

HTHT SCIENCE 2 SOCIETY

MINOR 1
FROM IDEA TO
PROTOTYPE

Contact Person: Kostas Nizamis
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MINOR 2
FROM PROTOTYPE
TO SOCIETY

Contact Person: Maximilian Goethner
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MINOR(S)

- High-Tech Human-Touch minor: Science 2 Society

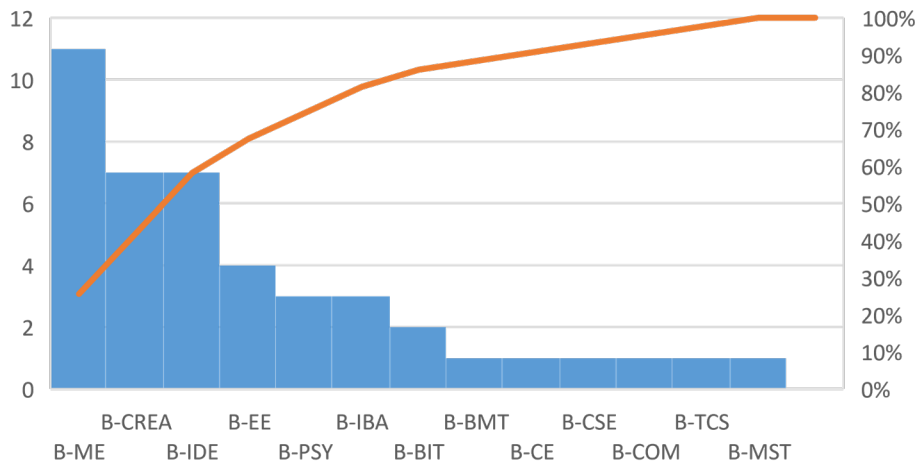


- Collaboration of faculties ET and BMS

GOAL

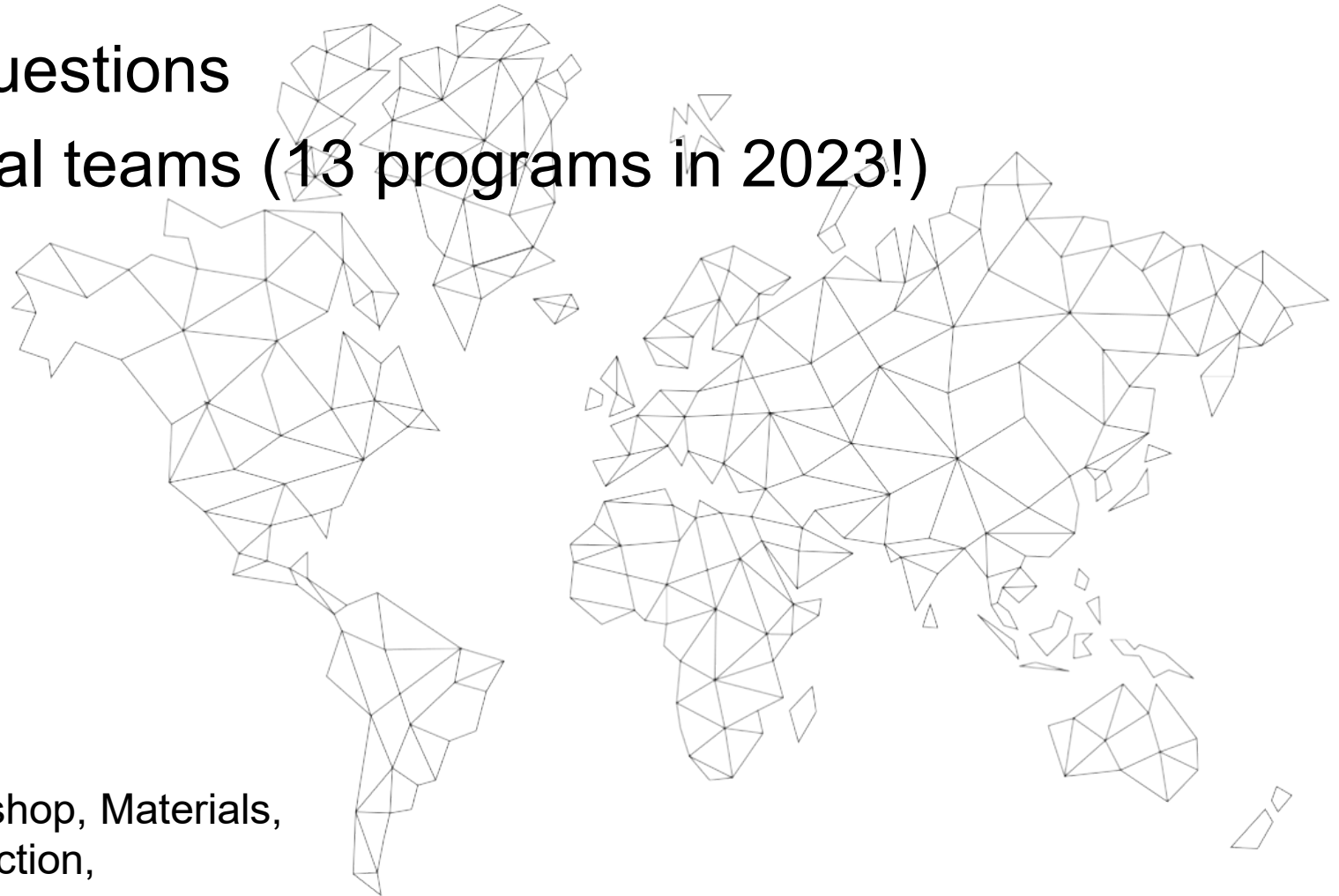
- Find answers to complex questions
- Multidisciplinary international teams (13 programs in 2023!)
- From Idea to Society

