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Master in Sustainable Industrial Engineering – SIE  
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Bachelor's degree in industrial engineering



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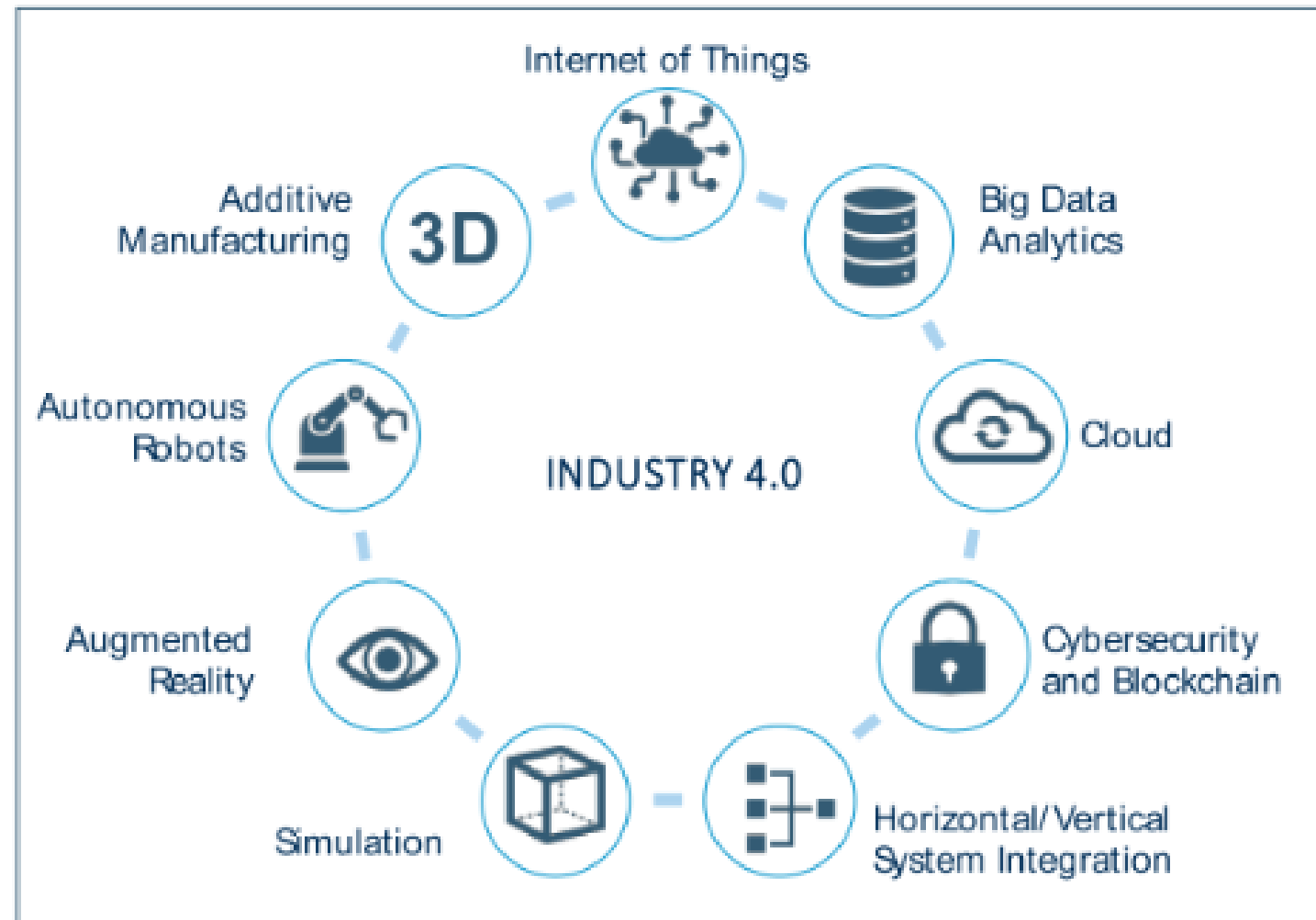
# ***Title: The use of emerging digital technologies for product disassembly within circular production systems***

**Tutors:**

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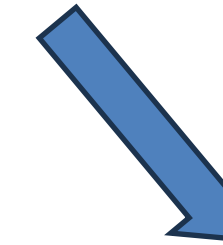
## Digital technologies



