IDE Master Graduation Project

Project team, procedural checks and Personal Project Brief

In this document the agreements made between student and supervisory team about the student's IDE Master Graduation Project are set out. This document may also include involvement of an external client, however does not cover any legal matters student and client (might) agree upon. Next to that, this document facilitates the required procedural checks:

- Student defines the team, what the student is going to do/deliver and how that will come about
- Chair of the supervisory team signs, to formally approve the project's setup / Project brief
- SSC E&SA (Shared Service Centre, Education & Student Affairs) report on the student's registration and study progress
- IDE's Board of Examiners confirms the proposed supervisory team on their eligibility, and whether the student is allowed to start the Graduation Project

STUDENT DATA & MASTER PROGRAMME

Complete all fields and indicate which master(s) you are in

Family name	Verburg	7157	
Initials	S.		
Given name	Sacha		
Student number	4653661		

IDE master(s)	IPD		Dfl		SPD ✔
2nd non-IDE master					
Individual programme *(date of approval)*					
Medisign	✔				
HPM					

SUPERVISORY TEAM

Fill in he required information of supervisory team members. If applicable, company mentor is added as 2nd mentor

Chair	Prof. dr. ir. Diehl, J.C.	dept./section	Design for Sustainability
mentor	Dr. ir. Koning, J.I.J.C. de	dept./section	Design for Sustainability
2nd mentor	Johan de Kat		
client:	Erasmus MC		
city:	Rotterdam	country:	the Netherlands
optional comments	J.C.= knowlegde on sustainability and the clinical/healthcare context Jotte de Koning= knowledge on sustainability transitions, system thinking, and co-creation		

! Ensure a heterogeneous team. In case you wish to include team members from the same section, explain why.

! Chair should request the IDE Board of Examiners for approval when a non-IDE mentor is proposed. Include CV and motivation letter.

! 2nd mentor only applies when a client is involved.

APPROVAL OF CHAIR on PROJECT PROPOSAL / PROJECT BRIEF -> to be filled in **by the Chair** of the supervisory team

Sign for approval (Chair)

Jan-Carel Diehl

Digitally signed by Jan-Carel Diehl
Date: 2024.04.22 22:37:32 +02'00'

Name J.C. Diehl Date 22 Apr 2024 Signature

CHECK ON STUDY PROGRESS

To be filled in **by SSC E&SA** (Shared Service Centre, Education & Student Affairs), after approval of the project brief by the chair. The study progress will be checked for a 2nd time just before the green light meeting.

Master electives no. of EC accumulated in total _____ EC

Of which, taking conditional requirements into account, can be part of the exam programme _____ EC

★	**YES**	all 1st year master courses passed
	NO	missing 1st year courses

Comments:

Sign for approval (SSC E&SA)

Robin den Braber

Digitaal ondertekend door Robin den Braber
Datum: 2024.04.30 08:32:26 +02'00'

Name Robin den Braber Date 30 apr 2024 Signature _____

APPROVAL OF BOARD OF EXAMINERS IDE on SUPERVISORY TEAM -> to be checked and filled in by IDE's Board of Examiners

Does the composition of the Supervisory Team comply with regulations?

YES	★	Supervisory Team approved
NO		Supervisory Team not approved

Comments:

Based on study progress, students is …

★	**ALLOWED** to start the graduation project
	NOT allowed to start the graduation project

Comments:

Sign for approval (BoEx)

Monique von Morgen

Digitally signed by Monique von Morgen
Date: 2024.05.01 10:56:53 +02'00'

Name Monique von Morgen Date 1 May 2024 Signature _____

Personal Project Brief – IDE Master Graduation Project

Name student Sacha Verburg **Student number** 4,653,661

PROJECT TITLE, INTRODUCTION, PROBLEM DEFINITION and ASSIGNMENT

Complete all fields, keep information clear, specific and concise

Project title Reducing waste at the Interventional Cardiology Specialism by involving stakeholders in co-design

Please state the title of your graduation project (above). Keep the title compact and simple. Do not use abbreviations. The remainder of this document allows you to define and clarify your graduation project.

Introduction

Describe the context of your project here; What is the domain in which your project takes place? Who are the main stakeholders and what interests are at stake? Describe the opportunities (and limitations) in this domain to better serve the stakeholder interests. (max 250 words)

The healthcare sector is responsible for 7% of the total CO2 emissions in the Netherlands[1], and produces 328 million kilos of waste per year. At the interventional cardiology in Erasmus Medical Centre (EMC), more than two large bags of waste are produced during each procedure (see figure 1). In the last decades, the products used in the healthcare industry have often changed from reusable to single-use products[2]. About 60% of medical products are disposable products[3]. Many products are also disposed of unopened or unused. At EMC, they strive to work towards goals stated in The Green Deal for Sustainable Healthcare 3.0, aiming to reduce consumption of primary raw materials by 50% by 2030, and maximizing circularity by 2050 [4], amongst other goals.
Next to sustainability challenges, healthcare workers all have their own diverse challenges, such as financial and time constraints, personnel shortage, and the rise in work pressure due to the aging population [5]. To reach the common goal for sustainability, radical changes need to be implemented, and thus strategies that retain more value need to be implemented (see figure 2). Co-creation can help the stakeholders in this process by bringing different perspectives to the table, show hidden values and offers the chance to talk about these challenges[5]. Products will need to be analysed on their complete lifecycle[3], and it is therefore important to involve all relevant stakeholders from the product's lifecycle[6] (see figure 2), and co-create sustainable solutions that add value for all parties involved.

