Welcome to course in Health, Safety and Environment (HSE)

HSE at NTNU and NV-faculty:  
Espen Fjærvik, HSE-advisor

First aid and fire protection:  
Midt-Norsk Sikkerhetsopplæring AS (MINSO)
Health, Safety and Environment at NV

Important objectives:

• Ensure a safe working environment and prevent accidents and injuries.

• Ensure that all leaders, employees, and students know their HSE responsibilities and have the knowledge and attitude needed to take care of these responsibilities.

• Include knowledge and awareness of HSE as an important part of the education and research at NT.
HSE training at NV-faculty

Main objective:

• Ensure that employees and students are given the necessary training in HSE to have a safe working environment

This course deals with:

• General HSE conditions at NTNU and NV
• First aid and fire protection

Specific HSE training for laboratory work is given at the departments
# Schedule, HSE-course

<table>
<thead>
<tr>
<th>Time</th>
<th>Place</th>
<th>Activity</th>
<th>Groups</th>
</tr>
</thead>
<tbody>
<tr>
<td>08:15</td>
<td>Auditorium R8</td>
<td>HSE at NTNU and NV</td>
<td>Common</td>
</tr>
<tr>
<td>10:00</td>
<td>Auditorium R8</td>
<td>First aid, theory</td>
<td>Common</td>
</tr>
<tr>
<td>11:30</td>
<td></td>
<td>Lunch break</td>
<td></td>
</tr>
<tr>
<td>12:00</td>
<td>Auditorium R8</td>
<td>First aid, tasks</td>
<td>Group A meet in R8</td>
</tr>
<tr>
<td>12:00</td>
<td></td>
<td>First aid, practical exercises</td>
<td>Group B meet in R8</td>
</tr>
<tr>
<td>12:30</td>
<td></td>
<td>First aid, practical exercises</td>
<td>Group A</td>
</tr>
<tr>
<td>12:30</td>
<td>Auditorium R8</td>
<td>First aid, tasks</td>
<td>Group B</td>
</tr>
<tr>
<td>13:05</td>
<td>Auditorium R8</td>
<td>Fire protection, theory</td>
<td>Common</td>
</tr>
<tr>
<td>14:10</td>
<td>Outside Rfb</td>
<td>Fire protection, practical exercises</td>
<td>Common</td>
</tr>
<tr>
<td>15:00</td>
<td></td>
<td>End</td>
<td></td>
</tr>
</tbody>
</table>

Rfb: Realfagbygget

Be sure that your participation is registered!
Laws, regulations and guidelines

**Legal rules**

- **Regulations (authority)**
  - **Laws** (Parliament)
    - Working Environment Act
    - Fire/explosion protection Act
  - **Regulations** (Government)
    - Workplace regulation
    - Handling of hazardous substances
  - **NTNU guidelines** (Rector)
    - Chemicals and gases
    - Risk assessment
  - **Local routines** (Dean, head of Dep.)
    - General and laboratory specific guidelines/routines

**Examples**

- Labour Inspection Authority
- DSB → Fire Department

**Regulatory authority**

- Responsible unit
  - NTNU
  - Faculty
  - Department
HSE-info and guidelines at NTNU

All information at innsida.ntnu.no

- **HMS, HSE**: Main website HSE

- **HMS ved NV**: (Norwegian) HSE-information and guidelines for NV-faculty
HSE duties and responsibilities

HSE responsibilities apply for **ALL** of us:

- HSE is the responsibility of managers at all levels.
  - ✓ The **Head of Department** has the overall responsibility of each department.
  - ✓ Anyone who **lead or supervise the work of other employees or students**, is responsible for ensuring that due care is taken to safety and health (AML §2-3-3).

- All employees and students have a **personal HSE responsibility**.