From Idea to Prototype 2023-2024



Research, Development,
Design, ..

Workshop, Materials,
Interaction,



APPROACH

- Work with your group on a real problem (Challenge-Based Learning)
 - Provided by companies or research departments
 - Relevant for society
 - Open-ended problems
- Determine your own challenge
 - How will you approach the problem
 - How to achieve your proposed approach
 - Be curious
 - Learn together with the challenge provider

CHALLENGE BASED LEARNING

VOICE

CBL gives voice to all the **Learners** community members, administrators, teachers, and students. CBL helps the Learners to explore meaningful Ideas, build contextual learning informed by multiple perspectives. The result is confident learners, and better solutions.

CO-CREATION

All the **stakeholders** take an active role in participating in the challenge and the learning experience. The framework supports co-creation

CBL in a nutshell: <https://vimeo.com/226547662>

ENGAGE • INVESTIGATE • ACT

Challenge Based Learning provides the perfect framework to develop and support personalized learning (PL). The four key ideas of PL are infused into the CBL experience.



SOCIAL CONSTRUCTION

Creating social and emotional connections between the **Learners** is a foundational idea of CBL. The Learners move in and out of collaborative groups to investigate a Challenge, develop solutions and put them into action.

SELF-DISCOVERY

CBL allows full participation, reflection, and self-discovery. As the **Learners** work together to solve Challenges, they are learning about themselves and developing a personal learning framework that will equip them to face future Challenges inside and outside of the classroom.

For more information check the website: <https://www.challengebasedlearning.org/>
And the CANVAS site of the minor

PROJECT

- Minor is one big project
 - All courses are integrated
- Project time is not in the schedule
- DesignLab is available to you
- Self-supporting

LEARNING OBJECTIVES

After the module, the students are able to:

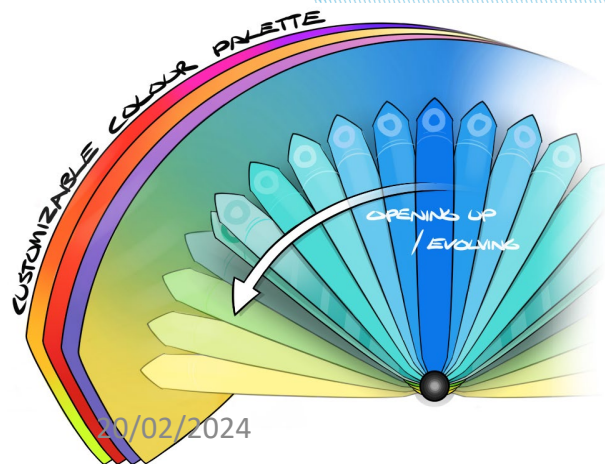
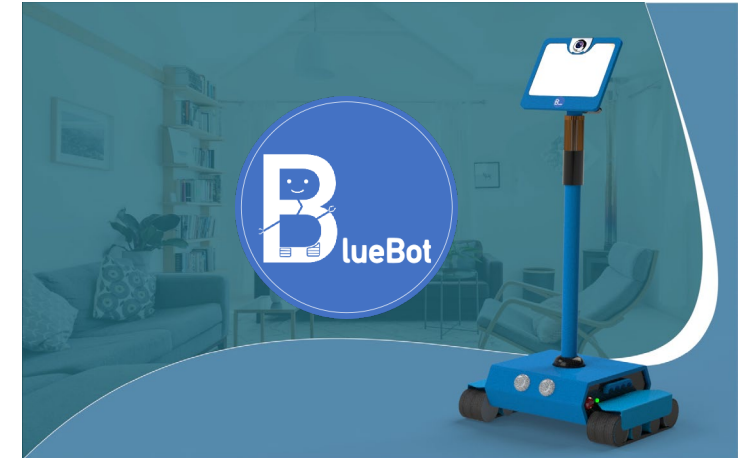
1. Collaborate & communicate with multi-disciplinary team members and stakeholders in order to address a given design challenge.
2. Address a given design challenge by:
 - a. Analyzing and breaking it down to several specific research questions.
 - b. Applying design-based research and other appropriate research methods to address a given design challenge.
 - c. Composing requirements that integrate the needs of different stakeholders and different domains.
 - d. Designing several concepts and compare them based on the composed requirements.
 - e. Using resource management to construct a prototype that considers the trade-off between various requirements in multiple domains (time, costs, personnel, facilities, marketing, etc.)
3. Justify and demonstrate the designed solution and elaborate on the design rationale.
4. Evaluate and critically reflect on:
 - a. The impact of the chosen prototype solution on its target group and society.
 - b. Their own contribution to the team, based on their disciplinary knowledge and academic skills

