Rules, Responsibilities and Roles in Labs

March 2023

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Senior Advisor for Health & Safety at TEK

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Why Bother?

→Avoid accidents and health problems

→Comply with the law

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Avoid Accidents and Health Problems at Work

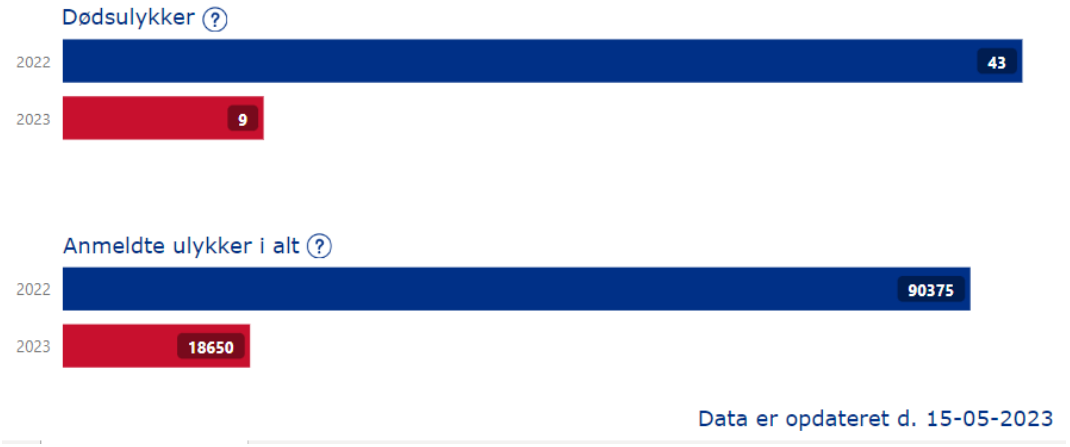
→**Reported** occupational injuries: 90,000+ work-related injuries in DK in 2022

→Of these 43 work-related deaths in 2022

→In 2021: 250 accidents at DK universities & research organisations

→ About 16 of these are serious accidents (more than 3 weeks of absence)

→**Reported** occupational deceases: About 20,000 annually in DK



Sources:

- *https://at.dk/arbejdsmiljoe-i-tal/ulykkesbarometer/*
- *https://www.aes.dk/statistik/arbejdsskader/aarsstatistik*
- *https://at.dk/media/8028/arbejdsrelaterede-doedsulykker.pdf*

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Why Bother?

→Avoid accidents and health problems

→Comply with the law

NATIONALT

Virksomheder får strakspåbud efter arbejdsulykke med dødelig udgang

Arbejdstilsynet rejser flere straffesager mod virksomheder, der slækker voldsomt på sikkerheden.

Portør får millionerstatning efter arbejdsulykke

ARBEJDSTILSYNET

Working Environment Act

→You must **plan** the work so that it's **safe and healthy**
→Everybody must **cooperate** in ensuring a safe and healthy work environment
→There must be a work environment **organisation**
→**Employer/management** must **monitor** work environment
→**Inform** about **risks** and give **instructions / education**
→Not knowing what's going on is no excuse – on the contrary

→Please note: Several different rules & regulations;
find the ones pertaining to your activities

Sources:
DK: https://at.dk/regler/love-eu-forordninger/arbejdsmiljoe-2062-sam/
EN: https://at.dk/en/regulations/working-environment-act/

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Consequences of Occupational Injuries or Diseases

→**Personal** for the affected person (and relatives)
→Personal (**psychological**) for colleagues, witnesses, persons co-responsible for safety, the responsible leader / manager, witnesses
→**Financial:** personal / organisational: fines, damages, prison up to two (to three) years (§82)
→**Activities stopped** temporarily or permanently
→**Absence** of sick or injured employees
→TEK / SDU **reputation** – may affect our ability to attract cooperation partners and students, bad PR etc.
→ **Affects our core business**

Alvorlig ulykke på universitet

08.08.2019 08:51
Af: Uffe Dahl newsbreak.dk - mail: redaktion@newsbreak.dk

Ambulancer, politi og redningskøretøjer er ankommet.

Arkivfoto: René Lind Gammelmark

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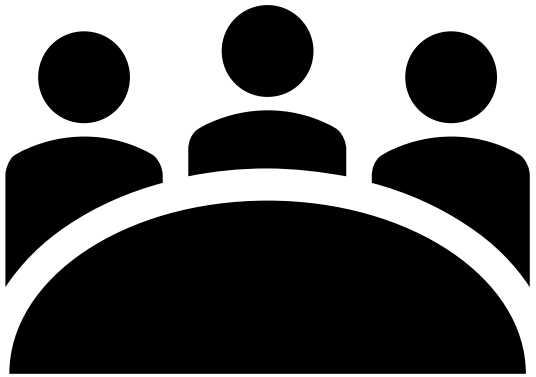
Pair & Share



Reflect and discuss:

→Do you report all incidents, (that you know of) in your department / unit, including near misses?

→Why / why not?

→Why must incidents be reported?

→Where and how can you improve?