- Students participating in teaching or performing lab work, field work etc. that may involve risks, have the **same rights and obligations as employees with regard to HSE**.
HSE-RESPONSIBILITY:

DEPARTMENT OF METAPHYSICS (IMF)

«I have the overall HSE-responsibility at IMF»

HSE-coordinator
HR-consultant

GROUP 1

STAFF

STUDENTS

EQUIPMENT, INFRASTRUCTURE

GROUP 2

FULFILL HSE-REQUIREMENTS

CREATE GOOD HSE-CULTURE
Personal HSE responsibility

Everyone has a duty to cooperate (Working Environment Act)

✓ Assess the risks involved in their own work, plan and carry out the work in a safe manner
✓ Be aware of and comply with existing HSE guidelines.
✓ Use required protective equipment.
✓ Report errors/accidents/injuries/dangerous conditions.
✓ Contribute actively to a good and safe working environment
What are the success criteria for good HSE practices?

• Cooperation, participation, inclusion
• Information and training, motivation
• Share and learn from experience
• Good **HSE practice** is a result of the sum **actions** performed.
• The actions are carried out by **individuals** and controlled by their **attitudes**

**HSE-culture**
The HSE division at NTNU

**HSE section** at NTNU

- Branch for Health, Safety and Environment
- Administration and development of HSE system at NTNU (substance index, HSE-problem reporting/risk assessment system, room card information database)
- Organizes courses and workshops within various HSE fields
- HSE reporting to the Board, Rector, the Work Environment Committee (AMU)
- Handling of cases relating to HSE

**Occupational Health Service (BedriftsHelseTjeneste, BHT)**

- The [Occupational Health Service](#) has a free and independent position.
- Impartial advisor related to CASE, not to side (in a conflict). Duty of confidentiality.
- Areas Of Expertise:
  - Occupational hygiene
  - Organizational and psychosocial work environment
  - Ergonomics
  - Occupational Medicine / health
HSE-roles at the NV faculty

• At the NV faculty, specific HSE-responsibilities and task have been assigned to different roles  
  - Manager / Head of Department (overall HSE-responsibility)
  - HSE-coordinator *(HMS-koordinator)*
  - HR-consultant
  - Room responsible *(romansvarlig)*
  - Substance database representative *(Stoffkartotek-kontakt)*
  - Dangerous /chemical waste representative *(kontaktperson farlig avfall)*
  - Radiation protection representative *(Strålevernskoordinator)*
  - Gas coordinator
  - Safety Representatives *(verneombud)*

• Further description of responsibilities for different HSE tasks at the departments/units:  
  - [HMS ved NV](#)
Safety representatives at NTNU

• Safety representatives (Verneombud-VO)
  – Elected by employees at each department/unit.

• Local senior safety representatives (LHVO - faculty)
  May Grete Sætran, IKP

• Senior safety representative (HVO - NTNU)
  Heidi Egseth. Present in the NTNU Working Environment Committee (AMU)

Innsida: Find your safety representative
Safety- and trade union representatives; – roles and tasks

• Safety representatives
  ✓ Represent the employees in HSE-related issues to safeguard their interests. Role defined in the Working Environment Act.
  ✓ Have a duty to notify the manager about dangerous conditions/ violation of laws etc. Shall be informed about HSE-issues/problems.
  ✓ Have the right to stop dangerous work.
  ✓ Shall be involved in systematic HSE-work

• Trade union representatives
  ✓ Ensure the employee's interests according to contracts and collective agreements
  ✓ Role is regulated by agreement, not law.
  ✓ Do not have the duty to report a case to management

Personnel matters and wage disputes are normally not tasks for the safety representative. The employee should speak with their union representative.
What is HSE work?

- Ensure a satisfactory work environment
- **Systematic work** aimed at continuous improvement

HSE work at NTNU should be carried out continuously and systematically - At all levels, integrated in daily work
HSE-problems and discrepancies: WHAT is it?

- Incidents causing harm to PEOPLE, environment, materials
- Dangerous situations or near accidents
- Violence and threats
- Violation of guidelines/ laws and regulations
- You can also report suggestions for improvement related to HSE
**WHY** report HSE-problems?

**LEARN** from the incident

**PREVENT** new similar incidents

**IMPROVE**

Because it actually **WORKS**!