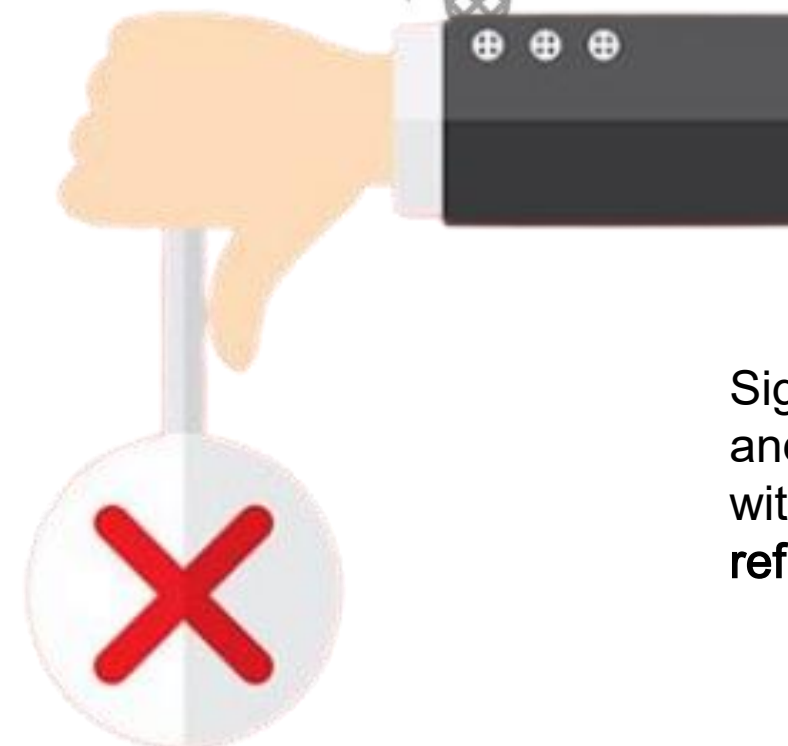
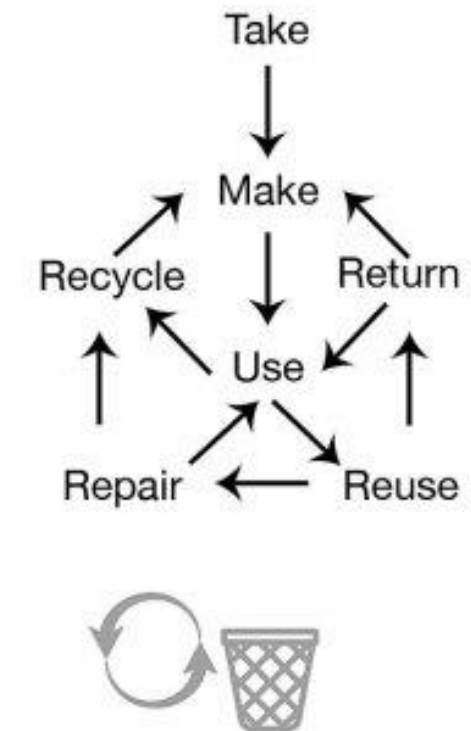
## LINEAR ECONOMY

Take  
↓  
Make  
↓  
Use  
↓  
Waste

Transition



## CIRCULAR ECONOMY



Significantly reducing waste and pollution and promoting an "end-of-life" approach with the principles of remanufacturing, refurbishment, recovery, and recycling

# Proposal

**RQ1** : How do emerging digital technologies impact the efficiency and sustainability of product disassembly processes in circular production systems?

