University of St.Gallen

Course and Examination Fact Sheet: Autumn Semester 2021

7,047: IC: Responsible Innovation Lab

ECTS credits: 4

Overview examination/s

(binding regulations see below)
Decentral - examination paper written at home (in groups - all given the same grades) (50%)
Examination time: term time
Decentral - Presentation (in groups - all given the same grades) (50%)
Examination time: term time

Attached courses

Timetable -- Language -- Lecturer
7,047,1.00 IC: Responsible Innovation Lab -- Englisch -- Busch Thorsten

Course information

Course prerequisites

The course content is entirely self-contained and does not require any prior knowledge.

Learning objectives

Having successfully taken this class, students will be able to:

- critically question implicit assumptions about technology and innovation;
- identify ethical, social, cultural, and political contexts that make innovation a very challenging process to manage today;
- develop a deeper understanding of how real-world companies innovate (or fail to do so);
- develop ethical risk awareness to avoid the pitfalls and downsides of irresponsible innovation;
- identify relevant stakeholders, assess appropriate frameworks for responsible innovation processes, and learn about inclusive design solutions such as value-sensitive and participatory design.

Course content

Every business wants to disrupt the market with brilliant innovations. More and more, however, the pressing question is: innovation at what social cost? As the Cambridge Analytica scandal showed, innovation is neither always automatically socially desirable nor necessarily fair. For instance, many companies now use ethically questionable Big Data-driven recruitment and human resources tools (O'Neil 2016), some companies ask their employees to have microchips implanted into their bodies (Astor 2017), and in China, companies may even monitor their employees' brain waves (Chan 2018). In fact, almost all major technology companies were affected by some form of public outcry or scandal in the past two years, be it Amazon, Facebook, Google, Microsoft, Twitter, or Uber. Their use and management of innovative technologies such as machine learning in facial recognition, drone deployment or self-driving cars has led to public outcry and even death (Frenkel 2018; Shane and Wakabayashi 2018; Wingfield 2018). While tech companies used to be everybody's darling until fairly recently, now there is public backlash against them, leading the New York Times to run a story claiming "Silicon Valley is not your friend" (Cohen 2017).

Against this background, it becomes ever more apparent that technological innovation today comes with a real risk of alienating both consumers and society at large, potentially leading to public skepticism and widespread anxiety. This can massively damage a company's reputation and bottom line or even drive it out of business altogether, like Cambridge Analytica. As a result, innovation management today is not just limited to the question "How to innovate?" anymore. Instead, it increasingly also needs to include questions such as "How to innovate *responsibly*? What to innovate *for*, exactly? And with *whom*?" Therefore, this class will supplement the MBI program by teaching students to focus their attention on innovation-driven issues that do not

merely focus on technology. This is important because technology is never neutral (Busch 2017). Instead, technology shapes, and is always shaped by, a multitude of ethical, social, cultural, and political factors. And today, being aware of these processes is part of a professional management education.

Course structure and indications of the learning and teaching design

This class will likely be held online via Zoom. More information on this issue will be made available via StudyNet as the ongoing Covid situation evolves.

This is a highly interactive three-day block course that will be structured like a game jam, which is to say:

Once bidding is fully completed, students will receive a detailed email with instructions and readings for class. They will need to participate in a Doodle poll in order to 'adopt' a real-life company, such as Facebook or Twitter. In groups, students will be expected to research 'their' company in great detail as part of their coursework in preparation of the actual class during the semester break.

Day 1: Class will start off with an introductory lecture by the teacher, followed by a group activity and feedback session. Afterwards, tools and expectations for days 2 and 3 will be explained. The day will end with a FAQ session.

Day 2: In the pre-class Doodle poll, student groups have 'adopted' a real-world company. On day 2 of class, student groups will spend all day innovating the business model of 'their' company in order to disrupt it from a responsible innovation perspective (which will be explained in the introductory lecture on day 1). Even if the class will be held via Zoom, students groups may meet up in person (legal situation permitting, that is).

Day 3: Student groups will present their work, which includes not only group presentations, but also written documentation of the newly innovated business models, materiality analyses, etc. The course will end with a feedback and Q&A session.

In addition to the aforementioned steps, there will likely be a guest lecture by an experienced practitioner in the field of responsible innovation. Details tbd.

This is a 4-credit course. Accordingly, based on HSG standards, the total workload for students is 120 hours. This includes your individual research prior to and after class, the class itself, as well as all examinations.

- The structure of the contact study is planned as follows: 0 hours of lectures in a weekly rhythm, as the class will be taking place during the semester break; 4 hours of video lectures before the semester break; 4 hours of lectures during the semester break; 16 hours of in-class group exercises; approx. 2 hours of personal coaching at the end of class; potentially 2 hours of guest lectures;
- The structure of the self-study is intended as follows: 4-8 hours of individual preparation time for video lectures prior to class; 40 hours of individual research for your examination (group papers); 50 hours of individual and collaborative writing (group papers)

Course literature

Astor, M. (2017). Microchip Implants for Employees? One Company Says Yes.*The New York Times*, July 25. https://www.nytimes.com/2017/07/25/technology/microchips-wisconsin-company-employees.html

Boyd, D., & Crawford, K. (2012). Critical Questions for Big Data: Provocations for a Cultural, Technological, and Scholarly Phenomenon. *Information, Communication & Society*, 15(5), 662-679.