EXAMPLE CASES PREVIOUS YEARS



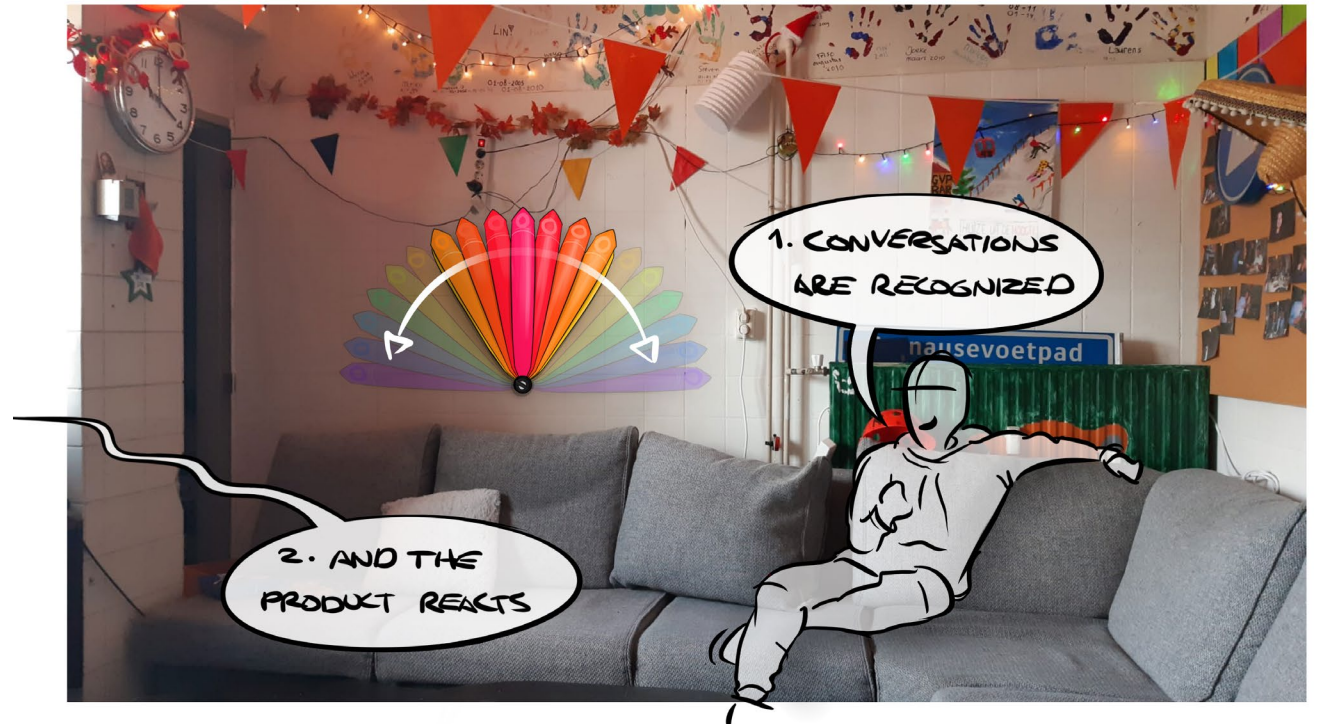
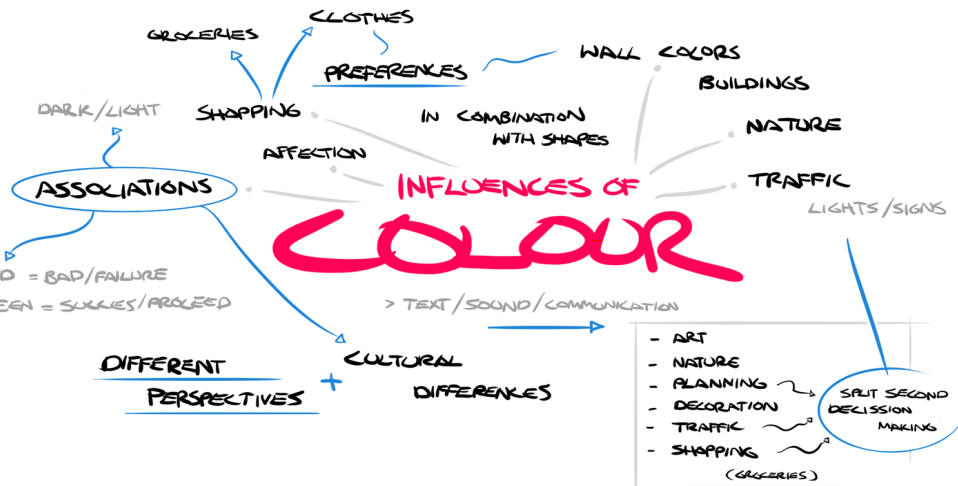
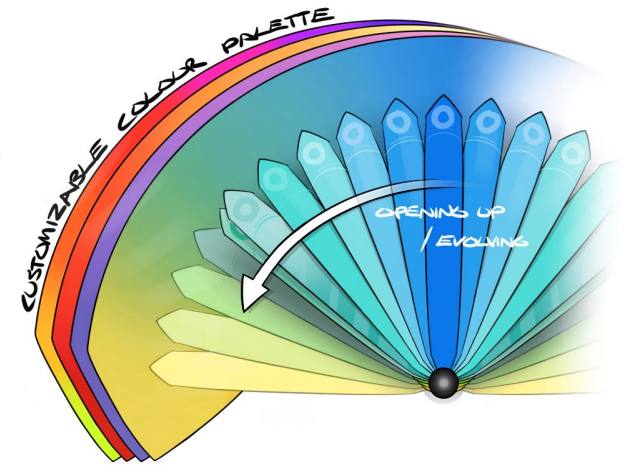
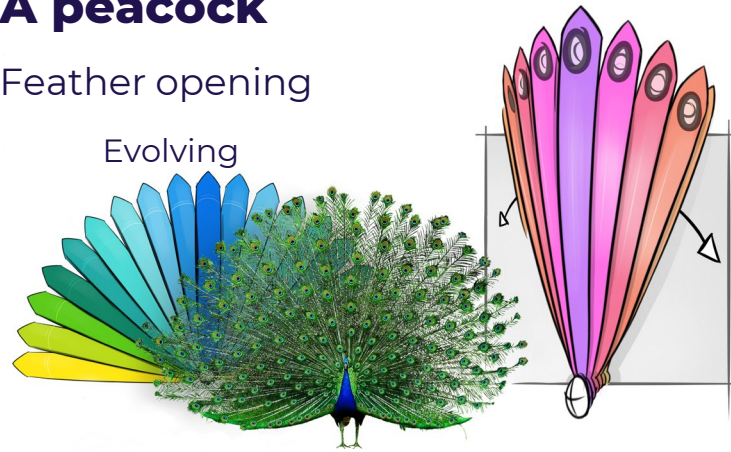
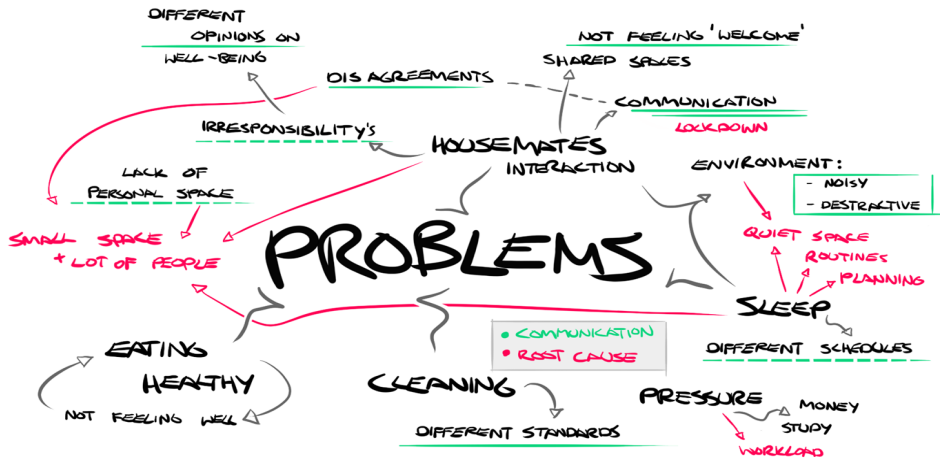
Proofme