[1]Milieuvoetafdruk rapportage. (n.d.). RIVM.

[2]Tielbeke, J. (2023). 27 kilo afval voor een hartoperatie. De Groene Amsterdammer.

[3]Hofmann, A. (2023, 19 september). Sustainable materials and recycling in the medical industry. COMPAMED.

[4] Green Deal Duurzame Zorg 3.0. (n.d.). Green Deal Duurzame Zorg.

➔ *space available for images / figures on next page*

introduction (continued): space for images

image / figure 1 Waste after one procedure at the intervention cardiology

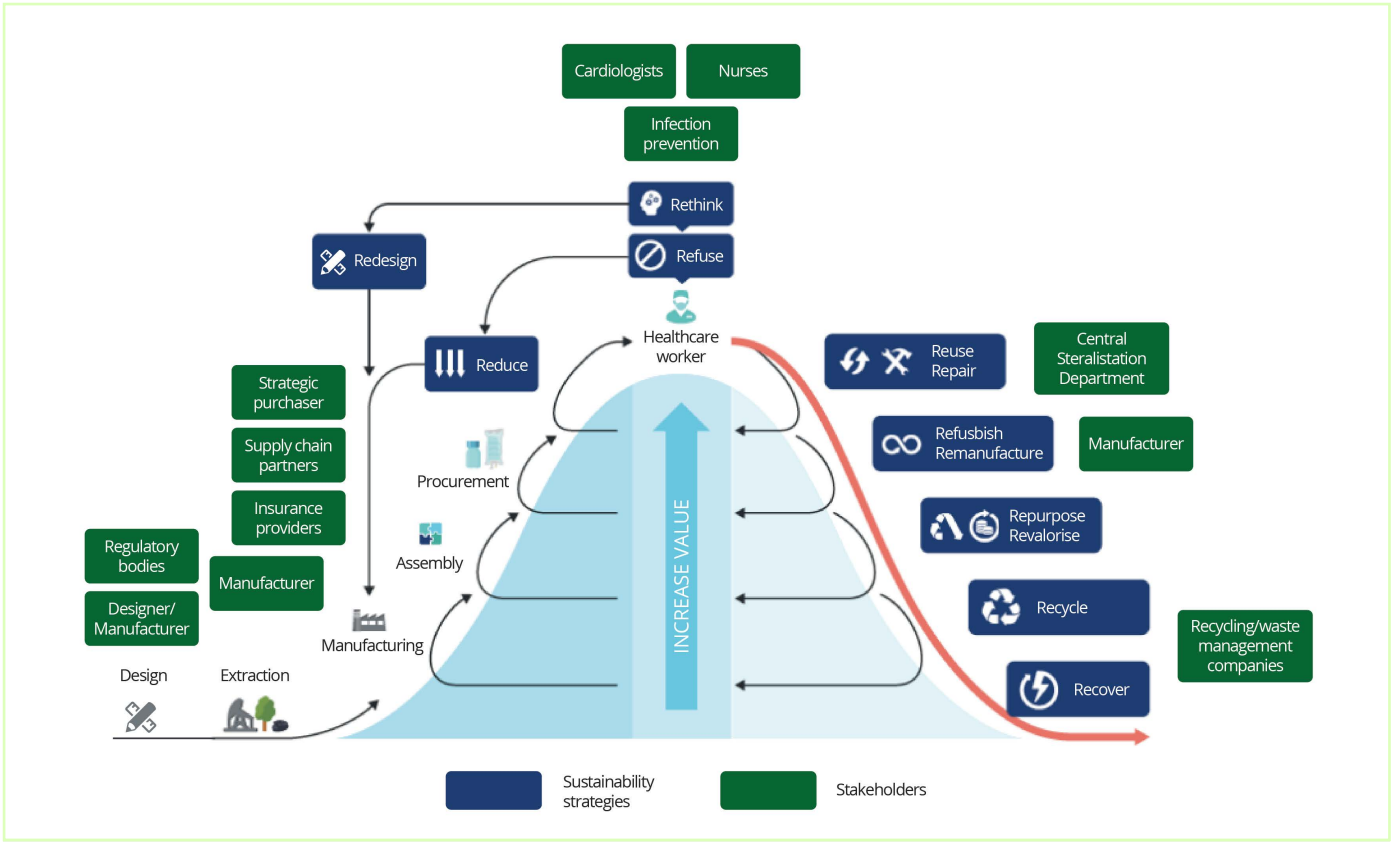

image / figure 2 Adapted visual of the Value Hill Model

Personal Project Brief – IDE Master Graduation Project

Problem Definition

What problem do you want to solve in the context described in the introduction, and within the available time frame of 100 working days? (= Master Graduation Project of 30 EC). What opportunities do you see to create added value for the described stakeholders? Substantiate your choice.
(max 200 words)

This project will look at how to co-create for waste-reduction (of prosthetics and medical products) at the specialism of interventional cardiology at the cardiology department of EMC. Changing medical products is a process that is difficult, time consuming, and often expensive, as there are many safety and quality regulations, certifications etc connected to medical products. The incentive of changing these products to be more sustainable therefor often does not come from the manufacturer itself, as they are mainly focused on financial sustainability.