Busch, T. (2017). "Technology is never neutral" (interview). *Swisscom Business*, December 4. https://www.swisscom.ch/en/business/enterprise/themen/digital-business/ethics-in-digitisation.html

Chan, T. (2018). These Chinese Workers' Brain Waves are Being Monitored. *World Economic Forum*, May 1. https://www.weforum.org/agenda/2018/05/china-is-monitoring-employees-brain-waves-and-emotions-and-the-technology-boosted-one-companys-profits-by-315-million/

Cohen, N. (2017). Silicon Valley is Not Your Friend. *The New York Times*, October 13. https://www.nytimes.com/interactive/2017/10/13/opinion/sunday/Silicon-Valley-Is-Not-Your-Friend.html

Frenkel, S. (2018). Microsoft Employees Protest Work With ICE, as Tech Industry Mobilizes Over Immigration. *The New York Times*, June 19. https://www.nytimes.com/2018/06/19/technology/tech-companies-immigration-border.html

Grinbaum, A., & Groves, C. (2013). What is "responsible" about responsible innovation? Understanding the ethical issues. In Owen, Bessant, & Heintz, eds., *Responsible Innovation. Managing the responsible emergency of science and innovation in society*. Chichester: Wiley, pp. 119-142.

O'Neil, C. (2016). How algorithms rule our working lives. *The Guardian*, September 1. https://www.theguardian.com/science/2016/sep/01/how-algorithms-rule-our-working-lives

Owen, R., Macnaghten, P., & Stilgoe, J. (2012). Responsible research and innovation: From science in society to science for society, with society. *Science and Public Policy* 39, pp. 751-760.

Owen, R., Bessant, J., & Heintz, M. (eds., 2013). *Responsible Innovation. Managing the responsible emergency of science and innovation in society*. Chichester: Wiley.

Owen, R., et al. (2013). A framework for responsible innovation. In Owen, Bessant, & Heintz, eds., *Responsible Innovation. Managing the responsible emergency of science and innovation in society*. Chichester: Wiley, pp. 27-50.

Shane, S., & Wakabayashi, D (2018). 'The Business of War': Google Employees Protest Work for the Pentagon. *The New York Times*, April 4. https://www.nytimes.com/2018/04/04/technology/google-letter-ceo-pentagon-project.html

Stahl, B. C., Eden, G., & Jirotka, M. (2013). Responsible research and innovation in information and communication technology: Identifying and engaging with the ethical implications of ICTs. In Owen, Bessant, & Heintz, eds., *Responsible Innovation. Managing the responsible emergency of science and innovation in society*. Chichester: Wiley, pp. 199-218.

van den Hoven, J. (2013). Value Sensitive Design and Responsible Innovation. In Owen, Bessant, & Heintz, eds., *Responsible Innovation. Managing the responsible emergency of science and innovation in society*. Chichester: Wiley, pp. 75-84.

Wingfield, N. (2018). Amazon Pushes Facial Recognition to Police. Critics See Surveillance Risk. *The New York Times*, May 22. https://www.nytimes.com/2018/05/22/technology/amazon-facial-recognition.html

Additional course information

In case of the President's Board having to implement new directives due to the SARS-CoV-2 pandemic, the course information listed above will be changed as follows:

- *The course will be conducted online via Zoom;*
- *The recordings of the course will be made available for at least 30 days;*
- *The lecturer will inform students as early as possible via StudyNet/Canvas regarding the changed implementation modalities of the course;*
- *There are no changes necessary to the examination information.*

Examination information

Examination sub part/s

1. Examination sub part (1/2)

Examination time and form
Decentral - examination paper written at home (in groups - all given the same grades) (50%)
Examination time: term time

Remark
written version of the group presentation

Examination-aid rule
Term papers

Written work must be written without outside help according to the known citation standards, and a declaration of authorship must be attached, which is available as a template on the StudentWeb.

Documentation (quotations, bibliography, etc.) must be carried out universally and consistently according to the requirements of

the chosen/specified citation standard such as e.g. APA or MLA.

The legal standard is recommended for legal work (cf. by way of example: FORSTMOSER, P., OGOREK R., SCHINDLER B., Juristisches Arbeiten: Eine Anleitung für Studierende (the latest edition in each case), or according to the recommendations of the Law School).

The reference sources of information (paraphrases, quotations, etc.) that has been taken over literally or in the sense of the original text must be integrated into the text in accordance with the requirements of the citation standard used. Informative and bibliographical notes must be included as footnotes (recommendations and standards e.g. in METZGER, C., Lern- und Arbeitsstrategien (latest edition)).

For all written work at the University of St.Gallen, the indication of page numbers is mandatory, regardless of the standard chosen. Where page numbers are missing in sources, the precise designation must be made differently: chapter or section title, section number, article, etc.

Supplementary aids
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Examination languages
Question language: English
Answer language: English

2. Examination sub part (2/2)

Examination time and form
Decentral - Presentation (in groups - all given the same grades) (50%)
Examination time: term time

Remark
presentations & written documentation

Examination-aid rule
Presentations
In presentations, aids for visual presentation can be used. These aids can be specified or restricted by the lecturers.

Supplementary aids
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Examination languages
Question language: English
Answer language: English

Examination content
see course content

Examination relevant literature
see course content

University of St.Gallen

Please note

Please note that only this fact sheet and the examination schedule published at the time of bidding are is 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 (CW51) at the latest. In the case of centrally organised mid-term examinations, the documents and materials up to CW 42 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 34 (Thursday, 26 August 2021);
- Examination information (regulations on aids, examination contents, examination literature) for decentralised examinations: in CW 42 (Monday, 18 October 2021);
- Examination information (regulations on aids, examination contents, examination literature) for centrally organised mid-term examinations: in CW 42 (Monday, 18 October 2021);

Examination information (regulations on aids, examination contents, examination literature) for centrally organised examinations: two weeks before the end of the registration period in CW 45 (Monday, 8 November 2021).