YOUR DIGITAL ID

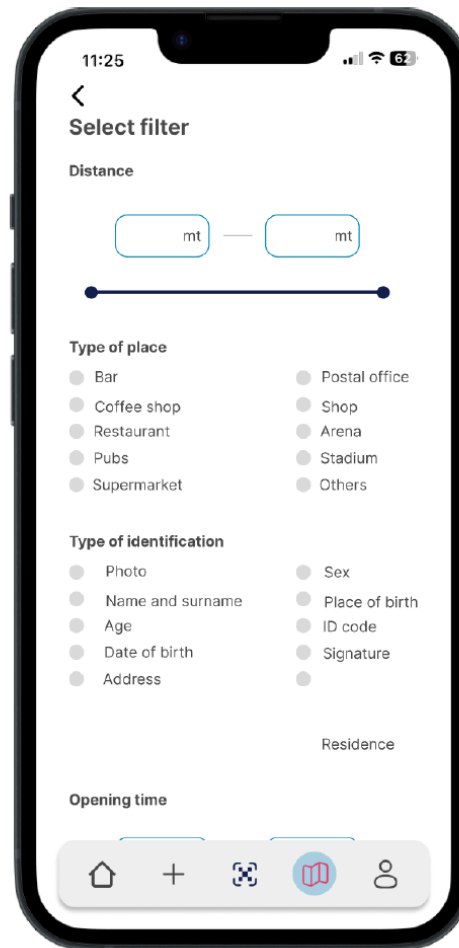
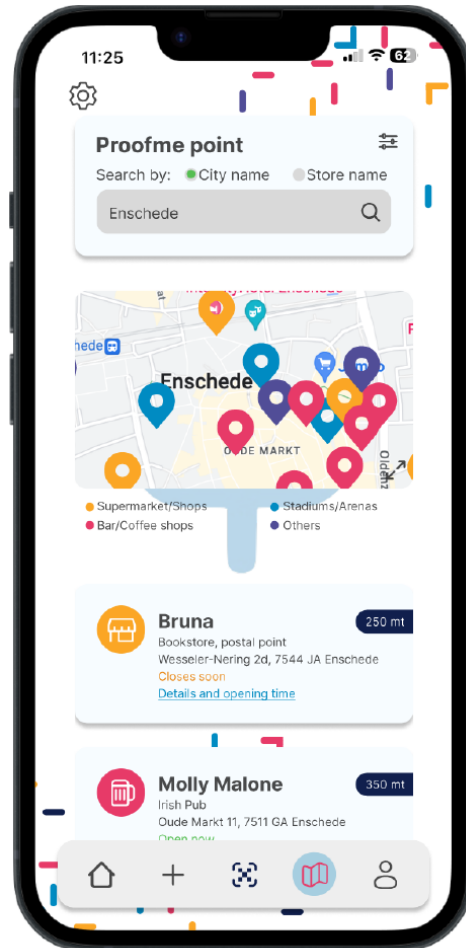


COLOR IN ACTION

- **A peacock**
- Feather opening



DIGITAL IDENTIFICATION



Proofme
YOUR DIGITAL ID

STRESS AT THE WORKPLACE



IMPROVING THE AWARENESS OF STRESS

Raising awareness of stress in a work environment. Cost of stress: 2 billion euros in 2016 for employers, 7 million days required away from work due to work-related stress, €7800 per absent employee. Solution: VIVIFY, a user-friendly system to raise awareness of stress.



PROGRAM

VIVIFY will enable users to monitor their heart rate. The user can tap on the graph to add recollection notes to their peaks. This way users can be more aware of how much stress they go through.



