**Planning**

USE learning line on Globalization

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# Introduction

This is a revised and tightened version of a proposal to develop a USE learning line on globalization. An earlier version (October 19, 2016) was discussed on October 31, 2016. This version at hand includes comments that emerged from the October discussion. Its main focus, however, will not be on the content of the learning line, as its main contours have already been described. The aim of this document is to provide an outline of the planning to implement the proposed USE learning line.

The document is structured as follows:

The document will portray the core characteristics of the learning line (section 1). This provides the context for the subsequent description of the learning line’s milestone planning (section 2). The annex will provide a table-overview of the alignment with the overall learning objectives defined for all USE courses.

# Core characteristics of the learning line

The learning line is characterized by three main features: globalization, integration and innovation. Each dimension will be described below. It thereby sets the context for the ensuing planning of the milestones.

1. Globalization

**In the learning line students learn about globalization and how to engage with, design and interact in and for a global context.**

Students will experience and learn about the importance to consider diverse social and cultural contexts, user backgrounds and expectations and ethical implications when designing technology interventions.

1. Integration

**The learning line successfully integrates technical with contextual USE (User Society Enterprise) questions.**

There will be a shared responsibility by technical and social science staff in the management of the course sequence. Content-wise, USE and technical aspects are part of each course within the sequence. (See annex for alignment with USE learning objectives.)

1. Innovation

**The learning line integrates innovative learning approaches.**

Especially context- and place-based learning approaches will practically link and integrate university education with the global context**.** Strengthening the link between context- and university education aligns with TU/e’s aim to educate so-called ‘T-shaped’ engineers: the learning line will contribute to students’ ability to communicate and collaborate not only across but also beyond their disciplinary boundaries.

These three features are interrelated and cross-fertilize each other.

For example, the learning line will work closely with **external partners** from industry, the non-profit and the public sector to let students learn about and experience the **global practice context**. This **innovative learning approach** helps to link the global practice context with university education. For instance, students and staff will visit external partners and learn about their questions, challenges and issues that practitioners face in their day-to-day work. To enable this, a **network** of external partners is being built which will feed their expertise, questions and experiences into the content development of the learning line.

Pivotal for cooperation with external partners will be **global case studies**. To ensure their practice-relevance, external partners will play a central role in the provision, design and co-supervision of cases on which students will have to work throughout the learning line. This is made possible through the refined set-up of the learning line to enable **case-based** **sequential design**. From early on students will work on a case-assignment that will be (re-)designed, based on input received and the emphasis set throughout the three quartile- course-sequence. For example, throughout the first course the emphasis lies on USE aspects in the design of their specific case; in the second course, technical questions will be foregrounded. In the third and last course students will integrate all findings into the final design of their application/idea.

Staff from **technical and social science faculties** will share their responsibilities in the management of the learning line, ensuring that both technical and USE aspects are part of every course sequence. Content-wise, the learning line’s orientation on **globalization** offers an ideal arena to show the intricate relations between **technical and USE aspects** when designing technologies. It is especially in the global context that the importance to understand and consider their inseparability becomes clear.

# Planning

The ambitious characteristics of the learning line ask for a deliberate and well-calibrated approach to implementation. Consequently, this requires careful planning considering the formation of the internal and external cooperation, the resulting specific design of the learning line and the overall timeframe. After briefly introducing the core team members of the learning line, this section will sketch the design process and indicate its related time frame through definition of milestones.

##### Team members

Johanna Höffken, IE&IS will take the lead in the overall coordination and development of the learning line. The learning line team consists of staff of **three faculties**, two technical and one social science faculty:

Built Environment, Prof. Masi Mohammadi,

Electrical Engineering Dr. Madeleine Gibescu,

Industrial Engineering & Innovation Sciences, Dr. Annelies Bobbelyn, from the School of IE, and Dr. Johanna Höffken, from the School of IS.

Interested staff members from Mechanical Engineering, Biomedical Engineering and Mathematics and Computer Sciences are being identified. The current learning line team consists of members of three faculties but can be enlarged to include a maximum of 4-5 interested faculties.

##### Design process

The design-process of the learning line will be informed and fed by input from two domains that need to be considered simultaneously: The design-process is influenced on one hand by input received from within the TU/e and on the other by input received from the external context/partners.

Internally, expertise and interests of the learning line core members will be concretized and applied onto the learning line design. Input from students from different faculties will be sought to inform the design of the learning line.

Externally, partners are being identified and their commitment in and for the learning line will be defined. Both influences the final design of the learning line.

##### Time frame & Milestones

A two-year time frame enables a realistic planning of the efforts and activities needed to successfully realize this learning line. During this time frame efforts alternate between internally and externally focused activities in order to integrate both dimensions and inputs into one coherent design. This will result in the implementation of the learning line in Q1, Q2 and Q3 of the academic year 2018/2019.

The table below details the milestones for the design of the learning line.

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| **Time-stage** | **Milestones 2017** |
| Early | * Identification of final core members from TU/e * Sketching structure, task definition and time lines |
| Middle | * Definition of commitment of teaching engagement of team members * Interests of students in learning line content and topics are mapped * Further defining learning line design |
| End | * First design of learning line, considering management, possible external partners, structure, content, and methods |
| **Milestones 2018** | |
| Early | * Identification of final external partners * Definition of commitment of external partners’ engagement |
| Middle | * Final design of the learning line considering all design dimensions (e.g. internal and external partners, content, structure, methods) |
| End | * Implementation of learning line in Q1, Q2 and Q3. |
| Through-  out | * Iterative process of learning line design * Building of external network   *(Philips, Essent, TomTom,*  *diverse NGOs have already*  *indicated interest)* |

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| **USE learning objectives** | **Learning line on globalization** |
| 1. Have a clear **notion** of user, society and enterprise, in relation to technology. | YES  -USE aspects integrated in every course sequence |
| 1. Have knowledge of some of the **concepts**, tools, and methods in the humanities, social sciences or management sciences, needed to *understand* (explain, model) and *evaluate* (instrumentally, ethically) the multiple interactions between technology, user, society and enterprise. | YES  -USE basic concepts will be built upon, e.g. technological determinism, co-creation, technology involves politics  -USE concepts important in and for globalization will be introduced, e.g. context sensitivity, reflecting on assumptions etc. |
| 1. Are able to **apply** that knowledge in the design, development and evaluation of technologies. | YES  -throughout the sequence students will work on cases in which technical and USE aspects form an integral part |
| 1. Are able to take a well-argued **stance** on user, society and enterprise aspects of technologies. | YES  -students will be trained and tested on this during each course sequence |
| 1. Are able to **reflect** on the development and responsibilities of the engineering profession. | YES  -through context- and place-based learning students will be exposed to their profession in practice context |
| 1. Are able to work in **multidisciplinary** teams and to reflect on the contribution of team members and of the various disciplines involved. | YES  -this will be trained throughout the course when students work in multidisciplinary teams on their case-based sequential design |
| 1. Are able to **communicate** the results of their work to societal stakeholders (broadly conceived). | YES  -students will work on assignments proposed by external partners; will receive input and supervision by societal stakeholders and will learn to communicate beyond their disciplinary boundaries |
| 1. Are **motivated** to take USE aspects into account when developing technologies. | YES  -context- and place-based learning will show the need and logics to consider USE in practice |

# Annex: Alignment with the USE learning objectives