Management Responsibilities

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Formal Management Responsibility

HoU delegation at TEK:

→*"Responsible for the work environment in the unit as well as cooperation with the work environment group at the department about prevention and any follow-up on work environment issues."*

→**HoD**'s, the Dean and the Vice-Chancellor are responsible at the overall level

Work Environment Act §23 (and §§24-26):

→*"The provisions of this Act on the duties of the employer shall also apply to the manager or management of the enterprise. "*

Source: https://at.dk/en/regulations/working-environment-act/

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Management Responsibilities

→***Plan* the work so that you ensure *fully* safe and healthy working conditions**
→**Focus** on work environment in your part of the organisation
→**Authority**: Make your employees aware that work environment and safety are important
→”**Eyes & ears**”: Bring issues to working environment group
→**Act** to ensure a safe and healthy working environment
→**Control/*monitor*, participate and instigate**: The manager is obliged to monitor the work and ensure that efficient inspections, instructions, risk assessments etc. are carried out
→DIALOGUE and “walk the talk”

→Managers are **role models**

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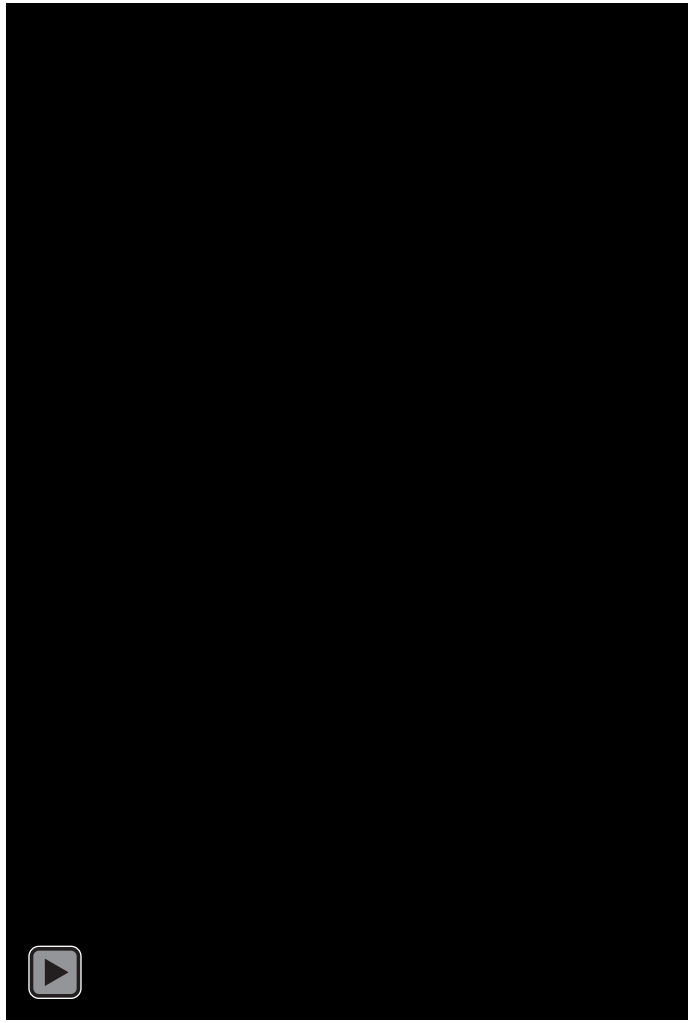
Persons Responsible for Labs and Workshops



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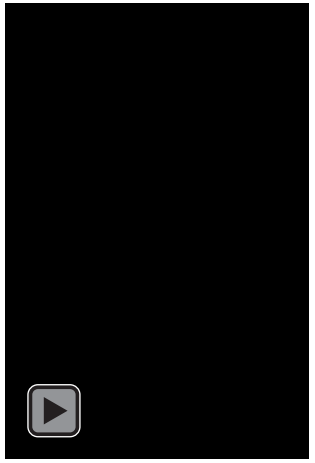
Responsible for Labs and Workshops

→We are **all** responsible for ensuring a safe and healthy workplace – like a driver is responsible in the traffic (§27)

→The person responsible for the labs must ensure safety & health in relation to daily operations / experiments in the labs etc.

→…and the management always has an overall formal responsibility

→**Description of responsibility at MS Teams / SharePoint site (doc. ## 1 & 2)**



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Responsible for Labs – Responsibilities (1)

→Always choose *least risky alternative* (process, machine, chemical etc.) – the principle of **substitution**

→**If risks in lab: Limit access** to the lab / workshop / storage room to relevant persons, and ensure that they are instructed / trained

→**Risk assessments and safety instructions; pay attention to new equipment / materials / processes in the lab**

→Ensure **compliance** with risk assessment/safety instruction

→**Risk assessments, manuals, safety data sheets (SDS) and safety instructions** must be **available** to the relevant persons in / from the lab

→**Chemicals / materials** in “Kemibrug” (http://kemibrug.dk/)

→**Documentation and knowledge sharing**: MS Teams (SharePoint) site for relevant documents

