University of St.Gallen

Course and Examination Fact Sheet: Spring Semester 2025

8,730: Technologien/Technologies: Algorithmic Management

ECTS credits: 3

Overview examination/s

(binding regulations see below)
decentral - Written work, Digital, Individual work individual grade (60%)
Examination time: Term time
decentral - Presentation, Analog, Group work group grade (40%)
Examination time: Term time

Attached courses

Timetable -- Language -- Lecturer
8,730,1.00 Technologien/Technologies: Algorithmic Management -- English -- Beverungen Armin

Course information

Course prerequisites

None

Learning objectives

Students will be able to

- identify key features of algorithmic management and to situate these historically in relation to computing in management;
- discuss and evaluate the use of data, platforms and machine learning in the context of algorithmic management;
- analyse with a set of critical tools how algorithmic management is deployed in specific organizational contexts;
- critically explore ethical, political and cultural issues emerging with algorithmic management as well as possibilities of algorithmic accountability.

Course content

This course is concerned with algorithmic management. Algorithms, as a shorthand for computational systems, are deployed in many areas of digital cultures, from driverless cars to predictive policing. As they are used in management and gain new qualities through machine learning, they are thoroughly transforming processes of decision-making, forms of control and types of organization. While computers have been in use in management for a long time, a few current developments merit special attention. For example, on crowdworking or microwork platforms such as Amazon Mechanical Turk or Uber, algorithms are employed to manage self-employed coders or other workers, with hardly any involvement of human managers. In digital twins, systems are designed in which big data is gathered for all aspects and processes of organization in order to manage these processes algorithmically, with only little human involvement. These examples point to the way algorithms become agents of management, and to a partial automation of management and labour.

The course will critically explore algorithmic management as a contemporary phenomenon of digital cultures, while situating it within an understanding of platforms, datafication and machine learning, and discussing questions of algorithmic accountability. It introduces a reflective vocabulary and a set of analytical tools to make sense of contemporary phenomena of algorithmic management; of the algorithm as a conceptual lens for making sense of computation; of platforms, data and machine learning as contextual factors enabling and transforming algorithmic management; and of key issues in the accountability of algorithms. Through readings, class discussions, short exploratory research projects, group work and individual reflection, students will learn how to approach, make sense of and critically interrogate phenomena of algorithmic

management. They will also be able to critically reflect more generally on how algorithms are deployed, how they can be made accountable and how we may conceive of alternatives.

Course structure and indications of the learning and teaching design

This is a block-class with a virtual kick-off. Students will be asked to prepare for class through readings. The class will offer a mix of short lectures, case explorations, group discussion, and a group research project and presentation in which students apply the analytical tools provided in class to explore a particular case of algorithmic management.

The virtual kick-off will offer an introduction to the class and its theme. Students will use the time between the kick-off and the block for reading and for an 'algorithmic walk' in which they acquaint themselves with key properties of algorithms.

The first day of the block will involve an investigation of the algorithm as a frame of analysis, and of data, platforms and machine learning as conditions of algorithmic management today and shaping in in terms of data economies and enhanced capacities. This investigation will be completed by explorations of particular case applications of algorithmic management, such as in digital twins, which demonstrate both how algorithmic management operates in practice, and the kinds of concerns that arise, such as control or discrimination.

The second day of the block is first concerned with algorithmic accountability; one of the issues already raised on the previous day will be explored in depth before approaches to algorithmic accountability will be presented and discussed. After introducing how algorithms can be researched in the context of management, the remainder of the day is occupied with group work in which students will work on their collective research projects selecting, exploring and reflecting upon an example of algorithmic management in practice.

On the third day of the block students will present the results of their research projects and the class will collectively and critically discuss and provide feedback on the findings. A closing section will explore draw some conclusions from the overall course concerning how we can engage with algorithms, demand accountability, and perhaps design them differently.

Contextual Studies are considered part of **Contact Learning**; thus, taking part properly implies **regular attendance**. It is the students' own responsibility to ensure that there is **no timetable clash** between the courses they have chosen. A detailed course outline and all relevant documents will be made available on **StudyNet**. Only the current timetable as published on **Courses** does apply.

Course literature

A full list of readings will be provided via StudyNet prior to the beginning of the class. The following is a list of indicative readings that may be referred to in class:

Ajunwa, Ifeoma. 2020. 'The "Black Box" at Work'. *Big Data & Society*, October. https://doi.org/10.1177/2053951720938093.
Beverungen, Armin. 2020. 'Executive Dashboard'. In *Oxford Handbook of Technology, Media and Organization*, edited by Timon Beyes, Robin Holt, and Claus Pias, 225–37. Oxford: Oxford University Press.
Beverungen, Armin. 2021. 'Remote Control: Algorithmic Management of Circulation at Amazon'. In *Explorations in Digital Cultures*, edited by Marcus Burkhardt, Mary Shnayien, and Katja Grashöfer, online first. Lüneburg: meson press. https://explorations.meson.press/.
Ferrari, Fabian, and Mark Graham. 2021. 'Fissures in Algorithmic Power: Platforms, Code, and Contestation'. *Cultural Studies* 0 (0): 1–19. https://doi.org/10.1080/09502386.2021.1895250.
Kellogg, Katherine, Melissa Valentine, and Angele Christin. 2019. 'Algorithms at Work: The New Contested Terrain of Control'. *Academy of Management Annals* 14 (1). https://doi.org/10.5465/annals.2018.0174.
Novelli, Claudio, Mariarosaria Taddeo, and Luciano Floridi. 2024. 'Accountability in Artificial Intelligence: What It Is and How It Works'. *AI & SOCIETY* 39 (4): 1871–82. https://doi.org/10.1007/s00146-023-01635-y.
Stark, David, and Pieter Vanden Broeck. 2024. 'Principles of Algorithmic Management'. *Organization Theory* 5 (2): 26317877241257213. https://doi.org/10.1177/26317877241257213.
Woodcock, Jamie. 2021. 'The Limits of Algorithmic Management: On Platforms, Data, and Workers' Struggle'. *South Atlantic Quarterly* 120 (4): 703–13. https://doi.org/10.1215/00382876-9443266.

Additional course information

Armin Beverungen is Professor for the Sociology of Organization and Economy at the Institute for Sociology and Cultural Organisation at Leuphana University of Lüneburg and affiliated there with the Centre for Digital Cultures. His current research projects explore a) how Amazon's logistical urbanism speculates on urban, automated futures and b) the promises of wealth

associated with smart technologies in cities, in particular digital twins. https://www.leuphana.de/en/institutes/isco/members/armin-beverungen.html

Examination information

Examination sub part/s

1. Examination sub part (1/2)

Examination modalities

Examination type	Written work
Responsible for organisation	decentral
Examination form	Written work
Examination mode	Digital
Time of examination	Term time
Examination execution	Asynchronous
Examination location	Off Campus
Grading type	Individual work individual grade
Weighting	60%
Duration	--

Examination languages

Question language: English
Answer language: English

Remark

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Examination-aid rule

Free aids provision

Basically, students are free to choose aids. Any restrictions are defined by the faculty members in charge of the examination under supplementary aids.

Supplementary aids

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2. Examination sub part (2/2)

Examination modalities

Examination type	Presentation
Responsible for organisation	decentral
Examination form	Oral examination
Examination mode	Analog
Time of examination	Term time
Examination execution	Asynchronous
Examination location	On Campus
Grading type	Group work group grade
Weighting	40%
Duration	--

Examination languages

Question language: English
Answer language: English

Remark
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Examination-aid rule
Free aids provision

Basically, students are free to choose aids. Any restrictions are defined by the faculty members in charge of the examination under supplementary aids.

Supplementary aids
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Examination content

1. For the **group presentation**, students will be asked to research a particular example of algorithmic management, and to present: the key features of how algorithms are deployed in the case; the key social, political or cultural issue(s) that may arise, as well as how these may be responded to in terms of accountability; and to imagine an alternative way of designing algorithms in the case or doing without them entirely. Presentations will be around 15 minutes plus discussion. Groups size will be around 5, depending on class size.
2. For the **individual assignment**, students will be asked to reflect on their group work and explore one of the aspects of their group work and presentation in more depth. Students are also welcome to discuss an alternative topic with the lecturer, which should in principle involve a similar analysis as in the group work but could also focus on one particular aspect or issue. Length: around **15000 characters** including empty spaces, excluding title, table of contents, figures. Deadline: **31st May 2025**.

Examination relevant literature

A full set of literature will be provided via StudyNet prior to the beginning of the class. Students will also be expected to explore further literature as part of their group research project.

Please note

Please note that only this fact sheet and the examination schedule published at the time of bidding are binding and takes precedence over other information, such as information on StudyNet (Canvas), on lecturers' websites and information in lectures etc.
Any references and links to third-party content within the fact sheet are only of a supplementary, informative nature and lie outside the area of responsibility of the University of St.Gallen.

Documents and materials are only relevant for central examinations if they are available by the end of the lecture period (CW21) at the latest. In the case of centrally organised mid-term examinations, the documents and materials up to CW 13 (Monday, 25 March 2025) are relevant for testing.

Binding nature of the fact sheets:

- Course information as well as examination date (organised centrally/decentrally) and form of examination: from bidding start in CW 04 (Thursday, 23 January 2025);
- Examination information (supplementary aids, examination contents, examination literature) for decentralised examinations: in CW 12 (Monday, 17 March 2025);
- Examination information (supplementary aids, examination contents, examination literature) for centrally organised mid-term examinations: in CW 14 (Monday, 31 March 2025);
- Examination information (regulations on aids, examination contents, examination literature) for centrally organised examinations: two weeks before ending with de-registration period in CW 15 (Monday, 07 April 2025).