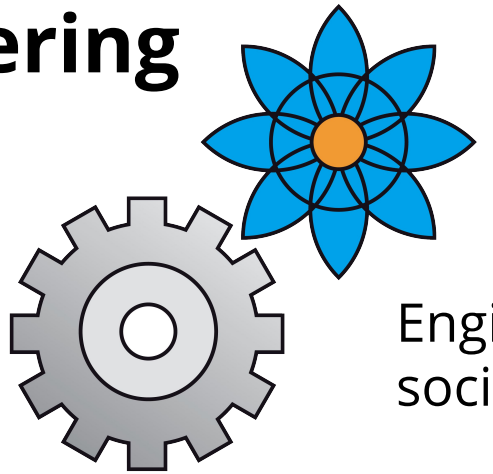
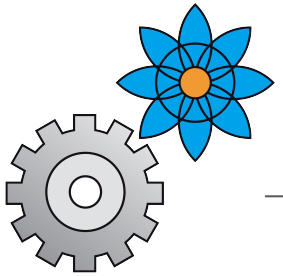
Blue Engineering



Engineers with
social and ecological responsibility



Outlook - Day 2

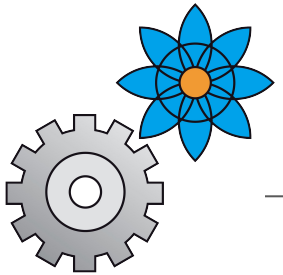
Technology as Problem Solver

TINS-D Constellation

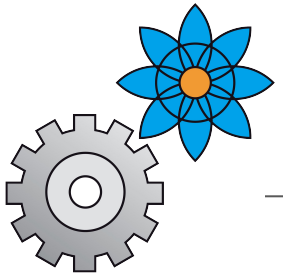
Blue Engineering Course at TU Berlin

Groups and Power Relations

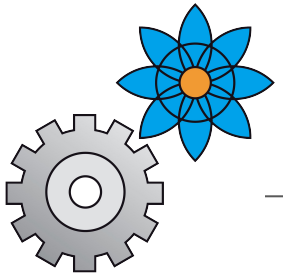
Sustainability in Engineering and Agricultural Technology



Technology as Problem Solver!?



TINS-D Constellation



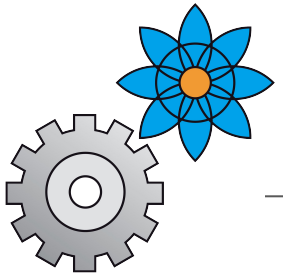
Society Nature Relations

neither “naturalizing of society” nor “socializing of nature”

instead of perceiving nature in crisis, the dominant forms of the societal appropriation of nature come into perspective

considers the reciprocal linkages between society and nature

overcoming separation: natural, technical and social sciences

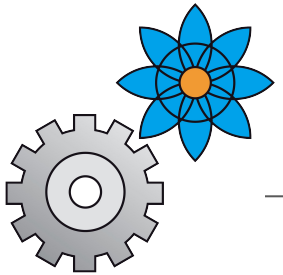


TINS-D Constellation

technology

individual democracy society

nature

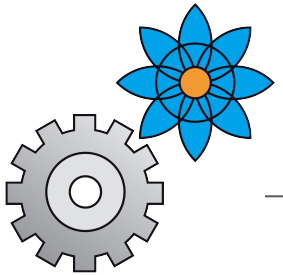


Nature

materiality of nature as basis to reproduction and production

nature is shaped by society as culture

nonetheless: nature has its proper value – non-identity of nature

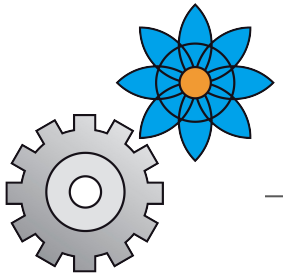


Nature

plurality of conceptions of nature - historical / social causes

today two views are competing:

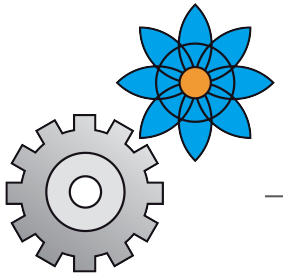
- nature is seen as something which can be dominated
- nature is seen as something which has to be protected



Dialectic of the Enlightment

“Any attempt to break the compulsion of nature by breaking nature only succumbs more deeply to that compulsion”