→**Signage** – at room or process/equipment level

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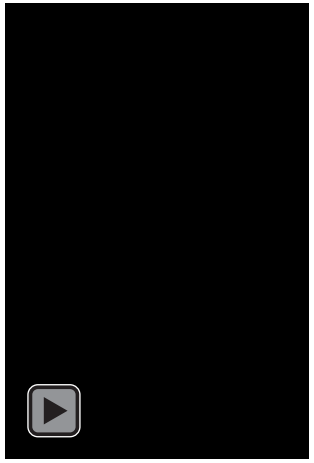
Responsible for Labs – Responsibilities (2)

→In general: Comply with the law and regulations (some links on a slide at the end of the presentation), e.g.:
  →Annual inspections of ladders, pallet shelves, cranes, centrifuges etc.
  →Inspection/service of machines/equipment: What does the manual say?
  →Correct storage and labelling of material (esp. of chemicals)
  →Protective gear must be available and adequate
  →**Instructions and training** / certifications (colleagues + students involved in the relevant processes), e.g. epoxy course, fork lift certificate etc.
  →Registrations, approvals etc. (e.g., GMO, radioactive material / isotopes, ATEX, animal by-products etc.)
→**In general: User behaviour and conditions in lab.**
→*You may not have to do it all yourself – but you MUST ensure that it's done. Management must support this.*

PLEASE NOTE: The list is not exhaustive.



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Everybody Has a Responsibility

→At work, your own safety is not optional.

→At work, as in life: **Your actions (or lack of same), your responsibility.** Like driving a car.

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A Few Reminders / Focus Points

- Keep the workplace tidy – avoid tripping hazard (remember to remove / fix cables)
- No chemicals or heavy items (max. 3 kg) above shoulder height
- No test wires or clamps (“alligator clips”) without insulation

- All 230V equipment that has a ground (Earth) pin, must be connected to mains ground (Earth)
- New machines/electrical equipment must be CE marked and come with a manual in Danish + English (+ original language)

- Correct labelling, handling and storage of chemicals
- Be aware of rules and guidelines within different areas, e.g. electrical safety, chemicals, battery safety, ATEX, epoxy, laser, nanoparticles etc.
- Be aware of your own and others’ “state of mind”; if you are “mentally absent”, you should not work with risky processes / materials / equipment!

- *Apart from written risk assessment: Make a risk assessment “in your head” before you start up the process – every time! Common sense – and your senses (eyes, ears, etc.). Like crossing the street…*

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New Processes / Equipment / Materials

→Make the risk assessment up-front – **already before ordering new equipment / materials or starting up new activities**
  →Use the manual and Safety Data Sheets
  →Ask the supplier about safety requirements
  →If you purchase equipment abroad, especially outside EU: You have an extra responsibility to check according to Danish law; external consultant may be needed

→Involve the working environment organisation – **you need their approval before you start up**

→Involve Technical Services (8888@sdu.dk) and/or TEK Building Committee for advice *before* you place the order, e.g. about:
  →Where can the process / equipment be placed
  →Need for process ventilation, safeguarding etc.
  →NB: Noise, vibrations, waste, emissions, moving parts, need for water supply / gases / electricity etc.

→Find guidelines, templates and checklist here (English & Danish):
https://sdunet.dk/en/enheder/fakulteter/teknik/praktisk-info-og-faciliteter/ombygninger-og-installationer

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Do We Have the Time to Prepare?

→Examples when risk assessments have not been done in time:

→New machines / equipment still not taken into use after up to 1-2 years!

→Enforcement notices from the authorities: Activities may be stopped immediately and until everything is in order and approved. A lot of documentation / administrative work required.

→Accidents (which almost always lead to enforcement notices)! Aforementioned consequences – and you WILL also spend a lot of time on corrective actions and wait for a green light to start up again.

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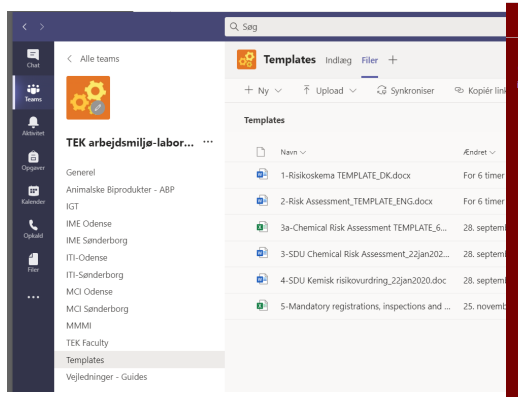
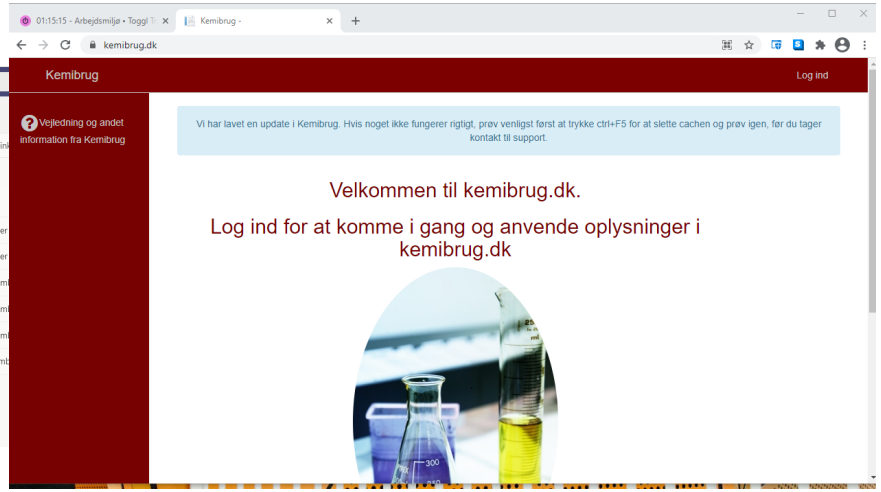
Risk Assessments