Duty to cooperate = duty to report
HOW to report HSE-problems

https://innsida.ntnu.no/hms

- Norwegian and English version and user guide
- The report goes to the case handler (HSE-coordinator) at your unit
- Questions or problems: HSE Coordinator at your unit can help you
- You can always go into the system and follow your case
- If you are in doubt whether to report a problem: DO IT!
Whistleblowing

Notification of unacceptable conditions

Whistleblowing is to report violations of:
• Laws and regulations
• Ethical standards
• Serious matters that might harm the University or society

You may notify your leader (nearest or higher), safety representative, or union representative.

Employees are protected against retaliation in accordance with the Working Environment Act (§ 2-5).

NTNUs guidelines: Whistleblowing
The working environment is made up of many factors.

**WORKING ENVIRONMENT**

**Physical**
- Air quality, light, noise, chemicals, radiation
- Equipment
- Work Processes
- Safety barriers, protective equipment

**Psychosocial**
- Communication, collaboration,
- Affiliation
- Socializing and meeting points
- Control over own work situation
- Culture. Your contribution counts!

**Organizational**
- Communication, collaboration,
- Affiliation
- Socializing and meeting points
- Control over own work situation
- Culture. Your contribution counts!

**Training and information**
- Confidence/safety
- Motivation and meaning

**WORKING ENVIRONMENT Act:**
Should be "fully satisfactory" with respect to factors that may affect the employees' physical and mental health and welfare.

---

Norwegian University of Science and Technology
Conflict prevention and handling

As an employee, you are protected from violations of your dignity through the Work Environment Act and the Discrimination Act.

NTNU has guidelines for handling harassment, unacceptable behavior and conflicts:

✓ Employee's duty to avoid offensive behavior and actively contribute to a good working environment.
✓ The employer's obligation with respect to leading and organizing the work to ensure a good work environment and prevent conflicts.
✓ How to proceed in order to report unacceptable behavior / harassment.
✓ How severe personal conflicts and harassment should be handled.

NTNU guidelines concerning Sexual harassment
Exercise during work hours

NTNU employees can exercise 1 hr./ week during working hours.

Exercise during working hours has two primary objectives;

✓ Contribute to a good working environment
✓ Strengthen the health of employees

The main rule is that your workout should be an organized and shared activity.

Voluntary!

https://innsida.ntnu.no/trening-ansatte
Emergency preparedness plans

• Emergency preparedness means being prepared when something happens

• Everyone can have a role in an emergency situation as the one detecting an incident and must know the routines for notification.

• Many may have an important role in providing information about the situation and local conditions.
  
  Responsible for room/evacuation/gas-system, HSE-coordinator, radiation protection coordinator, substance database contact, HR-consultant

Emergency preparedness at NTNU

Emergency
Notification of Incident/accident

You discover the incident

Emergency numbers
110 Fire
112 Police
113 Ambulance

Emergency? Yes

First Aid?
Secure the scene?

No contact?
Notify nearest leader

See back of keycard

Call for assistance
NTNU guard 918 97 373
Technical emergency 918 97 335

NTNU emergency 800 80 388

Save the relevant numbers for notification of emergencies on your phone!

Notification list - NV

Norwegian University of Science and Technology
Always prepared?

Things to consider....

- **YES**, accidents **MAY** happen also here...............**RISK ACKNOWLEDGEMENT**
- Can we **DO** what’s needed if something happens?...........**CAPASITY TO ACT**
- What can my **OWN ROLE** be in an emergency?.................**AM I PREPARED?**
Risk assessment
- systematic handling of risks

• What should be assessed? (*danger source, object*)
• What can go wrong? (*unwanted incidents*)
• Why can it go wrong? (*causes*)
• What is the *likelihood*?
• What could be the *consequences*?
• What's so far been done? (*existing measures*)
• Is the risk acceptable? (*acceptance criteria*)
• What more can we do? (*new measures/safety barriers*)
Evaluation and quantification
Risk acceptance criteria

Consequence \times \text{Likelihood} = \text{Risk value}

The colors indicate the degrees of risk:
- **Red**: Unacceptable risk. Measures must be implemented.
- **Yellow**: Assessment area. Measures to be considered.
- **Green**: Acceptable risk. Measures can be considered.
Risk assessment process

• To be carried out for all activity involving risks, before start and before significant changes in an existing activity
• Digital system (Risk Manager: presently not working)
• Obtain knowledge of activity (on-site inspection/demonstration)
• Gather all relevant information (data sheets, manuals, etc…)
• “Brainstorming” - what can go wrong and why?
• Describe the risks of all relevant adverse incidents
• Determine and implement measures to reduce the risks
• Consider the end result - are the risks acceptable?