Max Horkheimer & Theodor W. Adorno



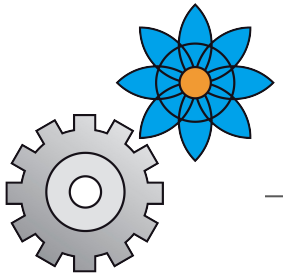
Technology

it's not the question whether we use technology,
but which and how

materiality of technology as artifact and as a system

technology as mean or end

technology as mean to dominate man and nature



Individual / Single Wo_man

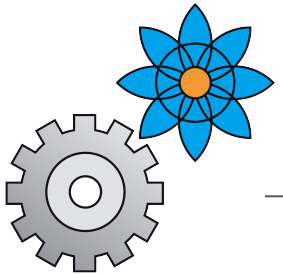
wo_man does not make oneself, but is born

materiality of wo_man and their limits accordingly

every wo_man is unique – thus no equality

wo_men as actors shape and are being shaped

wo_men make decisions, thus they are agents



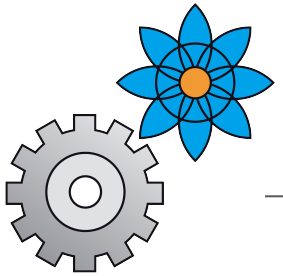
Society

individuals can not withdraw, thus they take part

society is shaped according to its history

is more than the sum of its parts – individuals and systems

traditions, norms, rules, laws etc.



Democracy

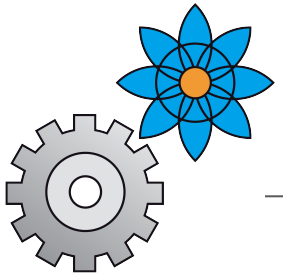
equality and liberty as normative foundation – conflict of goals

considering territorial and temporal impact of decisions

reversibility of decisions and liability

does not diminish the knowledge of non-knowledge

does not guarantee anything, but gives a reasonable chance



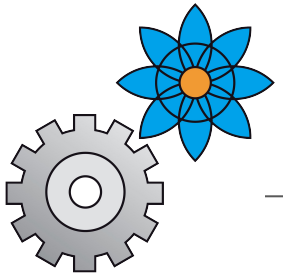
Democracy more Concrete

Who takes on – what – how – which – decision?

equality and liberty as normative postulate – conflict of goals

democracy as the mode how decisions are taken

the „private“ is political and the „political“ forms the private



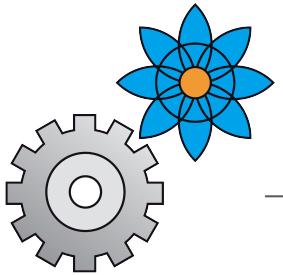
Democratisation of TINS

persons involved and concerned

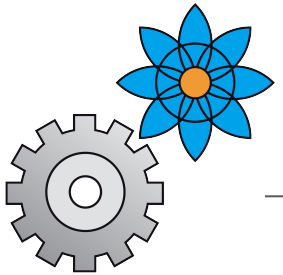
may partake in the decision-making process

if I don't partake in decisions and design,

I am designed and I will get decided upon

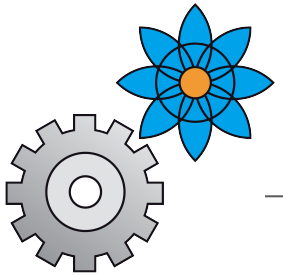


Blue Engineering Course



What is the Blue Engineering Course like?

2009/10 founding as two year project workshop
which grants credit points and pay for two tutors
2011/12 first implementation only by tutors – 25 participants
since 2012/2013 one lecturer and three tutors



Course Design

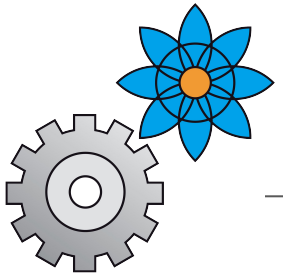
interactive and transferable course design design

variety of alternative teaching methods / content

group and discussion oriented – minimum level of hierarchy

not teacher-centred but peer-to-peer learning

students conduct about half of the courses on their own



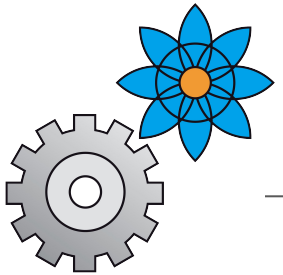
Course Design in Detail

15 lessons on mondays 14h – 17h – with a 15m break and snacks

compulsory course in several master programmes

capacity for 100 students each semester

sometimes together, sometimes divided in three courses



Students Co-Design the Course

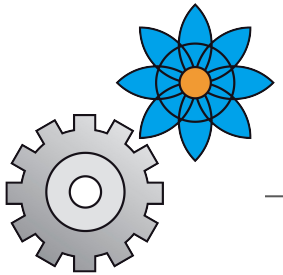
over 50% of the course is conducted by students