Documentation at:

- [MS Teams]
- [Kemibrug]





Risk Assessment

Date: [Fill in date]
Latest update: [Fill in date]
Room: [Fill in room number and name]
Responsible for room: [Fill in name]
Participants: [Names of participants in risk assessment]

What	Risk description/"extent" (see last page)		Management/precautions
Machine Technical appliance Robot	Normal use	Other use: maintenance, cleaning, transport etc. (high risk of wrong use?)	• User manual available (legal requirement) • Instructions, oral / written • Precautions: signage, shield / safeguarding, ventilation, protective gear etc. • Instructions in case of accidents **Red**: Only for use after thorough safety instructions and carefully sticking to the guidelines. Students are not allowed to be alone in the room or use the equipment alone; there must minimum be one other person present who has also received the safety instructions (can be a fellow student). **Yellow**: Only access after safety instructions. Students may use the lab /equipment without supervisor after thorough safety instructions. **Green**: No risk. Students can use the lab /equipment without any preceding safety instructions.
EXAMPLE: *Spectroscopy:* *Laser class 4*	*LOW* • *Risk of eye damage* • *Risk of skin damage* • *...etc.*	*HIGH* • *Risk of eye damage* • *Risk of skin damage* • *...etc.*	• ***Safety glasses class 4 wavelength 500-2000 nm are mandatory for all persons in the room when the laser is in use*** • *No jewelry etc. that may reflect / divert the light is allowed* • *Ensure that the laser beam is shielded and not directed at any persons* • *Always turn on red warning light before turning on the laser, and remember to turn it off again when laser is turned off* • *In case of injury, ...[procedures]* • *...etc.*

Chemical Risk Assessment

Name	Jesper Bergholdt Sørensen
Date	20-apr-20
Chemical quality check + date	Lars Duelund / 20 April 2020
Risk Assessment regarding	Cleaning / degreasing with Acetone
Institute / Department	ITI
Building	42
Room (No. + description)	0333-606-1 Materialelab
Exposure (extent, type and duration)	None when procedures are followed
Exposure - inhalation	None when procedures are followed
Exposure - skin contact	None when procedures are followed
Exposure - ingestion	None when procedures are followed

Substitution considerations
At present the solution can't be substituted with another chemical. Quantities in the lab are kept to a minimum:
Maximum quantity allowed in one container is 200 ml.

Examinations regarding occipational medicine?
No relevant accessible.

Procedure	Chemical agents/Kemibrug for SDS (CAS no.)	Symbols	Pictogrammes descriptions	Other hazards	Remedies	Protective equipment	At accidents and spillage	Limit values	Waste management	Storage
Cleaning (degreasing) is done in the fume hood with acetone. Acetone is found in the chemical locker in small bottles.	Acetone: CAS No. 67-64-1 The SDS is in hardcopy in a folder in the room as well as online on "Kemibrug".		H225 Highly flammable liquid and vapour. H319: Causes serious eye irritation. H336: May cause drowsiness or dizziness. EUH 066: Repeated exposure may cause skin dryness or cracking. P210: Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. P305+351+338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.	Normal use and handling: Evaporates at low temperature and is very flammable. If power supply to fume hood fails, vapors can build up with the risk of fire/explosion. Risk of spillage during transportation. Damage to reproduction is suspected. Please also se general risk assessment for the room.	Access to the lab is limited to persons who have received the safety instructions. Only use Acetone in fume hood throughout the entire process. Maximum work quantity: 200 ml. There are no alarms in the room (besides on the fume hood and the chemical cabinet). Please also se general risk assessment for the room. No access to the chemical lab for pregnant and breastfeeding women.	**Nitrile gloves** must be used throughout the entire process. Penetration time according to manufacturer SDS is below 1 min. Location: In the chemical room (wall mounted holder). **Lab coat** must be worn throughout the entire process, available in lab. **Safety glasses** must be used throughout the entire process, available in lab.	If Acetone on gloves or clothes: Take off gloves / clothes immediately and wash hands / skin thouroughly with soap.Gloves must be trashed. Shower and eyewash are available in the lab. In case of fire, please follow the instructions in the emergency management plan. Fire fighting equipment is available in the Materials Lab. All spillage must be removed before you leave the lab. Acetone that has not evaporated before you leave, must be removed with a paper towel and disposed as chemical waste in the white bin. The lab responsible must be	600 mg/m³ 250 ppm	Waste manager: Fortum A/S. Gloves, paper etc.: Waste group H. Used gloves must be thrown in the white waste bin. Liquid: Waste group C.	200 ml bottles must be stored in the ventilated cabinet. Large containers (1-5 litres) must be stored in the cabinet in the chemical shed outside.