Innsida: https://innsida.ntnu.no/web/guest/wiki/-/wiki/English/Risk+assessments
## Categories of signs

<table>
<thead>
<tr>
<th>Category</th>
<th>Image</th>
<th>Text</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Mandatory</strong></td>
<td><img src="image" alt="Eye Protection" /></td>
<td>Eye protection mandatory for anyone in eye protection lab. See <a href="#">Eye protection instruction for NV faculty</a></td>
</tr>
<tr>
<td><strong>Prohibitory</strong></td>
<td><img src="image" alt="No Cell Phone" /></td>
<td></td>
</tr>
<tr>
<td><strong>Danger/warning</strong></td>
<td><img src="image" alt="Explosion" /></td>
<td></td>
</tr>
<tr>
<td><strong>Fire fighting</strong></td>
<td><img src="image" alt="Fire Extinguisher" /></td>
<td></td>
</tr>
<tr>
<td><strong>Evacuation</strong></td>
<td><img src="image" alt="Exit" /></td>
<td></td>
</tr>
</tbody>
</table>
Room cards

**Romkort**

- Responsible unit (*hovedvirksomhet*)
- Responsible for room (*romansvarlig*)
- Manager (*linjeleder*)
- Emergency/Guard
- Type of activity and risks
- Gas and flammable liquids
- Verification date
Substance database
(«Stoffkartotek»)

- All chemicals, dangerous substances and gases shall be registered and risk assessment performed in the substance database (EcoOnline) before use.
- Safety data sheets for chemicals/substances are obtained from the substance database. Read this before you start using the chemical!
- Ordering of chemicals shall be done by the Purchasing representatives. This applies for all kinds of goods.
- Information and logon for Substance database
## Schedule, HSE-course

<table>
<thead>
<tr>
<th>Time</th>
<th>Place</th>
<th>Activity</th>
<th>Groups</th>
</tr>
</thead>
<tbody>
<tr>
<td>08:15</td>
<td>Auditorium R8</td>
<td>HSE at NTNU and NV</td>
<td>Common</td>
</tr>
<tr>
<td>10:00</td>
<td>Auditorium R8</td>
<td>First aid, theory</td>
<td>Common</td>
</tr>
<tr>
<td>11:30</td>
<td></td>
<td>Lunch break</td>
<td></td>
</tr>
<tr>
<td>12:00</td>
<td>Auditorium R8</td>
<td>First aid, tasks</td>
<td>Group A meet in R8</td>
</tr>
<tr>
<td>12:00</td>
<td></td>
<td>First aid, practical exercises</td>
<td>Group B meet in R8</td>
</tr>
<tr>
<td>12:30</td>
<td></td>
<td>First aid, practical exercises</td>
<td>Group A</td>
</tr>
<tr>
<td>12:30</td>
<td>Auditorium R8</td>
<td>First aid, tasks</td>
<td>Group B</td>
</tr>
<tr>
<td>13:05</td>
<td>Auditorium R8</td>
<td>Fire protection, theory</td>
<td>Common</td>
</tr>
<tr>
<td>14:10</td>
<td>Outside Rfb</td>
<td>Fire protection, practical exercises</td>
<td>Common</td>
</tr>
<tr>
<td>15:00</td>
<td></td>
<td>End</td>
<td></td>
</tr>
</tbody>
</table>

Rfb: Realfagbygget
First Aid and Fire Protection

First aid:
Start 12:00  Be precise!

Fire protection:
Start 13:05, auditorium R8
Fire exercises outside Realfagbygget

Bring clothes for outdoor activities!