the topics are set by the students through term projects

the term projects are meaningful work, as they are reused

by now the course is organized only by three tutors

TERMIN	DATUM	H3006	H3007	H3008
1	18.10	Einführung → alle in H3006		
2	25.10	Kombini: Plastik → gemeinsamer Start H3006 → BARCAMP	MB Plastikzeitalter	MB Plastikzeitalter
3	1.11	① Themen-/Gruppenfind. ② TING-D	alle Pflichtbausteine vorstellen (anhand ... aus aktuell passiert, Vorbereitungen)	
4	8.11	Verantwortung + Kodizes	Produktivistisches Weltbild Mat	Technik als Problemlöser?! Theresa
5	15.11	1. Feedback Übersthema: 2. Produktivistisches Weltb.	1. Feedback Übersthema: 2. Technik als Problemlöser	1. Feedback Übersthema: 2. Verantwortung + Kodizes
6	22.11	1. Feedback 2. Technik als Problemlöser	1. Feedback 2. Verantwortung + Kodizes	1. Feedback 2. Produktivistisches Weltb.
7	29.11	Energie 1. Anno Domini: Atomkraft 2. Geschichte d. dezentr. Energieversorgung	1. Peak Everything 2. Seltene Erden Ressourcen	1. Technik als Drama Verantwortung 2. To fly or Not to fly
8	6.12	1. 25 Fragen Hydro Last 2. Diversity, Technik + Gend	1. Blue Stories Soore 2. Diversity, Gender & Technik	1. Geschlechtssp. Spielzeug 2. Diversity, Gender & Technik
9	13.12	Ernährung 1. Essen ist zum essen da 2. Industrielle Fischerei	Zeitwohlstand 1. Arbeit & Zeit 2. Eine kurze Geschichte der Zeit	zusammen leben 2. Stadt der Zwänge 2. Global Village
10	3.01	Arbeit, Gesellschaft Steffi IGM	u. Gewerkschaft	- IG Metall
11	10.01		Semesten.	arbeiten
12	17.01			Präsentation
13	24.01			ABSCHLUSS

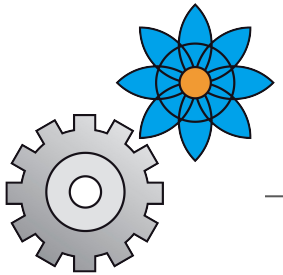


Students…

….write a personal, structured learning journal

…conduct a building block in a group of 3 – 5

…feedback, test, present, evaluate and document term project



Student’s Term Project

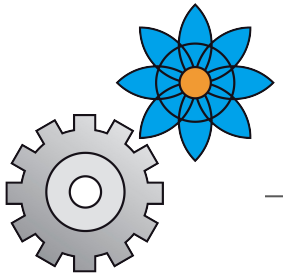
create a new building block

any topic with a clear link to social and ecological responsibility

interactive methods, discussions, games, role play etc.

transfers the responsibility from the teacher to the students

reusable and transferable to various teaching/learning settings

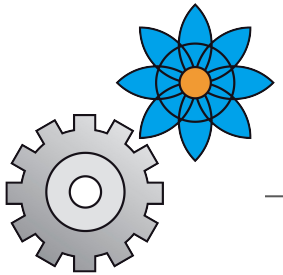


Blue Engineering Course as a Success Story

over 650 students in total

established as a unique and demanding course

inspired similar courses at two other universities

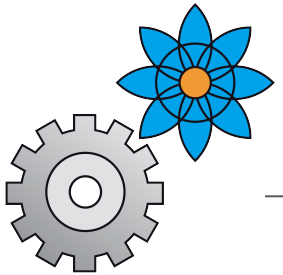


Council of Sustainable Developtment

adaption of the german sustainability council to TU Berlin

first idea in January '15 and first convened in June '16

same level as the two central councils on teaching and research

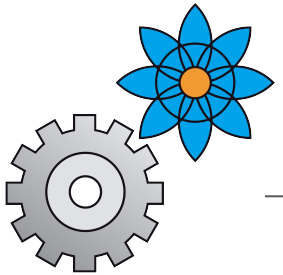


Sustainability Certificate for Students

certificate of 18 Credit Points in the field of sustainability

inter- and transdiscipilinary

first idea in spring 2016 and established in May 2017



Bottom Line

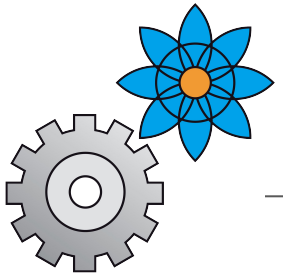
things and systems can change

if few people get together to change things, things change

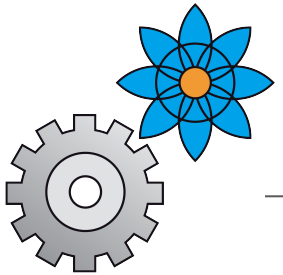
change seldom is an instant gratification, but takes time

change may hurt, however shaping the present also caused pain

gives warm, fuzzy feeling of shaping one's own surroundings



The World is fine as it is!?