Co-creation can help stakeholders work together to create a new product/business plan or redesign the product to be more sustainable in such a way that the added value for all stakeholders is kept in mind. Perspectives from the different stakeholders are shared, and the product's whole lifecycle can be analysed, hereby opening the door for the implementation of sustainable strategies more radical than waste management and recycling. As time is often a limited resource in the healthcare sector, it could therefore be desired to have a clear approach that accommodates the stakeholders in carrying out the co-creation process.

[5] ICT&Health. (2024, 20 maart). Een keerpunt in de zorg: hoe co-creatie het verschil kan maken | ICT&Health. ICT&Health.

Assignment

This is the most important part of the project brief because it will give a clear direction of what you are heading for. Formulate an assignment to yourself regarding what you expect to deliver as result at the end of your project. (1 sentence) As you graduate as an industrial design engineer, your assignment will start with a verb (Design/Investigate/Validate/Create), and you may use the green text format:

Create a co-creation tool that will assist stakeholders of interventional cardiology products in developing a more sustainable product/system and/or business model that creates value for all parties involved.

Then explain your project approach to carrying out your graduation project and what research and design methods you plan to use to generate your design solution (max 150 words)

Observe which (&how) products are used, interviews with cardiology department employees to find opportunities for sustainable improvement.

Select three/four product groups (predominantly used & diverse) to analyse. Conduct interviews with relevant stakeholders to find their values, opportunities and barriers for participating in a co-creation project to make the specific products more sustainable. The stakeholders will be mapped and their interrelated connections will be analysed. Here we can find potential opportunities or gaps in existing connections.

Designing an approach for co-creation for one (or multiple) product groups. Via literature research, existing co-creation methods (preferably used in the healthcare sector) will be analysed. Keeping in mind the specific context of interventional cardiology and the according stakeholders, a co-creation approach will be designed to guide them through the different thought processes and steps that need to be taken, hereby offering the required materials.

Project planning and key moments

To make visible how you plan to spend your time, you must make a planning for the full project. You are advised to use a Gantt chart format to show the different phases of your project, deliverables you have in mind, meetings and in-between deadlines. Keep in mind that all activities should fit within the given run time of 100 working days. Your planning should include a ***kick-off meeting***, ***mid-term evaluation meeting***, ***green light meeting*** *and* ***graduation ceremony****. Please indicate periods of part-time activities and/or periods of not spending time on your graduation project, if any (for instance because of holidays or parallel course activities).*

Make sure to attach the full plan to this project brief.
The four key moment dates must be filled in below

Kick off meeting	26 feb 2024
Mid-term evaluation	29 mei 2024
Green light meeting	10 juli 2024
Graduation ceremony	25 okt 2024

In exceptional cases (part of) the Graduation Project may need to be scheduled part-time. Indicate here if such applies to your project

Part of project scheduled part-time	✔
For how many project weeks	25
Number of project days per week	4,0

Comments:

Motivation and personal ambitions

Explain why you wish to start this project, what competencies you want to prove or develop (e.g. competencies acquired in your MSc programme, electives, extra-curricular activities or other).

Optionally, describe whether you have some personal learning ambitions which you explicitly want to address in this project, on top of the learning objectives of the Graduation Project itself. You might think of e.g. acquiring in depth knowledge on a specific subject, broadening your competencies or experimenting with a specific tool or methodology. Personal learning ambitions are limited to a maximum number of five.
(200 words max)

Explore a (medical) context:
I have always been interested in medical subjects, and therefor love the opportunity to experience the context in the actual field. By observing healthcare professionals, I want to develop my observation skills, and I would like to further develop my interviewing skills by conducting interviews with healthcare professionals and other relevant stakeholders.

Engaging multiple stakeholders:
I would like to gain experience in engaging with multiple stakeholders, and thereby develop my communication skills and actively engage with stakeholders.

Co-creation:
I have had the privilege to acquire some skills in preparing and executing co-creation sessions (with children). I would like to further develop this skill in a different setting, not (only) with the end-user, but keeping in mind multiple stakeholders with different values, barriers and opportunities that all have a different impact on the to be (re-)designed product/system/business model. In this project, I want to deepen my understanding of co-creation methodologies and principles through literature research. I hope to learn how to design a co-creation approach that will suit the intended context and will suit the work environment of the stakeholders involved.