

# Bachelor Thesis & Seminar (IBE, 29993)

## Summer Semester 2024

**Content:** Within the framework of a bachelor thesis, you work independently on a problem from the field of Production, Logistics, or Business Decision Analysis. An essential part of the work deals with literature search and applying solutions procedures known from the scientific literature. Several topics require skills in Spreadsheet Modeling or VBA programming.

**Applies to:** Bachelor (B.Sc.) International Business and Economics

**Expected prior knowledge:** Interest in the management areas of Production Management, Management Science, or Decision Analysis. Preferably, this interest has been shown in successful participation in related classes such as *Introduction to Production Management* or *Project Seminar: Quantitative Methods for Business*.

**Procedures:** The seminar comprises an (in-person) academic skills tutorial, (online) weekly office hours, ungraded (in-person) mid-term presentations, and graded (in-person) final presentations. Guidance for Academic Writing and a template file are available on the supervisor's homepage and the eLearning page.

### Registration:

See the Bachelor Thesis & Seminar information on the Dean's Office of Study Affairs' homepage.

**List of Topics and introductory sources** (if you want to propose a topic, visit the supervisor ahead of the first meeting):

1. **Modeling and Solution Methods for Maximal-Flow Problems** (Taha, 2017, Ch6.4, Hillier and Lieberman, 2010, Ch9.5)
2. **Heuristics and Metaheuristics for the Traveling Salesperson Problem** (Taha, 2017, Ch11&10, Ghiani et al., 2022, Ch 6.12.1)
3. **Methods to Manage the Design of Products and Services** (Heizer et al., 2020, Ch5)
4. **The Learning Curve: Concept and Managerial Implications** (Heizer et al., 2020, ModE; Nahmias and Olsen, 2021, Ch1.7)
5. **Supply Chain Drivers and Financial Metrics – A Comparison of Companies Based on Annual Reports** (Chopra, S., 2019, Ch3)
6. **Supplier Selection with the Analytical Hierarchy Process** (Ghiani et al., 2022, Ch4 pp. 267-289 & 3.6)
7. **Risk-Pooling Strategies to Manage Uncertainty** (Cachon and Terwiesch, 2024, Ch17)
8. **Revenue Management with Capacity Controls** (Cachon and Terwiesch, 2024, Ch18)
9. **Simulation in Project Scheduling with Uncertain Activity Times** (Anderson et al., 2017, ch9.2,12.1)
10. **Simulation of Periodic Review Inventory Models** (Anderson et al., 2017, ch12.2)

### References

(You will find all sources in the library either as an e-book or a physical print)

- Anderson, D.R., Sweeney, D.J., Williams, T.A., Wisniewski, M., Pierron, X. (2017) An Introduction to Management Science, 3rd ed., Cengage. P.420 - 2017.01721
- Cachon, G., Terwiesch, C. (2024) Matching Supply with Demand, 5th edition, McGraw Hill. (see the supervisor)
- Chopra, S. (2019) Supply Chain Management, 7<sup>th</sup> edition, Pearson. (eBook available)
- Ghiani, G., Laporte, G., Musmanno, R. (2022) Introduction to Logistics Systems Management, 3<sup>rd</sup> ed., Wiley. P.820 - 2023.00785
- Heizer, J., Render, B., Munson, C. (2020) Operations Management: Sustainability and Supply Chain Management. 13th edition, Pearson. (eBook available)
- Hillier, F.S., Lieberman, G.J. (2010) Introduction to Operations Research. 9<sup>th</sup> ed., McGraw-Hill. P.911 - 2009-04768
- Nahmias, S. and Olsen, T.L. (2021) Production and Operations Analysis. 8<sup>th</sup> ed., Waveland Press. P.870 - 2021-01429
- Taha, H.A. (2017) Operations Research – An Introduction, 10<sup>th</sup> edition, Pearson. (see the supervisor)

**A copy of all sources that are not in the library is available at the instructor. Please make an appointment if you are interested.**

If you have any questions, don't hesitate to contact the supervisor: [rainer.kleber@ovgu.de](mailto:rainer.kleber@ovgu.de).