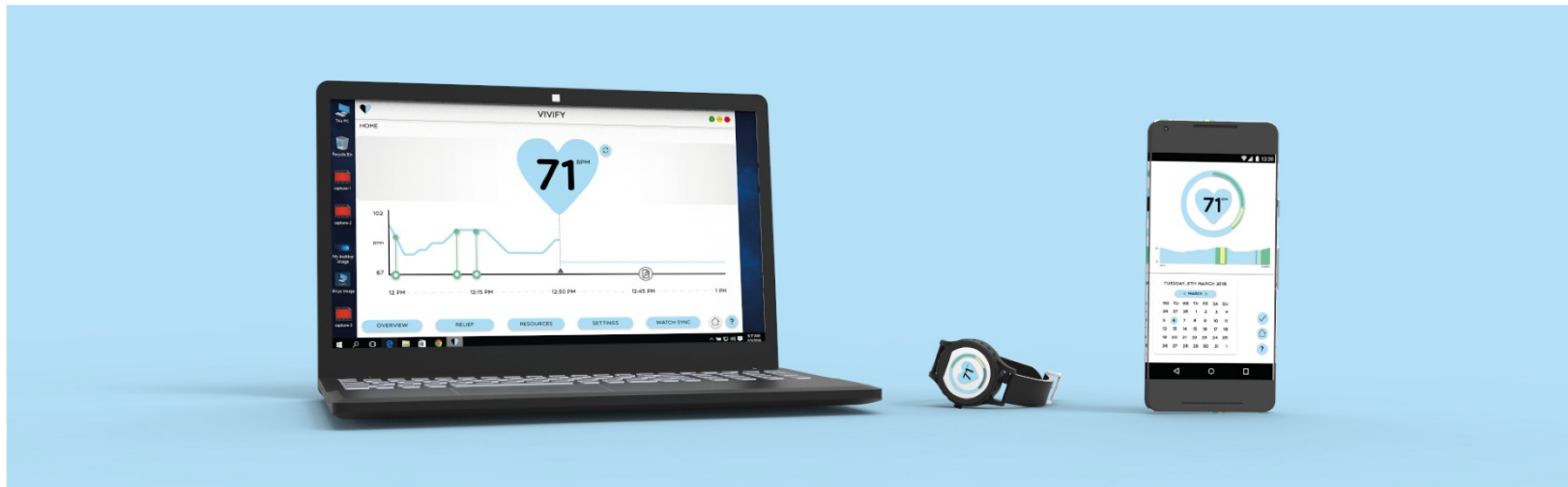
SMARTWATCH

Working alongside smartwatch sensors, the watch will be used to measure and record the user's heart rate, which can be signs of work-related stress.



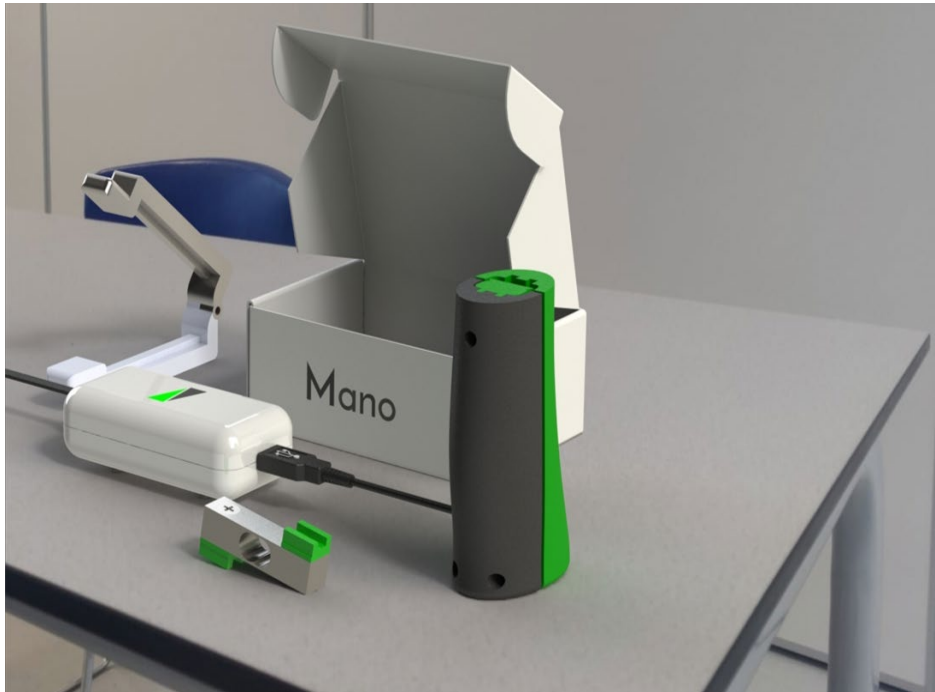
APPLICATION

Supporting smartphone application works alongside system and watch to help the user continue the awareness system outside of the work environment.



