Minor Managing Digital Innovation 2017-2018
Hier vind je de beschrijvingen van de vakken in de minor. Meer inhoudelijke informatie over de minor vind je op minor.vu.nl.
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Business Intelligence and Analytics

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<td>Coördinator</td>
<td>prof. dr. J.F.M. Feldberg</td>
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**Doel vak**

Being able to define, describe and recall the basic concepts, principles and theories underlying business intelligence & analytics solutions (decision support systems). Also, to classify and compare business intelligence & analytics solutions as well as the constituent components of business intelligence & analytics solutions (Academic Skills).

Become proficient at exploring data-driven business models and to apply business intelligence & analytics concepts, principles and theories to business problems (Quantitative Skills).

Learn to explore, analyze and determine how big data can drive business model innovation as well as to analyze business cases, and propose business intelligence & analytics solutions and decide which data to use given a business problem to be solved (Knowledge).

Adeptly evaluating and discussing the organizational and social implications of business intelligence & analytics solutions and to create insights using established business intelligence & analytics tools (Bridging Theory & Practice).

**Inhoud vak**

Data is hot! How organizations deal with the overabundance of data and the ability to transform data into insights have become critical success factors for every organization. Key words in this context are ‘big data’, ‘data science’, and ‘data–driven decision making and innovation’. This course offers the handles that are needed to fully deploy the potential of data, and business intelligence & analytics solutions in order to create competitive advantage. The course primarily has a managerial focus, technology will be used primarily to create hands on experience with relevant BI&A technologies and as such enhance insights in their features and characteristics. There is a lot of business involvement in this course: experts from industry and BI&A consultants will share their insights and experience in the weekly workshops.

**Onderwijsvorm**

Lectures
Tutorials
Workshops

**Toetsvorm**

Assessment Written exam – Individual assessment
Interim Assignment(s) / Tests:
Literatuur
This course is article based.
Readings will be announced in the course manual.

Aanbevolen voorkennis
Basic knowledge on statistics and Microsoft Excel.

BK: 2.1 Business Information Technology
IBA: 2.1 Business Information Systems

Ethics of Algorithms

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Doel vak
After completing this course, students will
Understand the role of smart algorithms for big data, in digital interactions, and in physical manifestations such as robots and the internet-of-things.
Know broad classes of algorithms and how they are used for prediction, social sorting, curating, recommending, gatekeeping, experimentation, and profiling
Be familiar with some of the main contemporary thinkers and issues in the ethics of algorithms
Know and understand the ethical implications of (classes of) algorithms on privacy, surveillance, discrimination, access to information, security, free will, human rights, social norms, etc.
Be able to identify stakeholders and ethical implications in healthcare, design, crime, education, science, job markets, business, journalism, warfare, etc.

Inhoud vak
Digital innovation involves both the accumulation of large amounts of data (so-called Big Data) through various new sensors (such as smartphones and social networks) as well as artificially intelligent algorithms (software, but also robots) that can analyze and interpret that data (i.e. analytics) and act upon it. The main objective of this course is to develop “algorithmic literacy” which is an understanding of how (intelligent and adaptive) algorithms influence the way we communicate, work, obtain information, date, travel, and so on, but also how we can tackle grand challenges such as crime, healthcare and education in new, innovative ways. Algorithms are not neutral or objective, but come with many biases, choices, and political influences.
built-in, which heavily determine how people are “seen” by these algorithms, and how they are treated.

The course covers specifically the various implications algorithms have on fundamental values in society dealing with privacy, surveillance, free will, and so on. For each implication typically several competing stakeholders are involved with opposing viewpoints, value systems or business models. This requires a delicate balancing of interests. Ethics deals with finding this balance, with identifying issues and stakeholders, with employing social and legal solution frameworks, and possibly with judging whether some developments are good or bad.

The course features lectures on algorithms, ethical issues and domains. In addition we will read and discuss relevant literature, for which active participation is required. Each student needs to write an individual essay about a (self-chosen) ethical problem in a particular domain. Furthermore, each student participates in a multidisciplinary design team consisting of students to find a practical solution for an ethical issue caused by the use of intelligent algorithms.

**Onderwijsvorm**
Lectures and (interactive) literature discussions.

**Toetsvorm**
Individual essay, team design project, active participation in group sessions, and a digital exam.

**Literatuur**
Various articles that will be made available through Canvas.

**Introduction to Digital Innovation**

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**Doel vak**
After successfully completing this course, students will:
• Understand the fundamental basics of hardware, software and networking that form the basis for digital innovation
• Be able to link past, current, and emerging technologies to digital innovation
• Be able to explain recent technological developments related to big data, social media, mobile, cloud computing and the Internet of Things
• Master the technological fundamentals of designing and developing innovative digital tools.