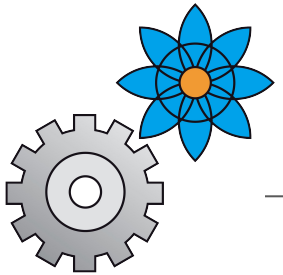


To whom is the world fine as it is?

Who or what profits from the present distribution of X ?

Who or what is harmed by the present distribution of Y?

discuss and prepare a short statement



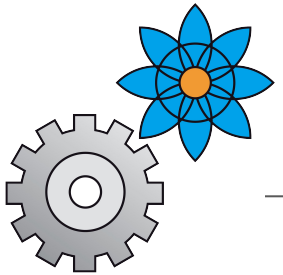
Does the Need to Change Arise Therefor?

Who needs to act?

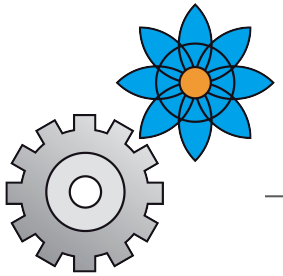
What is required to act?

Who needs to change?

What needs to change?



Examination Requirements



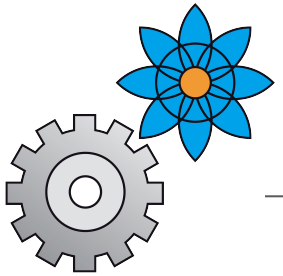
Examination Requirements

...keep a learning journal

...create a building block in a small group

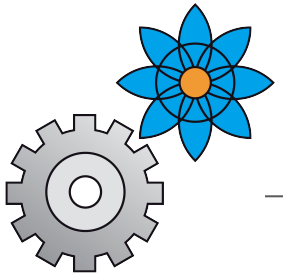
...document a building block

details will be presented tomorrow



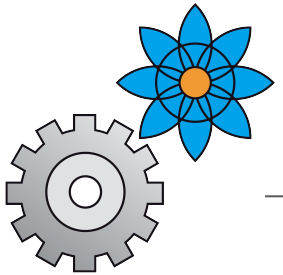
Learning Journal

reflect upon major exercises and insights of that day
connect the dots between the different topics
report upon conversations you had with friends and family
report upon articles, audio and video files etc. that are linked
some sort of creative discourse with the topic



Creating New Building Block

any topic with a clear link to social and ecological responsibility
interactive methods, discussions, games, role play etc.
transfers the responsibility from the teacher to the students
reusable and transferable to various teaching/learning settings
group and topic will be determined on Thursday / Day 3



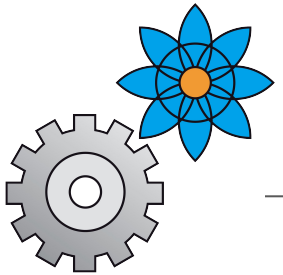
Conduction of Your Building Block

to ensure quality before conduction:

peer-to-peer-feedback and feedback by tutors

conduction in the last week of the summer university

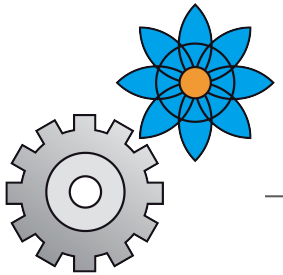
exact scheduling will follow



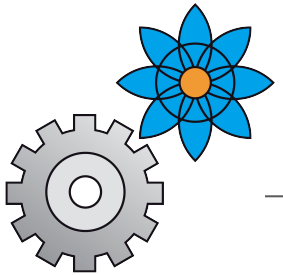
Documentation of Your Building Block

using the Blue Engineering website and templates

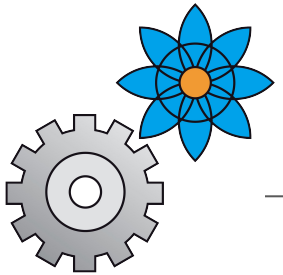
accessible by every everyone



Grouping Groups

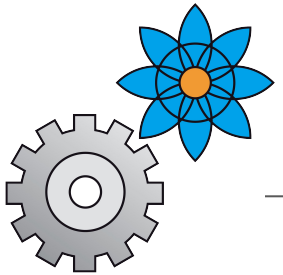


Power Relations



Finissage

Technology as Problem Solver - TINS-D Constellation
Blue Engineering Course at TU Berlin - The World is Fine
Groups - Power Relations - Course Requirements
Sustainability in Engineering and Agricultural Technology



Outlook for Thursday - Day 3

Water Treatment in Berlin - Excursion - 09.00 U-Bahnhof

25 Questions by Max Frisch

Topic and Group for Term Project

The Necessity of a Treaty