e-Health group

MANO: RELIABLE HAND FORCE MEASUREMENT



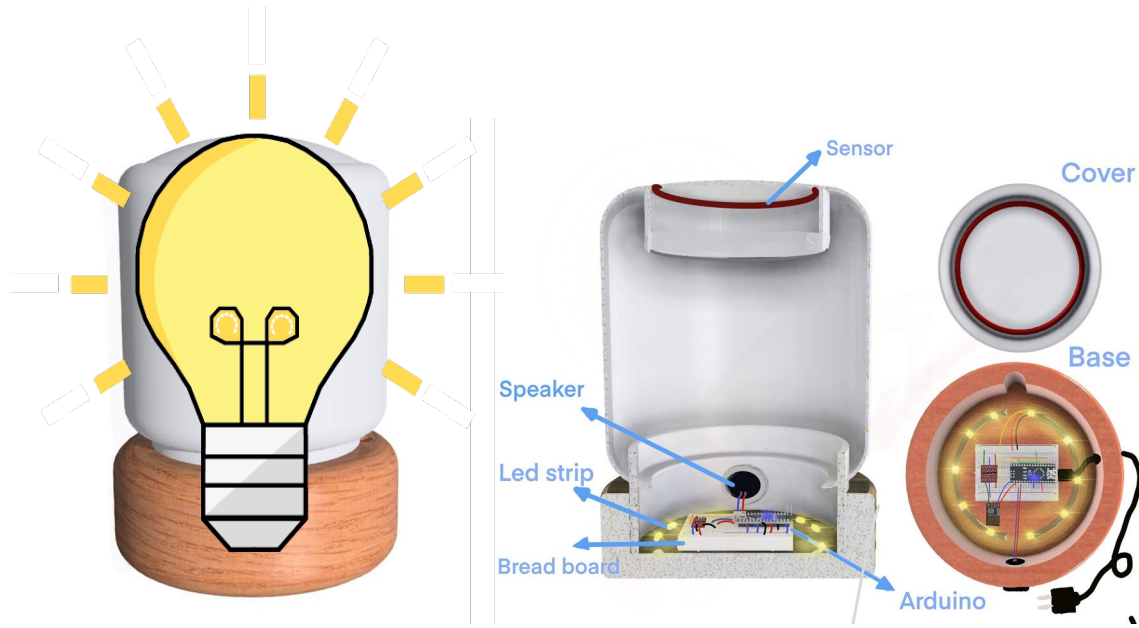
Helping Physiotherapists assess the hand function of people with Impairments



