Sustainability integration

- Teaching methods for mass courses
Exemplifying a potential situation for the students i.e. future experts

New technology with business prospects and without legislation is not an uncommon situation

In these cases, ethical considerations are needed in an individual and at a company level
Connections
Example courses & fields of technology for the panel

Basics in information technologies: face recognition
Measurement of biological phenomena: gene technology
SCI-project: artificial intelligence
Roles
Roles and views-examples

Facilitator: introduction, questions for panel and audience, disclaimer

Researcher: “we do research based on where we get the funding, and the others will decide on how they apply the outcomes”

Ethics / legal expert: “there are things to consider in the research and in the business”

Entrepreneur: “we are not doing anything illegal, and this is an innovative business opportunity”

Face recognition in drones

Gene tinder

Personal “deep fake” videos
Pre-task & Script
Preparing for the panel

• Students: read or watch a material on the topic, (return one-page reflection)

• ”Pohdi minkälaisia eettisiä valintoja joutuisit insinöörinä tekemään tämänkaltaisia tekoälyn sovelluksia kehittäessäsi. Tarkastele erityisesti millä tavoin sinun pitäisi henkilökohtaisissa valinnoissasi huomioida (oman etusi lisäksi) palkan maksavan yrityksen etu, kohdehenkilöille aiheutetut hyödyt ja haitat ja yhteiskunnan yleinen etu.”

• Teaching team: agreeing upon the choreography

• Introduction (by the facilitator)
• Short opening words (by each panelist)
• Opportunities (entrepreneur & researcher)
• Ethical considerations (ethics expert)
• Company presentation
• Questions to audience
• How could the risks be tackled
• Would you be willing to work for my company? (entrepreneur)
• …
Sustainability lecture at Tuotantotalous 1

- Connected with the course project “Making a business plan”
How to include sustainability in our plans?

• Business plan
• Production as a part of a supply chain
• Production planning
• Processes and operations management
A business idea: T-shirts!

But how to make it a sustainable one?
Guidance available throughout the entire supply chain / product life cycle

- Raw-materials
- Manufacturing
- Product
- Use
- Waste treatment

Guidance includes:

- Regulations
- Eco-labels, voluntary criteria by different organizations
- Clients’ specifications
- Competitors’ specifications
- Generic concepts; circular economy, eco-design
Examples for product specifications?

- Raw-materials
- Manufacturing
- Product
- Use
- Waste treatment

Regulations
- REACH (EU chemical regulation)

Eco-labels, voluntary criteria by different organizations
- EU Eco-label for textiles, Öko-tex

Clients’ specifications

Competitors’ specifications

Generic concepts; circular economy, eco-design
Example of a discussion topic
Different approaches for improving sustainability