

Industrial Engineering and Management:
Ontological and Epistemological Assumptions,
5 ECTS

*Industriell ekonomi och organisation: ontologiska
och epistemologiska utgångspunkter, 5 hp*

AUTUMN 2016

STUDY GUIDE



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Course Contacts

EXAMINER

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Course Aim, Content and Format

Aim

On completion of the course, the student shall:

Knowledge and understanding:

demonstrate comprehension of ontological and epistemological elements within IEM (Industrial Engineering and Management), including research questions, theory and theorizing, research setting, contributions, limitations, and boundary conditions, and finding your audience, and of how these fit together.

Skills and abilities:

demonstrate the ability to apply ontological and epistemological elements within IEM (Industrial Engineering and Management) in research, research questions, including theory and theorizing, research setting, contributions, limitations, and boundary conditions, and finding your audience, and to fit these together.

Judgement and approach:

demonstrate the ability to make pertinent judgement calls on approaching research using ontological and epistemological elements within IEM (Industrial Engineering and Management), including choosing between the application of different research questions, theory and theorizing, research setting, contributions, limitations, and boundary conditions, and finding your audience, and on when, how, and why to fit these together.

Content

The course covers a broad empirical context and empirical phenomena within IEM, specifically touching upon their ontological and epistemological underpinnings.

Seminar Themes:

1. Ontology: Ontology & Epistemology Introduction. The question "what is the nature of reality?" referring to ontology, prompts exploring whether a phenomenon exists objectively, is subjective, or is socially constructed. Ontology paradigms include pragmatism, critical realism, constructivism, positivism, and interpretivism.

2. On theory and theorizing: What is theory and what is theory not? What are criteria for knowledge to be called theory? What are the building blocks of theories and dimensions of strong theory? This theme also covers theorizing through qualitative research and literature reviews.

3. Research Setting: Scrutinizing specific empirical phenomena within the realm of industrial engineering and management to reveal their ontological and epistemological assumptions.

4. Contributions, limitations, and boundary conditions: A researcher's view of reality directly maps to compatible research contributions given the limitations at hand and establishes the strict boundary conditions of what their theory can legitimately claim to know or explain.

5. Finding your audience and eliciting support: Aligning the researcher's specific view of reality and knowledge production with an academic community, conference, or journal that shares or actively debates those same philosophical paradigms.

Course format

The course is built around 5 teacher-led lectures and student-led seminars (with previous assigned readings for the students) and assignments delivered individually and presented in student-led oral presentation and discussion sessions. Attendance in Seminars is mandatory. Students prepare and handle the seminars using a flipped classroom approach. Total estimated student workload is 133 hours.

Examination

The examiner is Associate Professor Denis Coelho. Grades given are Fail or Pass. The 5 ECTS are distributed as follows:

Seminars (3 ECTS): Based on mandatory attendance and active participation. Graded Pass/Fail.

Re-examination of seminars: for every missed seminar, the student must arrange a similar seminar with people, gather the audience, and video record it.

Assignments (2 ECTS): Based on individual preparation, written submission and oral presentation and oral discussion. Graded Pass/Fail (with option to revise).

Re-examination of assignments: failed or missed assignments can be re-examined within re-examination weeks or upon agreement with the concerned teachers, involving a written submission, an oral presentation followed by an oral discussion.

All Seminars and Assignments must be graded as passed for the course to be graded as passed. Co-grading will be conducted by the respective seminar teacher(s) and the overall course examiner to determine the final grade.

Instructions for the assignments

Assignments are to be prepared individually by the student and submitted in written form, presented orally and individually in a follow-up group session. Supervision for the assignment is to be sought with the teacher(s) responsible for the specific theme of the assignment.

Assignment 1: Reflect on your own ontological starting point (1 page).

Assignment 2: Reflect on your own theory and theorizing approach (1 page).