DISABLED PEOPLE INCLUSION



IBILIGHT

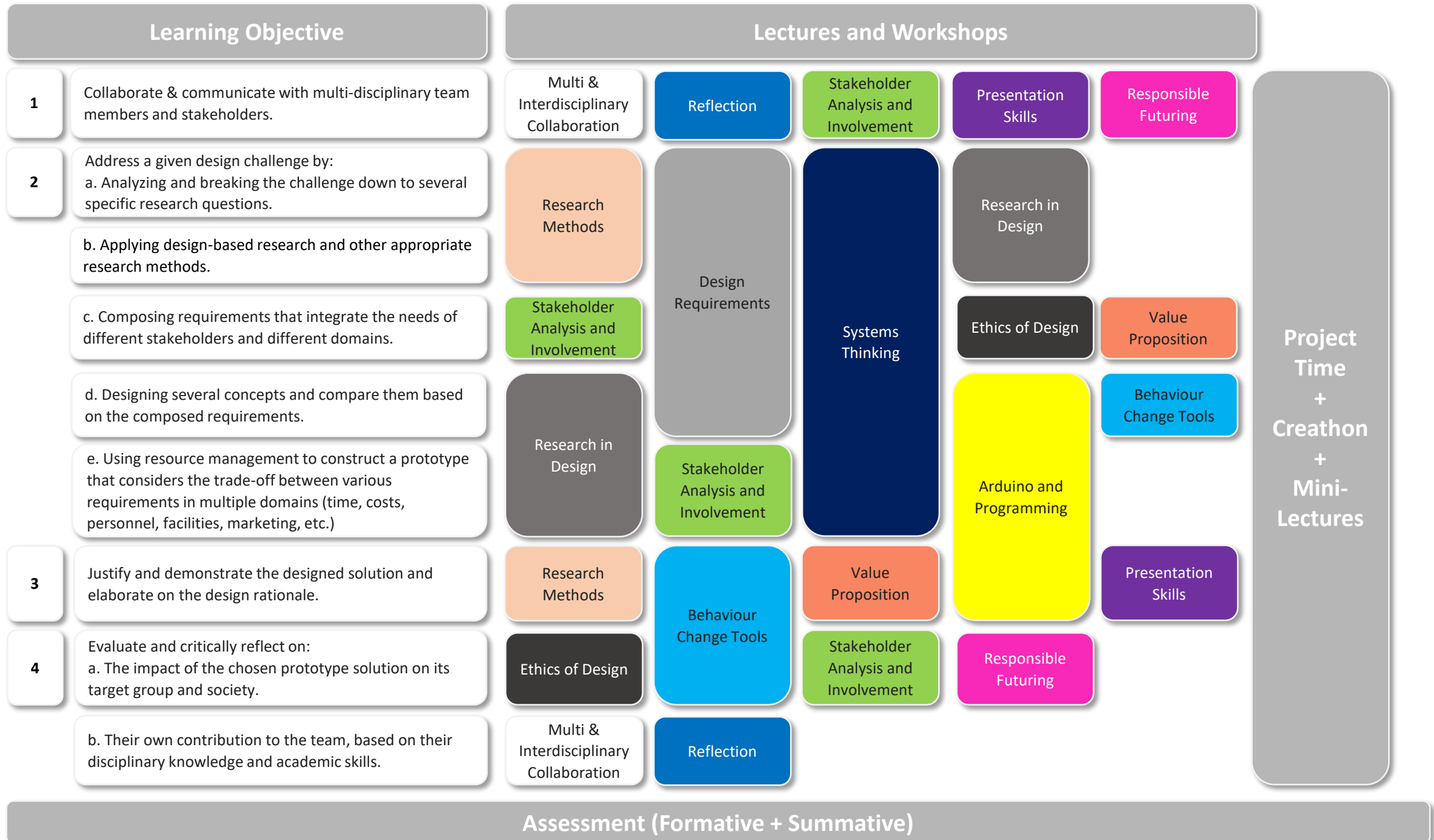


SUPPORT

- Problem Provider
 - The organization that provides the problem. Treat the providers as members of the team and learn together! **We strongly encourage you to have weekly meetings!**
- Process tutor
 - Experienced staff members that help you with the process and act as a bridge between the student and the problem provider if needed. **We strongly encourage you to have weekly meetings!**
- Project group (students)
 - Responsible to use the network of people offered by us!
 - Responsible to use your own network!

SCHEDULE

- 1st Quartile
- Lectures/meetings
 - Creathon
 - Basic Lectures
 - Workshops
 - Mini-Lectures
 - Mandatory supervised project time
 - Provider visits
 - Visits on location are encouraged both by us and the problem provider



ASSESSMENT

“Tell me how you measure me, and I will tell you how I will behave.”

Eliyahu M. Goldratt

Learning Objective	Assessment							
	Formative Assessment				Summative Assessment			
	Motivation Letter	Assignment Proposal	Buddycheck	Midterm Presentation	Report (50%)	Individual Reflection (20%)	Final Presentation (30%)	
						Peer Assessment (10%)	Expert Assessment (20%)	
1	x	x	x	x	x	x	x	x
2		x		x	x			
3					x		x	x
4	x		x		x	x		

EXPLORE

- Use the UT community



ORGANISATION

- Coordinators:



Kostas Nizamis

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Maximilian Goethner

FINAL REMARKS

- **THIS IS FOR REAL!**
 - Think realistic
 - Be flexible
 - Ask for feedback
 - Don't expect us to know the answer!
 - Different groups might get different answers to the same question
 - Timely raise your questions or concerns
 - Keep in mind that you have to opportunity to continue your challenge in the second part of the minor!

PLAYGROUND



FOR WHOM?

- Students from all programmes who:
 - Want to make a project their own
 - Are not afraid to take action
 - Are flexible
 - Want to work in an international and multidisciplinary team
 - Want to work with open-ended meaningful societal/research problems!