



CHALMERS
UNIVERSITY OF TECHNOLOGY



UNIVERSITY OF GOTHENBURG

INTEGRATING AND HIGHLIGHTING SUSTAINABILITY IN IT EDUCATION

JUNE 8TH, WORKSHOP



PLANNED AGENDA

- Sustainability support group for the IT Faculty
- Present and discuss alternative strategies for including or highlighting sustainability in education
 - impact of virtual courses
- Discuss sustainability labelling for GU
 - reflection in course syllabi
- Introduce course examples with sustainability content and potential for sustainability content
- Workshop integrating/highlighting sustainability in specific courses in sub-groups
- Best practices and challenges, next steps

SUSTAINABILITY SUPPORT GROUP



Jennifer
Horkoff
Senior, CSE
(GU)



Birgit
Penzenstadler
Senior, CSE
(Chalmers)



Senior, AIT
(GU)



Student Rep
CSE

Looking for more members!



Senior, AIT
(GU)?



Student Rep
AIT

SUSTAINABILITY SUPPORT GROUP: INTENTIONS

- collect and share information resources related to highlighting or incorporating sustainability into IT teaching
- support teachers and program responsables by discussing, providing resources, and examples of how to work sustainability into the curriculum in a meaningful way
- organize twice-yearly workshops sharing resources about sustainability in IT education and working through sustainability integration in example courses
- be part of the UGAIT
- work with the syllabi updating process for each department
- help coordinate the organization of Act! Sustainable activities for the IT Faculty

SUSTAINABILITY AND CHALMERS

Education for Sustainable Development in Educational Programmes at Chalmers



Bachelor's programmes 180 hec, 3 years

- Introduction on Sustainable Development.
- 7,5 hec course requirement on Sustainable Development.
- Sustainable Development embedded in courses.

Master's programmes, 120 hec, 2 years

- Four Master's programmes on Sustainable Development.
- A variety of courses and embedded parts on Sustainable Development.

Graduate programmes, 4–5 years

- Introduction/workshop on Sustainable Development.
- Graduate schools with embedded parts on Sustainable Development.
- Generic and transferable skills training, 15 hec.



SUSTAINABILITY AND GU

- “Education and research are the University of Gothenburg’s most important contributions to sustainable development, and the University aims to become a European leader in the area. ”

Our Study Programmes



sustainability related.

The University of Gothenburg offers a wide range of courses and study programmes related to environment and sustainable development – covering everything from behavioural science and sustainable business studies to environmental education and oceanography. These courses and study programmes are marked with special symbols. Orange symbols indicate a sustainability focus. If a symbol is white, the course/programme is

Courses in sustainable development

 [Sustainable computing, 7.5 credits](#)

The course can be included in the following programs:

- 1) Computer science program (N1COS) and 2) Computer Science, Master's Program (N2COS)

SUSTAINABILITY – WHY?

STRATEGY – SUSTAINABILITY HIGHLIGHTING

- Many of our courses and programs already have sustainability content
 - E.g., Software Quality course often has a sustainability guest lecture
- Such courses can be considered sustainability related by adjusting the syllabi
 - Help to advertise content
 - Locks teacher into content

SUSTAINABILITY - INTEGRATION

- Two strategies
 - One course for all – Chalmers Master's strategy
 - Some content in some courses – GU strategy, not enforced
- Pros and Cons?
 - Sustainability course taught by experts
 - Integration into subject-specific courses could be more meaningful?
 - ...

GU SUSTAINABILITY LABELLING

- GU has a commitment to making sustainability part of our education
- Currently two labels available to add to syllabi



Courses or study programmes mainly dealing with sustainable development, where more than half of the course or programme has elements related to ecological, economic or social sustainability.



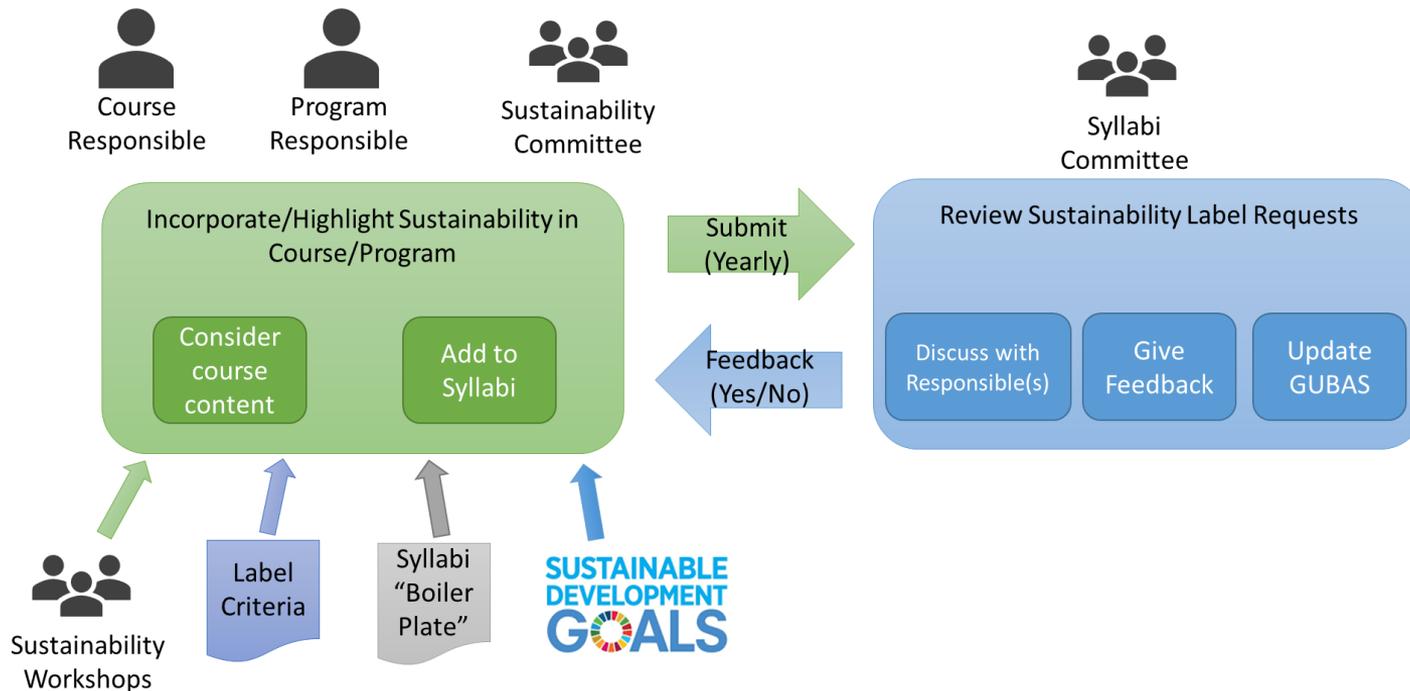
Course or study programme partly dealing with sustainable development, and where less than half of the course or programme has elements related to ecological, economic or socially sustainable development.