**RQ2**: To what extent can they be implemented in the disassembly process?

**Steps:**

**1. Model the activity**

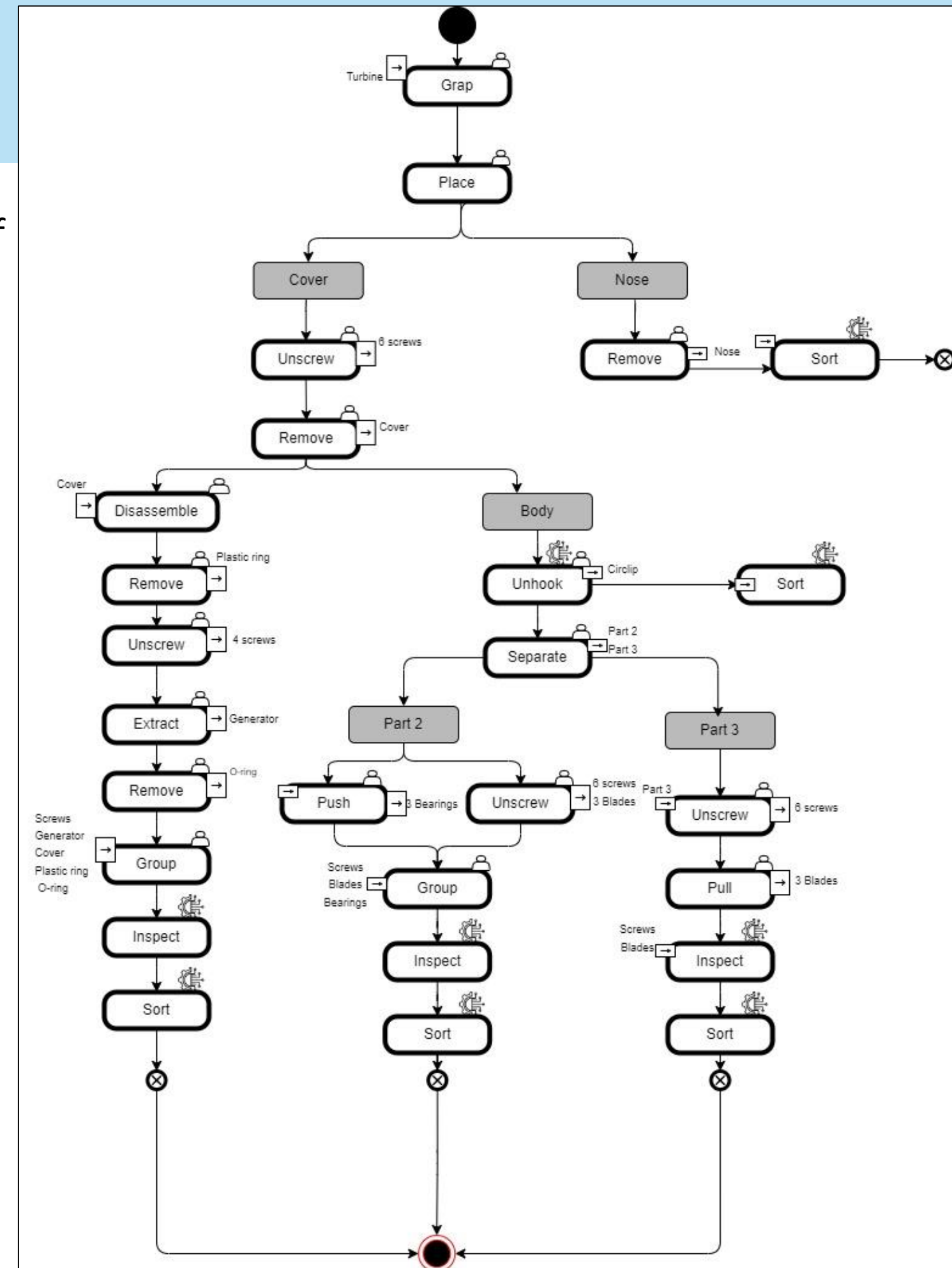


Fig 1 . Activity Modeling

# Proposal

## 2. Identification of critical operations

## 3. Integration of digital technologies

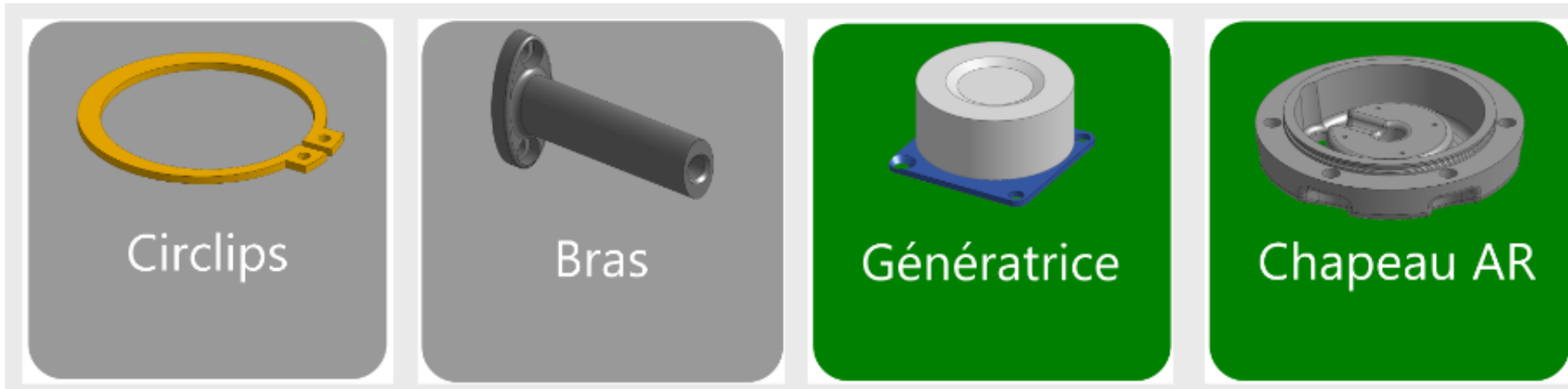


TABLE



Verb	Activities	Physical demand (P)	Cognitive demand (C)	Human risk (H)	Environmental Risk (E)	Performance (process/ flow) Risk (PE)	Total (P*C*H*E*PE)	External Factor (X)	Final Total

# Proof of concept: Tidal Turbine and components



Circlips

Bras

Génératrice

Chapeau AR



Bague

Anneau  
elastique

Vis



Pales

Moyeu

Nez

Corps



X-ring

Roulements

Entretoise

**Thank you.....**  
**for your attention**

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