WHAT IS A HTHT MINOR?
A HTHT-minor fits within the UT profile: High Tech, Human Touch. The minor is offered in English and accessible for both national and international students. The goal of the HTHT-minor is to illuminate specific societal themes for which the UT develops High Tech Human Touch solutions. These solutions are created by conducting high-quality research. Both the form and the content of the minors are High Tech Human Touch (multidisciplinary) and are profiling for the student.

The UT offers most HTHT-minors in a coherent package of 2 (30 EC). There are also HTHT minors of 15 EC that do not belong to a package. You can choose one of these minors and combine this with one minor of a package. If possible, you can even choose 2 minors from different packages.

MINOR INFORMATION
Theme
Production and consumption create huge flows of materials and energy that are converted into products, which are distributed, used and disposed of. This creates chains of processes and activities. The management concerns the downstream and upstream coordination of material and information flows. This can be fueled by different ambitions. This minor takes the triple bottom line, people, planet profit (3P), as perspective. The challenge for the future is to decouple human welfare and well-being from over-use and pollution of resources. Reducing costs only, a core ambition of supply chain analysis, might not be a sustainable strategy. It neglects the option of adding value to the customer and society. Optimization of chains and their performances requires technical and social innovations. Sustainability and the 3P approach draw the line between social responsible and social irresponsible processes, activities and outcomes. Stepping stones towards doing things smarter build
upon social science as technical science alike. Business administration, public administration, marketing, communication, psychology, finance, engineering, logistics, physics are among the relevant disciplines, in order to move forward.

**What are you going to learn in the courses?**

The module Analysis (15 EC) takes mapping of the interactions between materials, technology, economy and society as central theme and evaluates this in the 3P perspective. Societal, customer and governments preferences are mapped to elaborate the direction of needed innovations. The coordination and management of chains are then assessed to focus upon innovation actions.

The module Design (15EC) takes design of products and processes as central theme and elaborates options for improvement in an interactive design process. This is about understanding the user of the design, generating ideas for improvements, refining solutions by iteration, presenting visualizations and/or models and an outlook on adaptation. All aiming at innovative improvement.

The structure of teaching is similar in both modules. The first teaching block concerns a number of sessions in which literature is reviewed. Before class you read the article and hand in your short review by answering three questions. The reviews are assessed and discussed in class. During the second block you work on individual knowledge and skills by writing a paper. In class you present your work and exchange. During the third building block you work in a multidisciplinary team on an assignment related to a real life case. During the module supporting lectures will be given.

These courses give you the opportunity to deepen and apply your own disciplinary knowledge and to get acquainted with knowledge and methods from other relevant perspectives and disciplines. You will learn the concepts, approaches and methodology on a generic level that enables you to apply it on other chains successfully.

**The real life case**

A real life case is used in both modules. Societal stakeholders that have an interest in assessment and improvement in 3P perspective are involved in the case, often as commissioners.

In 2016 we focused on regional food supply chains. Both modules focused on urban farming, within the regional food chains. The regional food stakeholders provided the societal perspective by aiming to raise the consumption of regional produced food up to 15%.

In the analysis module a case study has been conducted to explore the possibilities of urban farming in an area in the municipality of Hengelo. Different elements and aspects of local food production were analyzed in individual papers. The group work focused on the analysis of alternatives for exploiting the area for urban farming, from an economical and environmental sustainability perspective, and within the restrictions of the location. In the design module the students designed an urban farming system. The design focused on transforming two city locations, an existing industrial complex in the inner city of Almelo and an area in the outskirts of Almelo, into food production initiatives. The elements of the system were designed in individual papers and the group report focused integrating those components into a system, that contributes to the development of Almelo.