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Risk Assessments

- Remember to always take the ”worst case scenario” into consideration!
- Pay extra attention and make a new assessment when the context or process changes!
- Accidents happen when we are not alert! Often a series of circumstances lead to the (unthinkable) accident. Therefore:

  USE YOUR IMAGINATION, STAY ”CURIOUS” – INVOLVE COLLEAGUES AND WORK ENVIRONMENT GROUP… AND ME (SUSANNE ARNSTED)!

- Workshops in chemical risk assessments approx. once or twice a year.

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When Things Go Wrong and Reporting an Incident

→Accidents and near-miss accidents:

→Do you know what to do?
→What is our Alarm Procedure at SDU?

When Things Go Wrong

→If it's an accident that requires immediate assistance and warning / evacuation of others:

1. Follow the procedures / safety instructions for the relevant room / area
2. Follow the general alarm procedures
3. Follow procedures for critical event

→**Emergency Management plans are mandatory reading!**

→**Take note of "your" address(es)**

→Sønderborg: Alsion 2

→Odense: Several addresses!

→Use mobile phone if possible when calling 112 (geotagging)

Stands om muligt ulykken /
Limit the accident

Begræns skaden / Contain the damage

Ring 1-1-2. Oplys: /
Call 1-1-2. Tell them:

Hvad er dit navn / Your name
Hvad er der sket / What has happened
Hvor ringer du fra / Where you are calling from

Evakuer området om nødvendigt /
Evacuate the area if necessary

Aktiver varslingsanlæg hvis det forefindes / Activate any alarms
Alarmer dine omgivelser mundligt / Alert those in your vicinity as quickly as possible
Benyt nærmeste sikre udgang / Use the nearest safe exit

Ring 6550 8888 og informer SDU /
Call 6550 8888 and inform SDU

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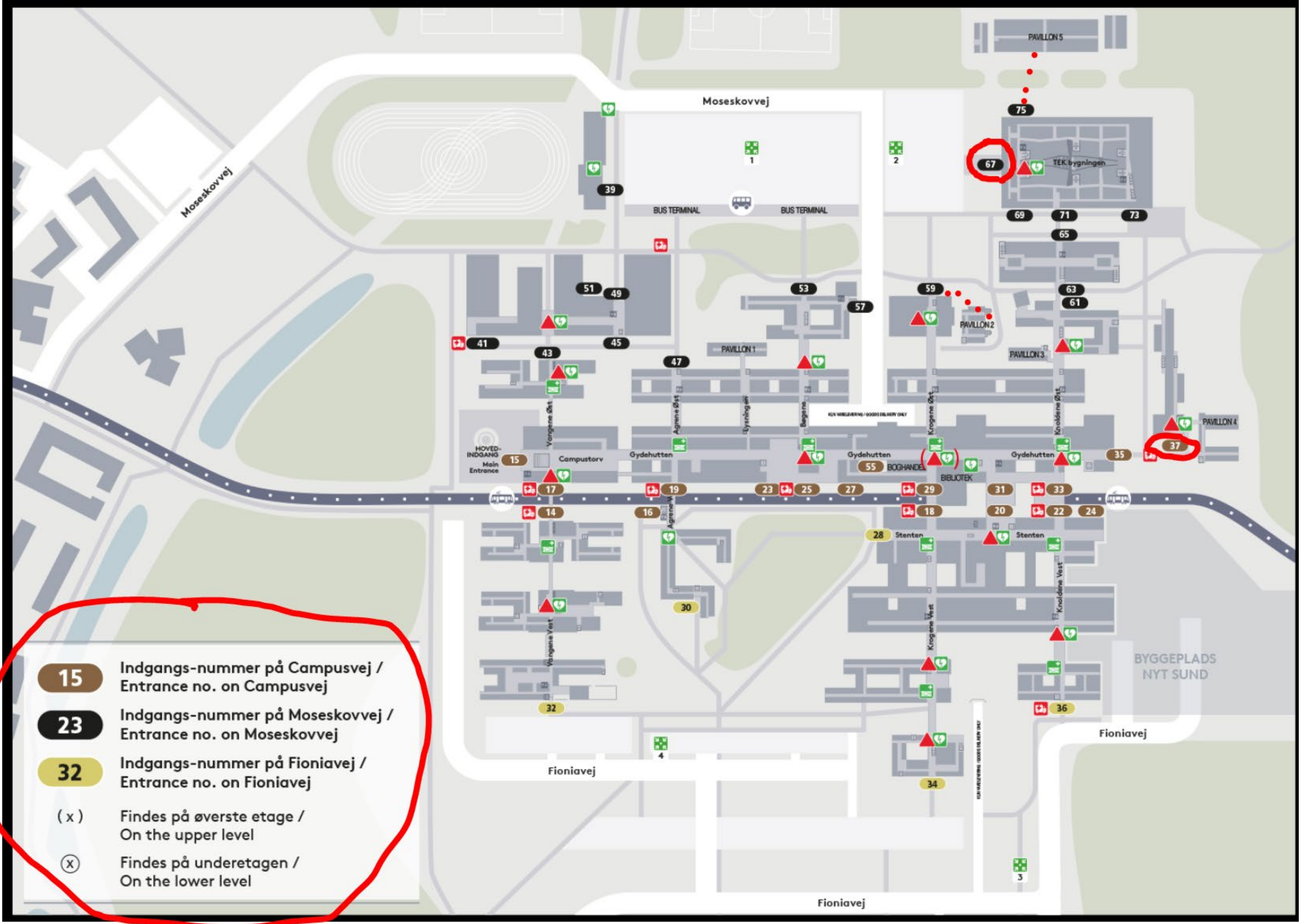
Moseskovvej
Moseskovvej
PAVILLON 5
TEK bygningen
BUS TERMINAL
BUS TERMINAL
PAVILLON 1
PAVILLON 2
PAVILLON 3
PAVILLON 4
HOVED-INDGANG
Main Entrance
Campustorv
Gydehutten
Gydehutten
Gydehutten
BOGHANDEL
BIBLIOTEK
Stenten
Stenten
BYGGEPLADS NYT SUND
Fioniavej
Fioniavej
Fioniavej
15 Indgangs-nummer på Campusvej / Entrance no. on Campusvej
23 Indgangs-nummer på Moseskovvej / Entrance no. on Moseskovvej
32 Indgangs-nummer på Fioniavej / Entrance no. on Fioniavej
(x) Findes på øverste etage / On the upper level
(x) Findes på underetagen / On the lower level