**Inhoud vak**
Digital innovation relates to “a product, process, or business model that is perceived as new, requires some significant changes on the part
of adopters, and is embodied in or enabled by IT” (Fichman et al., 2014). In this course, we focus on the technological developments that have given rise to digital innovation. Topics addressed include the fundamental developments in hardware, software and networking that form the basis for digital innovation. Issues like the increasing processing and storage capacity of digital devices, the miniaturization of technology, smarter software and the increasingly interconnected nature of networks will be discussed to provide a basis for understanding where digital innovation comes from — and where it might go to. Secondly, the course addresses recent technological developments in information technology like big data, social media, mobile devices, cloud computing and the Internet of Things. We analyze what possibilities for innovation arose from these developments, and how digital innovations have been developed and implemented in practice. Many practical examples of digital innovations will be discussed in the lectures. Next to the lectures in which these subjects are discussed, students will also put their knowledge about digital innovation into practice in developing an innovative digital tool that connects to the developments and issues discussed in the lectures.

Onderwijsvorm
Lectures
Computer tutorials

Toetsvorm
Individual written exam
Group project assignment

Literatuur
Various papers that will be made available through Canvas.

New Ways of Working

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Doel vak
After completing the course, students will:  
- Understand how the properties of digital technologies require, as well as enable new approaches to working and organizing  
- Have knowledge of relevant theories of how working, coordinating, and managing in these new environments is different from traditional workplaces and critically reflect upon the underlying assumptions  
- Understand the interplay between technology and work practices and be able to analyze and demonstrate that interplay  
- Be able to apply academic insights to analyze and develop solutions for a real life case
Inhoud vak
In this course we focus on the demands digital technologies put on organizations and society, and on how new ways of working and organizing help adapt to these challenges. Topics addressed in this course include, amongst others, how new ways of working (for example workers as digital nomads, expert systems as alternative for legal workers, or production done by 3d-printers) and new distributed and networked organizational forms (for example peer to peer communities or crowdsourcing) have advantages and disadvantages over traditional organizational practices and structures. In addition to learning about these topics in interactive lectures, students will also be required to fulfill a number of assignments related to “real-life” challenges of new ways of working and organizing. The assignments are related to a particular organizational problem and will require students to apply theories discussed during the lecture to a particular case. These “hands-on” assignments are aimed to get a better understanding of the connection between theory and practice. With the assignments, students become academically prepared to understand and support the design, introduction and use of digital innovation and its implications for new ways of organizing and working in new distributed environments.

Onderwijsvorm
The course will consist of a combination of interactive lectures, guest lectures, seminars, and assignments. The lectures will also include a critical discussion of selected readings, stimulated by obligatory individual reflections on the literature. The seminars will be used to have students present, discuss, and further develop the assignments.

Toetsvorm
Individual assignments and Group project assignment

Literatuur
A selection of readings (mostly academic papers, but also book chapters and thoughtful business magazine articles) will be made available before the start of the course.

Vereiste voorkennis
None

Strategic Management of Technology and Innovation
Doel vak
Academic skills: In this course students learn to critically evaluate innovation management concepts from academic literature and popular management press.

Knowledge: In this course, students gain theoretical understanding concerning:
- innovation types and the external innovation environment including innovation trajectories, standards, platforms, and ecosystems
- the development of innovation strategies and their operationalization in project selection, collaboration, and protection
- the product development process and organizational conditions for innovation

Bridging theory and practice: The course offers insight in the strategic importance of technological innovation for firms and society, recent developments in technology and innovation, and helps to develop skills to analyze real life cases.

Inhoud vak
This course focuses on the strategic management of technology and innovation. Innovation refers to the development and implementation of new products, services, processes and business models and many of those innovations are enabled by technological developments. Innovation is crucial for business organizations to stay competitive in ever changing markets. In this course, students learn to understand and apply basic theories behind the processes of technology-based innovation within organizations and their environments, the development of innovation strategies, and the organizational implementation of innovation strategies. Theoretical understanding is applied in a simulation game and real life cases focusing on managerial dilemmas in the management of innovation.

Onderwijsvorm
Lectures
Tutorials

Toetsvorm
Individual assignment
Group assignments
Written exam

Literatuur
- Selection of academic articles (listed in course manual)
- Lectures, tutorials, and lecture slides