Assignment 3: Reflect on your own research setting (e.g., Operations management, Supply chain management, Logistics, Work organisation, Resource based view, Contingency theory, Dynamic capabilities, Behavioural operations, Innovation and entrepreneurship, Operations strategy, Knowledge management, Organisational learning, Production planning and control) (1 page).

Assignment 4: Reflect on your own contributions, limitations and boundary conditions (1 page).

Assignment 5: Finding your own audience (1 page).

Course Assignment: Reflect on your full research project altogether using the AMJ Management Research Canvas (approx. 8-12 pages).

Lecturers

Ontology: Denis Coelho

On theory and theorizing: Erik Waltré

Research Setting: Nina Edh

Contributions, limitations and boundary conditions: Erik Waltré

Finding your audience and returning to the big picture: Nina Edh and Erik Waltré

References/Literature List

Seminar 1 - Ontology

Dorobantu, S., Gruber, M., Ravasi, D., & Wellman, N. (2024). The AMJ management research canvas: A tool for conducting and reporting empirical research. *Academy of Management Journal*, 67(5), 1163-1174.

Petropoulos, F., et al. (2026). Operations & supply chain management: principles and practice. *International Journal of Production Research*, 64(1), 330-513.

Kant, V., & Kerr, E. (2019). Taking stock of engineering epistemology: Multidisciplinary perspectives. *Philosophy & Technology*, 32(4), 685-726.

Eriksson, D., & Engström, A. (2021). Using critical realism and abduction to navigate theory and data in operations and supply chain management research. *Supply Chain Management: An International Journal*, 26(2), 224-239.

Seminar 2 - On theory and theorizing

(mandatory reading before the seminar is marked with asterisk)

On theory

*Sandberg, J., & Alvesson, M. (2021). Meanings of theory: Clarifying theory through typification. *Journal of Management Studies*, 58(2), 487-516.

Sutton, R. I., & Staw, B. M. (1995). What theory is not. *Administrative Science Quarterly*, 371-384.

On theorizing

*Carton, A. M. (2025). The six dimensions of strong theory. *Organization Science*, 36(4), 1242-1270.

Dietz, J. (2026). Building actionable theories: The role of causal constructs. *The Leadership Quarterly*, 37(1), 101929.

Cornelissen, J. P., et al. (2026). Construct Fallacies and Construct Validation in Theories of Management and Organization. *Academy of Management Review*.

Cornelissen, J. P. (2025). The problem with propositions: Theoretical triangulation to better explain phenomena in management research. *Academy of Management Review*, 50: 342-365.

Åhlström, P., et al. (2021). Is lean a theory? Viewpoints and outlook. *International Journal of Operations & Production Management*, 41(12), 1852-1878.

Weick, K. E. (1989). Theory construction as disciplined imagination. *Academy of Management Review*, 14(4), 516-531.

Durach, C. F., Kembro, J. H., Wieland, A. (2021). How to advance theory through literature reviews in logistics and supply chain management research. *International Journal of Physical Distribution & Logistics Management*, 51(10), 1090-1107.

Wieland, A., et al. (2024). Theory as an engine: A guide to qualitative supply chain methodologies. *Journal of Supply Chain Management*, 60(2), 3-33.

Wieland, A., et al. (2024). Theory as an engine: illuminating the white space of SCM knowledge production. *Journal of Business Logistics*, 45(2), 1-17.

Easton, G. (2010). Critical realism in case study research. *Industrial Marketing Management*, 39(1), 118-128.

Ketokivi, M., & Choi, T. (2014). Renaissance of case research as a scientific method. *Journal of Operations Management*, 32(5), 232-240.

Seminar 3 - Research Setting

To be tailored to the individual doctoral student's specific field of inquiry

Seminar 4 - Contributions, limitations, and boundary conditions

(mandatory reading before the seminar is marked with asterisk)

On contributions, limitations and boundary conditions

*Whetten, D. A. (1989). What constitutes a theoretical contribution? *Academy of Management Review*, 14(4), 490-495.