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Emergency Counselling

→Everybody can perform emergency counselling!

→Don’t be afraid to do something wrong – be afraid of doing nothing at all…!

→SDU Staff Psychologist

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I tilfælde af kritisk hændelse
In case of critical event

1. Følg Alarminstruksen
   Follow the Alarm procedures

2. Tilkald leder; hvis ikke tilgængelig, tilkald anden leder eller kollega for hjælp
   Call manager; if not available, call other manager or colleague for help

3. I laboratorier og værksteder: Tilkald lokaleansvarlig
   In labs and workshops: Call room responsible

4. Påbegynd kollegial omsorg:
   - Skab ro og tryghed
   - Hjælp chokerede kolleger med praktiske ting, herunder pårørendekontakt
   - Tal om det, der er sket – lyt
   - Sørg for at de ikke er alene efter ulykken
   - Sørg for at skadelidte og vidner til ulykke kan transporteres sikkert hjem

4. Start Acute collegial mental first aid:
   - Create a feeling of calm and security
   - Help shocked colleagues with practical tasks, including contact to close relations
   - Talk about what happened – listen
   - Ensure that they are not alone after the accident
   - Ensure that the injured person and witnesses can be transported home safely

Reporting an Incident: Accidents and Near-Misses

→If you detect an incident: Contact your immediate superior immediately, and also inform the Head of Department (if serious, HoD must inform the dean immediately)

→All incidents must be reported; please contact your Working Environment Group (alternatively Senior Advisor for Working Environment at TEK or SDU Working Environment Office)

→Please also remember psychological incidents like e.g. choc, sudden extreme stress etc.

→Doctors and dentists are legally obligated to report incidents / health problems that they suspect are work-related

→Remember to report near misses – a unique chance to learn and prevent actual accidents

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Health and Safety Groups at SDU

The Health and Safety Groups in the Health and Safety Organisation are made up of elected health and safety representatives and appointed management representatives, who are responsible for day-to-day health and safety tasks.

- The Central Administration
- The Faculty of Humanities
- The Faculty of Science
- The Faculty of Business and Social Sciences
- The Faculty of Health Sciences
- The Faculty of Engineering

The Health & Safety (W.E.) Organisation

→https://sdunet.dk/en/servicesider/hr/arbejdsmiljoe/arbejdsmiljoeorganisationen/arbejdsmiljoegrupper

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MCI

Working Environment Organisation

1. Your local working environment group:
   →Horst-Günter Rubahn
   →Sønderborg: Mogens Melskens Petersen
   →Odense: Jonas Beermann
   →Secr.: Sabina Petersen
2. Senior Advisor for Working Environment at TEK:
   → Susanne P. Arnsted, suar@tek.sdu.dk
3. SDU HR Development and Working Environment: Arbejdsmiljø mailbox, arbejdsmiljoe@sdu.dk

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MMMI

Working Environment Organisation

1. Your local working environment group:
   →Kasper Hallenborg
   →Annika Skjødt
   →Coordinator / Secretary: Maria Bergstedt → Julie Bebe-Hempler
2. Senior Advisor for Working Environment at TEK:
   → Susanne P. Arnsted, suar@tek.sdu.dk
3. SDU HR Development and Working Environment: Arbejdsmiljø mailbox, arbejdsmiljoe@sdu.dk

