PhD course

Design science perspectives on innovation & entrepreneurship research

Program outline

22-26 June 2020 (Eindhoven)

This PhD course is offered by the ITEM group of the School of Industrial Engineering at Eindhoven University of Technology, in cooperation with EuroTech Universities, and is endorsed by the TU/e Graduate Program Industrial Engineering.

Aim and Learning Goals

This intensive 1-week course is specifically designed for students in a PhD or MPhil program. It is assumed that students have extensive knowledge of basic theories of entrepreneurship, business design and innovation management. The PhD course provides participants with in-depth knowledge of Design Science (DS) approaches in the field of innovation and entrepreneurship. The main objective is that doctoral students become familiar with and develop an in-depth understanding of the key frameworks, concepts, models, and paradigms that collectively form the DS foundation for research in this field. In addition, participants learn how to review DS-based articles and how to publish work informed by DS in top journals in the field of innovation and entrepreneurship. This PhD course will also offer opportunities for a limited number of participants to present and get feedback on papers or dissertation proposals.

Program

The program outline of the course is given below. Registered participants will receive a detailed course manual (with readings and assignments) six weeks before the start of the course.

Monday 22 June

Morning: **Entrepreneurship, innovation and design** *(Georges Romme)*
Studies of entrepreneurship, innovation and design are increasingly complementary and feeding on each other. This also reflects Herbert Simon's idea of business research as a design science (DS) that promotes the interaction between science- and design-oriented researches. This introductory session serves to discuss several DS notions and frameworks.

Afternoon: **Design principles in design science** *(Isabelle Reymen)*
This session explores several DS outputs and specifically the pivotal role of design principles in DS: how can design principles be shaped, based on systematic literature reviews and/or empirical findings? How do design principles inform the development and prototyping of solutions, etcetera? Furthermore, recent design-oriented work on decision-making logics in new business development is discussed.

Tuesday 23 June

Morning: **Publishing design science research** *(Isabelle Reymen)*
This session explores various challenges in publishing DS research: structure of the paper, where to publish, and how to deal with review comments. Furthermore, you will get feedback on how to define one or more DS research projects/papers in your own doctoral thesis.

Afternoon: **Designing boundary objects** *(Madis Talmar)*
This session focuses on the design and development of boundary objects between research and practice. Several example projects in which instrumental models and tools operate as boundary objects are discussed, to explore why this kind of work is valuable, how to engage in it, and so forth. The underlying 'boundary object' theories and implementation strategies are also elaborated.

Wednesday 24 June

Morning: **Front end of new product development** *(Fred Langerak & Katrin Eling)*
The front end of new product development (NPD) involves activities such as opportunity identification, ideation, concept development, and concept evaluation and testing. This session serves to discuss recent work on NPD at the interface of science and design, focusing on the question why some new products are more successful than others and how the front end contributes to this success.

Afternoon: **Doctoral students present & receive feedback from panel**
This session provides the opportunity to a limited number of participants to receive feedback on either a draft version of their PhD research proposal (for 1st year PhD students) or a paper-in-progress (for 2nd to 4th year PhD students). The panel includes *Fred Langerak, Katrin Eling, Bob Walrave* and *Georges Romme*.

Thursday 25 June

Morning: **Design experiments in new product development** *(Philip Cash)*
The theoretical and methodological rigor of NPD work is often rather limited. This session explores how design driven NPD research can become more theory-driven and experimental in nature. Various examples of recent work drawing on so-called 'design experiments' are discussed.

Afternoon: **Doctoral students present & receive feedback from panel**
This session provides the opportunity to a limited number of participants to receive feedback on either a draft version of the PhD research proposal (for 1st year PhD students) or a paper-in-progress (for 2nd to 4th year PhD students). The panel includes *Philip Cash, Madis Talmar, Myriam Cloodt* and *Georges Romme*.

Friday 26 June

Morning & early afternoon: **Open Innovation** *(Christopher Tucci)*
The state of the art of open innovation research is discussed, with special attention to the various theoretical and empirical approaches in OI studies and how OI research findings can inform a firm's choice among different OI governance modes. We will also discuss OI applications to Lean Startup and how design science might be used in OI context. What kinds of tools and other artifacts could be developed to advance OI research?

Instructors and Panel Members

- *Georges Romme* is professor of Entrepreneurship & Innovation at the School of Industrial Engineering of Eindhoven University of Technology.
- *Isabelle Reymen* is professor in Design of Innovation Ecosystems at the School of Industrial Engineering of Eindhoven University of Technology.
- *Madis Talmar* is assistant professor of Innovation & Entrepreneurship at the School of Industrial Engineering of Eindhoven University of Technology.
- *Fred Langerak* is professor of Management of Product Development at the School of Industrial Engineering of Eindhoven University of Technology.
- *Katrin Eling* is assistant professor of New Product Development at the School of Industrial Engineering of Eindhoven University of Technology.
- *Philip Cash* is associate professor of Behavioral Design in the Management department of Technical University of Denmark (DTU).
- *Christopher Tucci* is professor of Management of Technology and Chair in Corporate Strategy & Innovation at École Polytechnique Féderale de Lausanne (EPFL).
- *Myriam Cloodt* is associate professor of Open Innovation and Entrepreneurship at the School of Industrial Engineering of Eindhoven University of Technology.
- *Bob Walrave* is associate professor of Modelling Innovation Systems at the School of Industrial Engineering of Eindhoven University of Technology.

Administrative and Application Details

The participation fee is €1200 for non-EuroTech participants. This fee covers participation in all sessions, course materials, daily lunches, and one dinner. Participants are requested to make their own hotel arrangements. From students of EuroTech universities, no participation fee is

required: their accommodation and travel costs can be reimbursed from the EuroTech budget at their own university.

Participants successfully completing the course will obtain a certificate. The course has a study load of 6 ECTS. The maximum number of participants is 20.

Interested students should apply ***before April 15, 2020***. Doctoral students of EuroTech universities are given priority access, but only if the application is received before the deadline with all the required documents (see below). Your application by email to item.ieis@tue.nl should contain the following documents (as attachments to your email message):

- Motivation letter
- Curriculum vitae
- Letter of recommendation by the (one of the) supervisor(s) of the applicant
- *Optional:* your PhD research proposal or a working paper you want to present and get feedback on.

Notably, the last point is not a formal requirement in applying for this PhD course. If you're a first-year PhD student seeking feedback on your (DS-based) research proposal, you can add a draft of this proposal to the application. If you're a more senior PhD student seeking feedback on work-in-progress, you can add either the full manuscript or its abstract. The program includes two sessions offering the opportunity for a limited number of participants to present and get feedback on their dissertation proposals or manuscripts.

Please send your application by e-mail, with your personal details (name, address, affiliation) and the required attachments to item.ieis@tue.nl

Cancellations

The ITEM group, as the organizer of this course, retains the right to cancel the course up to 6 weeks in advance. All registered (non-EuroTech) participants will then get their registration fee reimbursed. Registered PhD or MPhil students can cancel their participation (with full reimbursement of the fee) until May 1, 2020. No reimbursement on cancelled registrations will be possible after that date.

Organizer

The ITEM group of the TU/e School of Industrial Engineering is the prime organizer of this doctoral course. Coordinator: Frederieke Baas (item.ieis@tue.nl), +31-40-2472170