- Working group to revise labelling criteria and process
 - Have been attending since May 2019

DRAFT PLAN FOR EVALUATING SUSTAINABILITY LABELLING FOR THE IT FACULTY

- In line/inspired by plans and ideas from the working group
- Draft ideas for labelling process
- Plan for how to evaluate and improve process
- Core elements:
 - Sustainability committee to help course/program responsible effectively integrate/highlight sustainability in the courses
 - (Twice) yearly workshops to help discuss course content and syllabi
 - Template text to add sustainability justification to syllabi
 - Syllabi changes approved using current process (e.g., syllabi group)

DRAFT PROCESS VISUAL



CURRENT LABEL CRITERIA

1. Sustainability as a concept:

The history in a global context of the concept of sustainability and sustainable development and the current study field related to global challenges.

2. Analysis from a globalisation perspective

How products, services, or activities in their own lives or in the future professional profession affect the natural environment, social conditions and the economy in a global perspective, both today and in the future.

3. Natural limits

Demographic trends and lifestyle in relation to the exploitation of natural resources, or the finite capacity of natural ecosystems to provide for human needs.

4. Maintaining ecosystems

Conservation of natural resources and practices to protect and maintain the integrity of viable ecosystems in the face of rising human demands.

5. Human rights and social equity

Distribution, discrimination, health and poverty issues and the mutual interaction between social inequality, poor health, the natural environment and people's opportunities for good living conditions.

6. Values, culture and ethics

How norms, culture, religion, ethics and social conditions can shape human behaviour toward the natural world.

7. Consumer and customer power

How demands for environmental consideration and social responsibility from private and public clients and consumers affects individuals, policies and corporate strategies and business opportunities.

8. Governance and management

How regulations, policies, economic policy instruments and voluntary agreements, and leadership shape human behaviour and the actions of nations and companies in respect of the natural world and social issues.

9. Planning and design

How community planning and product and service design can influence human well-being and human impact on the natural environment.

10. Actors' work and responsibility

The efforts of various global and local actors, and their monitoring of environmental performance and social and economic responsibility.

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SUSTAINABLE DEVELOPMENT GOALS

1 NO POVERTY

2 ZERO HUNGER

3 GOOD HEALTH AND WELL-BEING

4 QUALITY EDUCATION

5 GENDER EQUALITY

6 CLEAN WATER AND SANITATION

7 AFFORDABLE AND CLEAN ENERGY

8 DECENT WORK AND ECONOMIC GROWTH

9 INDUSTRY, INNOVATION AND INFRASTRUCTURE

10 REDUCED INEQUALITIES

11 SUSTAINABLE CITIES AND COMMUNITIES

12 RESPONSIBLE CONSUMPTION AND PRODUCTION

13 CLIMATE ACTION

14 LIFE BELOW WATER

15 LIFE ON LAND

16 PEACE, JUSTICE AND STRONG INSTITUTIONS

17 PARTNERSHIPS FOR THE GOALS



SUSTAINABLE DEVELOPMENT GOALS

SYLLABI RECOMMENDATIONS

- At least one learning objective relating to sustainability
- Changes to other sections?
- GU – label can be added
- Chalmers – add any text?

COURSE EXAMPLES (1/2)

- DAT326 / DIT982 Domain Specific Languages of Mathematics - Patrik
- Does not currently mention sustainability explicitly
- “It has been developed in collaboration with the Potsdam Institute of Climate Impact Research
 - we have been doing related research over a period of over ten years resulting in a number of papers on modelling, testing, proving in the context of sustainability and climate impact research
 - I've had guest lectures by my collaborators all years except this spring
 - There is clearly a potential in introducing more sustainability-related material but I have so far not had the time to do so.”

COURSE EXAMPLES (2/2)

- Tomas AIT course...

WORKING PART OF WORKSHOP 😊

- Split into 2 groups – per course
- Spent time (30 minutes) discussing course
 - Ideas for integrating sustainability
 - Lectures, activities, topics, ...
 - Challenges
 - Changes to syllabi

COURSE DISCUSSION: SUMMARIZE FINDINGS

BEST PRACTICES, CHALLENGES, NEXT STEPS

- General findings
- Challenges
- Next Steps