

Teaching Portfolio

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Teaching Philosophy

My ideas about teaching are largely based on the experience of having had several excellent teachers over the years. I believe that teaching in general, but research-based teaching in particular, is an excellent example of a two-way street, where both the students and the instructor benefit from the process. For example, students are exposed close to the state-of-the-art of a field under research-based teaching on one hand. On the other hand I, as an instructor, have to learn a lot myself to plan my teaching, which eventually has opened new areas for my own research. In order for teaching process to be beneficial for students, I believe it should focus on long-term skills and abilities obtained by students, the tools to be used in their future industry or research careers. Development of such a long-term value can be achieved, in my view, by focusing on the following three objectives. First, the course materials should be sufficiently fundamental (although adjusted to appropriate level) and targeted. By that I mean it to consist of basic theoretical and / or practical building blocks that provide enough knowledge to allow performing further independent research in this area, if students choose to do so. Moreover, it is extremely important, especially in an undergraduate level class, to demonstrate a clear connection of the topics considered to our everyday life. For instance, it is amazing how much we rely on network shortest path algorithms in our everyday life via the GPS navigation. Such connections facilitate the interest and create sufficient motivation for learning. Second, the learning process should be challenging enough, since only through self-education the required skills can be developed. Finally, it has to be recognized that the students may have very different backgrounds and levels; still a course material has to be accessible to everyone. In other words, students should feel welcome during the office hours and be able to freely obtain reasonable assistance. In my teaching career I plan to emphasize this approach to instructor / student interaction going forward.

Supervision Experience

Supervised over 16 Bachelor and Master theses, seminar projects at SDU.
Participated in 15 Bachelor and Master theses defenses externally as a censor.

Through my supervision experience, I feel very lucky and proud to have been able to involve some of the most motivated students to research projects. Namely, this concerns my very first M. Sc. student A. C. Andersen writing his Math.-Econ. thesis under my supervision in 2018. Through this cooperation, we have extended the results of his thesis into a full-length journal publication that was eventually published in 2022:

- Andersen, A. C., Pavlikov, K., Toffolo, T. (2022). Weapon-Target Assignment Problem: Exact and Approximate Solution Algorithms. *Annals of Operations Research*, 312, 581–606.

Another instance of involving students to research was J. L. Sørensen, who was writing his B. Sc. thesis (Math.-Econ.) under my supervision in Spring 2022 semester after attending our Operations Research course in Fall 2021. With his dedication and effort, it was possible for us to convert results of his work into the following research paper:

- Pavlikov, K., N. C. Petersen, and J. L. Sørensen. "Exact Separation of the Rounded Capacity Inequalities for the Capacitated Vehicle Routing Problem." *Networks* 83.1 (2024): 197-209.

I would like to summarize that supervising and interacting with such motivated students has been some of my most rewarding experiences in my pedagogical practice.

Pedagogical Competences

2024 Lecture Training Program (LTP) Certificate, University of Southern Denmark
2024 Course certificate: Use student response systems in your teaching (Poll Everywhere)

Teaching and supervision

1. Supply Chain Inventory and Production Planning

He, Y. & Pavlikov, K.
01/09/2017 → 31/12/2017

2. Supply Chain Links and Enterprise Resource Planning

Pavlikov, K.
01/02/2018 → 31/05/2018

3. **Supply Chain Links and Enterprise Resource Planning**
Olesen, O. B.
01/02/2015 → 30/06/2018
4. **Supply Chain Inventory and Production Planning**
Pavlikov, K. & He, Y.
01/09/2018 → 31/12/2018
5. **Supply Chain Links and Enterprise Resource Planning**
Pavlikov, K.
01/02/2019 → 31/05/2019
6. **Supply Chain Links and Enterprise Resource Planning**
Olesen, O. B.
01/02/2019 → 31/08/2019
7. **Supply Chain Inventory and Production Planning**
Pavlikov, K. & He, Y.
01/09/2019 → 31/12/2020
8. **Supply Chain Inventory and Production Planning**
Olesen, O. B. & He, Y.
01/09/2018 → 31/01/2021
9. **Supply Chain Links and Enterprise Resource Planning**
Pavlikov, K.
01/02/2020 → 31/08/2021
10. **Operations Research**
Pavlikov, K. & He, Y.
01/09/2019 → 31/12/2021
11. **Operations Research**
Pavlikov, K. & Olesen, O. B.
01/09/2018 → 31/01/2022
12. **Virksomhedens informationssystemer**
Haug, A.
01/02/2018 → 30/06/2024
13. **Operations and Supply Chain Management**
He, Y. & Pavlikov, K.
01/09/2022 → ...