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DME

Working Environment Organisation

1. Your local working environment group:
   →Christian T. Veje
   →Odense: Jesper Bergholdt Sørensen
   →Sønderborg: Bente Olsen
   →Coordinator / Secretary: Kirsten Lorenzen

2. Senior Advisor for Working Environment at TEK:
   → Susanne P. Arnsted, suar@tek.sdu.dk

3. SDU HR Development and Working Environment: Arbejdsmiljø mailbox, arbejdsmiljoe@sdu.dk

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IGT

Working Environment Organisation

1. Your local working environment group:
   →Jens Ejbye Schmidt (Head of Institute)
   →Hanne Vestergaard Hemmingsen
   →Lars Duelund
   →Secretary: Mette K. Hansen

2. Senior Advisor for Working Environment at TEK:
   → Susanne P. Arnsted

3. SDU HR Development and Working Environment: Arbejdsmiljø mailbox, arbejdsmiljoe@sdu.dk

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ITI

Working Environment Organisation

1. Your local working environment group:
   →Peder Thusgaard Ruhoff
   →Odense : Henrik Brøner Jørgensen
   →Sønderborg, also Secretary: Jette Toft Iversen
2. Senior Advisor for Working Environment at TEK:
   → Susanne P. Arnsted, suar@tek.sdu.dk
3. SDU HR Development and Working Environment: Arbejdsmiljø mailbox, arbejdsmiljoe@sdu.dk

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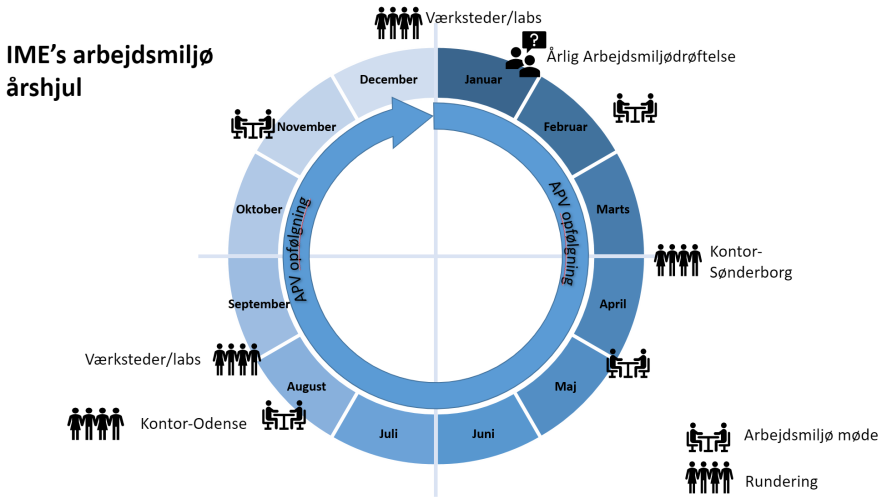
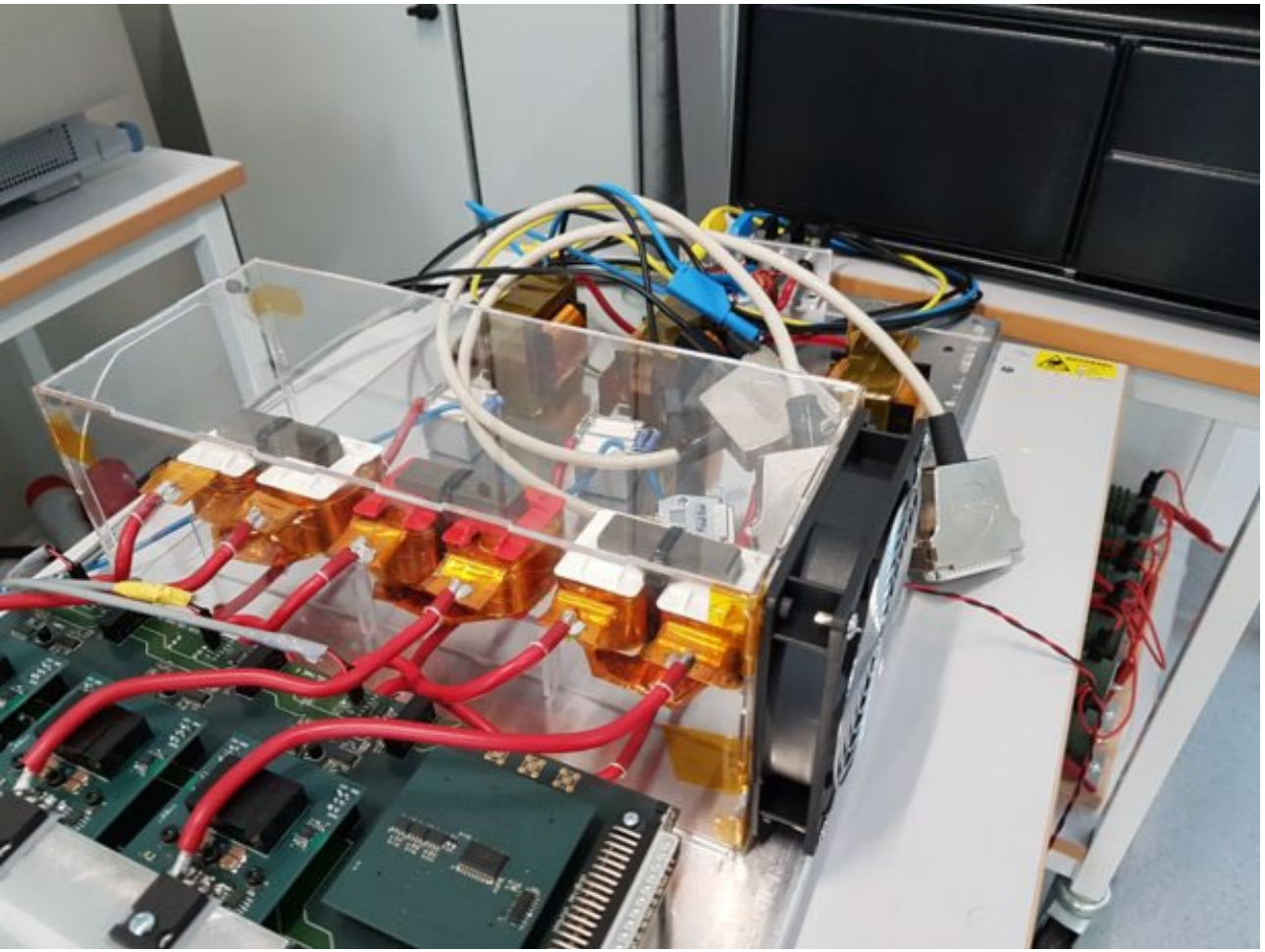
Working Environment Organisation Tasks

