Interdisciplinarity & sustainability at Lappeenranta University of Technology

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SEARCHING FOR ANSWERS TO KEY QUESTIONS

Are we going to burn up everything?

Is humanity condemned to suffer from the water it has polluted?

Will waste be the grave of our future?

Will we let Europe degenerate to the world's back yard?

NO. WE ARE THE DIFFERENCE-MAKERS.
LUT Trailblazer strategy

SCIENTIFIC SOLUTIONS

CLEAN ENERGY
- Energy markets and solar economy
- Energy conversion and storage technologies
- Sustainability science

SUSTAINABLE BUSINESS AND ENTREPRENEURSHIP
- Innovation and sustainable value creation
- SMEs and international entrepreneurship
- Business analytics and decision-making
- Digitalisation of businesses

CIRCULAR ECONOMY
- Water purification and reuse
- Processing of secondary and renewable raw materials
- Products and life cycle assessment

CROSS-CUTTING THEMES
- Digitalisation and data science
- Focus area research in the Russian context and with the best Russian partners

OUR VALUES | COURAGE TO SUCCEED. PASSION FOR INNOVATION THROUGH SCIENCE. WILL TO BUILD WELL-BEING.
Interdisciplinary research platforms

LUT SOLUTION-ORIENTED PLATFORMS

**REFLEX**
Recycling carbon in a flexible competitive energy system

**RE-SOURCE**
Resource efficient production processes and value chains

**DIGI-USER**
Smart services for digitalisation

**RED**
Revealing emission discrepancies

**SAWE**
Safe water for all

**SIM**
Sustainable product processes through simulation
Interdisciplinarity in research at LUT

- ID and co-operation between Schools is a must in research platforms
- One-year process to set up the platforms was challenging, now 0.5-1 year running
- A long way to go to real ID, often different WPs
- Some disciplines are “easier” than others
- Career risk for young scholars
- Out of comfort zone
- Role of business researchers
- A strong tradition of ID within business disciplines
Interdisciplinarity in education at LUT

Study at LUT – The new you

- thinks sustainably
- is a green builder
- is curious, acquires new professional skills
- gains new cultural experiences, learns languages
- makes friends from around the world
- has expanding career opportunities, has increasing earning potential
- has an internationalised CV, gets ready for an international workplace
- becomes truly independent and develops as an individual
- learns to think outside the box and from an international perspective
- thinks critically
- puts global issues first and is aware of how to save the world from a crisis
- knows how to make the world better and greener
Interdisciplinarity in education at LUT

- Sustainability *focused* MSc programs
- Environmental technology (difficulties in student recruitment and placement)
- Business (MSIS)
- No interdisciplinary program (yet)
- Sustainability minor
- Course level efforts, e.g. entrepreneurship and wind & solar power
- Interdisciplinary new MSc program in business analytics
Interdisciplinarity – discussion topics

- What are the key benefits and challenges of ID for
  - Basic and applied research & faculty
  - Education & students
  - Impact and society
- What are the key disciplines that should be involved?
- How to implement it, e.g. depth?
interdisciplinarity

– ID can be:
  problem setting / research itself / evaluation of outcomes
  coordination / inspiration / transfer / criticism / dismissal / invasion /
  collaboration / integration
  concepts, theories, model templates, methods, evidence, styles of inquiry,
  standards of evaluation

Benefits:
• Unity & integration of science
• Unification of phenomena
• Better confirmed theories, removal of mistakes
• Deeper explanations by opening black boxes
• More accurate predictions
• Intellectual innovation, creativity
• Solving externally given problems efficiently, thereby improving societal
  accountability
Benefits for researchers:
• getting hold of tools you need for solving your problems
• filling in gaps in your view of the world
• boosting creativity by becoming inspired by new ideas
• creating conditions for fruitful collaboration
• avoiding unnecessary double work

Challenges for researchers:
• Cost of becoming relevantly informed
• Cost of reorienting one’s efforts
• Cost of negotiating interactions and collaborations
• Cost of leaving behind disciplinary security and taking new risks
• Cost of reconfiguring authority structures
• Problems of communication & coordination
• Cultures & Terminologies & Goals & Styles & Standards
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