic teaching environment. However, the success depends very much on the students' willingness to participate in discussion. The use of an anonymous electronic voting systems could provide a solution to the problem.

In my opinion, good project supervision is obtained by handing the responsibility of the projects to the students, so that they feel ownership over it. The students are then able to define a context for their project, which motivates them. However, the students should never be left alone. An important role of the supervisor is to guide the students, so that they are able to make the right choices and learn the theory described in the curriculum.

I also find it important to keep an informal tone during supervision and when we are in the lab. This ensures, that the students are not afraid to ask questions. I also try to answer questions send to me per email as fast as possible (within 24hr) in order to show that the students are important to me. This is also the case for reviewing draft version of their report, where I try to have a fast as possible response time (max. 2 days) without lowering the supervising standard.

6. Teaching awards you may have received or been nominated for.

Type your answer here...

7. Personal reflections and initiatives: Here you may state any personal deliberations as regards teaching and supervision, any wishes and plans for further pedagogic development, plans for following up on feedback/evaluations from students, etc.

Institutional framework for teaching (opportunities and challenges)

Traditions and academic points of view within my research area

I am associated to the environmental microbiology group, which is a relatively large research group of more than 20 people. Within the group, there are people working with all aspects of environmental microbiology and there is always a friendly atmosphere. Collaboration within the group is therefore very good. Due to the small size of our campus, there is also good collaboration with other research groups. Academic staff at all levels ranging from PhD students to professors

are treated as equals. This allows for inspiring discussions, which in the end provide state-of-the-art research.

Target groups for teaching

I am responsible for the 1st semester biotechnology projects. At this stage, the students have not yet learned to master project-based learning (PBL). Introducing the student to PBL is therefore just as important as the teaching of theoretical material. My first semester projects are therefore constructed in such a way that the students are able to learn the required theory, but at the same time have enough time to get acquainted with the PBL model.

My courses in industrial microbiology (4th semester) and microbial biotechnology (7th semester) involves both biotechnology and biology students. The academic level of these two groups with respect to the understanding of molecular techniques is significant. It is therefore difficult to find an academic level of my teaching material, which satisfies everyone.

Organizational framework for teaching

I discuss my teaching with the other academic staff at our institute. This can be a great source of inspiration. I am currently employed as a part of a larger research project (NomiGas) funded by Strategic Research in Sustainable Energy and Environment (Innovation Fund Denmark). This puts some limitation to my time for teaching.

Physical and practical framework

The project groups perform their experiments in our research laboratories. Here we have the adequate equipment and facilities, however I have not yet tried to have project groups in our new laboratories and space may be a problem when there are many groups in the lab at the same time. Careful planning of laboratory work is therefore very important.

Assessment of opportunities and challenges within teaching and supervision

I enjoy supervising the project groups because it allows me to combine my teaching responsibilities with my research. I also like being involved in teaching of theoretical courses as you learn a lot by lecturing. My lecturing is also beneficial for my future career in academia. The major challenge is that good teaching requires time and we as researchers are measured, not on our teaching, but on our ability to publish high-ranking articles. This diminishes the motivation to spend time preparing for lectures.

8. Any other information or comments.