→Mainly a **facilitating** role:
→“Eyes and ears”!
→Planning, leading and coordinating the w. e. work, e.g.:
  →Meetings and processes (follow-up / communication / new initiatives)
  →Safety inspection rounds in labs, incl. ATEX inspections
    →Initiating amendments when needed
  →Office inspection rounds
  →Accelerating issues in the organisation when needed
  →Working environment and wellbeing surveys (APV)
    →helping carry them out and follow up
    →pushing issues to Technical Services or the units for you to act on
  →Reporting incidents, investigating and give input to corrective actions
  →Annual working environment dialogue
  →Emergency plans
  →…and more…





Current Focus Points

→Lacking risk assessments and safety instructions in some labs

→Electrical safety

→Follow up on Workplace Assessment and Wellbeing Survey (APV)

→E.g., indoor climate

→Lab policy regarding pregnancy etc. – coming soon

→Psychological working environment: wellbeing, personal flexibility balanced with work community, stress

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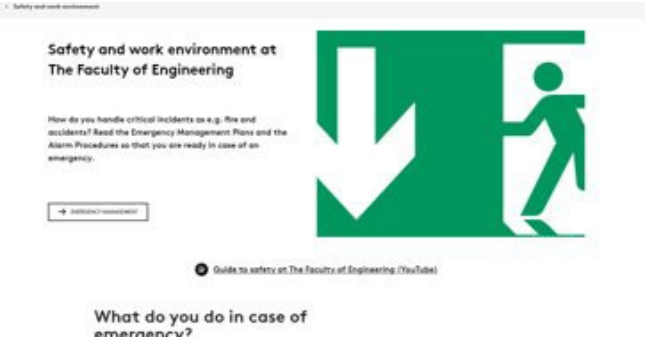
Useful Internal Info



→**Safety at TEK – landing page**:
  →EN: sdunet.dk/tek/safety
  →DA: sdunet.dk/tek/sikkerhed

→MS Teams (look in the folder ”Vejledninger - Guides” and go to ”Files”)

→Reporting incidents (accidents and near misses) – **contact your working environment group**!

→First aid and other courses (your manager must approve & pay): https://medarbejderkurser.sdu.dk/index.php

→SDU Staff Psychologist:
  →https://sdunet.dk/en/enheder/faellesomraade/analytics-medarbejderportal/personaleforhold_og_arbejdsmiljoe/arbejdsmiljoe/personalepsykolog

→SDUnet page about acquiring new equipment, requesting space & installations etc. – guidelines and templates:
  → https://sdunet.dk/en/enheder/fakulteter/teknik/praktisk-info-og-faciliteter/ombygninger-og-installationer

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External Links, Tools and Guidelines

→Maskindirektivet / The Machinery Directive

→About CE marking

→Kemibrug: https://www.kemibrug.dk/

→Arbejdstilsynet: www.at.dk / https://at.dk/en/ (Danish Working Environment Authority)

→BFA (BrancheFællesskaberne for Arbejdsmiljø): http://www.bfa-web.dk/
→Purchasing machines / equipment

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Your Hassle – My Interest! Contact Me!

→Susanne P. Arnsted
→TEK Senior Advisor for Health & Safety
→T: 6550 7378
→suar@tek.sdu.dk
→Odense, Ø28-507c-3

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