Säfsten, K., Elgh, F., Linnéusson, G., Stolt, R., & Wlazlak, P. (2025). Transdisciplinary engineering research through co-production: Integrating Design Research Methodology (DRM) and interactive research. *Journal of Engineering Design*, 1-27.

Van de Ven, A. H., & Johnson, P. E. (2006). Knowledge for theory and practice. *Academy of Management Review*, 31(4), 802-821.

Davis, M. S. (1971). That's interesting! Towards a phenomenology of sociology and a sociology of phenomenology. *Philosophy of the Social Sciences*, 1(2), 309-344.

Seminar 5 - Finding your audience and eliciting support

(mandatory reading before the seminar is marked with asterisk)

On finding your audience and eliciting support

*Hollenbeck, J. R. (2008). The role of editors in consensus shifting and consensus creation in a field. *Journal of Management Inquiry*, 17(4), 259-265.[1]

Barney, J. B. (2018). Editor's comments: Theory contribution in the Academy of Management Review process. *Academy of Management Review*, 43(3), 331-333.[1]

Course Schedule

- Week 35/2026
by end of week - Video-lecture on Canvas (Denis Coelho – covering Theme 1 - Ontology)
- Week 41 /2026 – first session

Monday, October 5, 2026 by end of day

Due date for Canvas Submission of written assignment 1 - Reflect on your own ontological starting point (1 page)

Thursday, October 8, 2026

10:15 - 12:00 - Seminar on theme 1 (Ontology) including Presentation and Discussion of Assignment 1 (Reflect on your own ontological starting point) – Denis Coelho

13:15 - 15:00 – Seminar on Theme 2 (On theory and theorizing) – Erik Waltré

- Week 43 /2026

Monday, October 19, 2026 by end of day

Due date for Canvas Submission of written assignment 2 - Reflect on your own theory and theorizing approach (1 page)

Thursday, October 22, 2026

10:15 - 12:00 - Presentation and Discussion of Assignment 2 (Reflect on your own theory and theorizing approach) – Erik Waltré

13:15 - 15:00 - Seminar on Theme 3 (Research Setting) – Nina Edh

- Week 45 /2026

Monday, November 2, 2026 by end of day

Due date for Canvas Submission of written assignment 3 - Reflect on your own research setting (1 page)

Thursday, November 5, 2026

10:15 - 12:00 - Presentation and Discussion of Assignment 3 (Reflect on your own research setting) – Nina Edh

13:15 - 15:00 - Seminar on Theme 4 (Contributions, limitations, and boundary conditions) – Erik Waltré

- Week 47 /2026

Monday, November 16, 2026 by end of day

Due date for Canvas Submission of written assignment 4 - Reflect on your own contributions, limitations and boundary conditions (1 page)

Thursday, November 19, 2026

10:15 – 12:00 - Presentation and Discussion of Assignment 4 (Reflect on your own contributions, limitations and boundary conditions) – Erik Waltré

13:15 – 15:00 - Seminar on Theme 5 (Finding your audience and eliciting support) – Nina Edh and Erik Waltré

- Week 49 /2026

Monday, November 30, 2026 by end of day

Due date for Canvas Submission of written assignment 5 - Finding your own audience (1 page)

Wednesday, December 2, 2026

10:15 – 12:00 - Presentation and Discussion of Assignment 5 (Finding your own audience) – Erik Waltré and Nina Edh

- Week 3 / 2027

Monday, January 18, 2027 by end of day

Due date for Canvas Submission of written final course assignment - Reflect on your full research project altogether using the AMJ Management Research Canvas (approx. 8-12 pages)

Thursday, January 21, 2027

10:15 – 12:00 - Presentation and Discussion of Final Course Assignment (Reflect on your

full research project altogether using the AMJ Management Research Canvas) – Nina Edh,
Erik Waltré, Denis Coelho