

Ohje materiaalin hakemiseen itsin kirjastosta

Kurssi: Physical and chemical phenomena and their application 2 cp

Avuksi hakemiseen:

Avainsanat:

- Vierko
- Physical and chemical phenomena and their application
- Physics TAI chemistry
- Task (numero)
- Suunnitelman nimi esim. Mechanics tai Energy

Suodatin:

- fysiikka tai
- kemia





Tekijät:




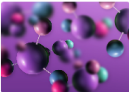

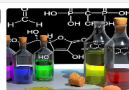


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Suunnitelmien yleisnäkymä järjestyksessä

The screenshot shows a web interface for course planning. At the top, there are navigation tabs: "Physical and chemical phenomena and their application 2 cp", "Yleiskatsaus", "Suunnitelmat", "Resurssit", "Raportit", and "Osallistujat". Below the tabs, there is a header area with "Luo suunnitelma >", a dropdown menu "Toimet", and a button "Käytä valmiita sisältöjä". On the right side of the header, there is a "Taulukkonäkymä" button. The main content area displays a list of four course modules, each with a checkbox, a small image, a title, a description, and a resource count:

-  **1. Course overview**
Welcome to study physics and chemistry! The course introduces key concepts in physics and their application in everyday life and the workplace. In the chemistry section, students will explore common substances used in the field, their properties, and how to handle them safely. Learning Objectives and Assessment Criteria Some topics covered in this course may need to be understood more thoroughly in your specific field
1 resurssi
-  **2. Units and quantities** PHYSICS
The goal is to learn: concepts: SI units, quantity, unit symbols of quantities and units
4 resurssia
-  **3. Mechanics** PHYSICS
The goal is to learn: concepts of physics related to mechanics (e.g. motion, force, work) to solve simple mechanical problems mathematically to observe fundamental mechanical phenomena Think! Is some area of mechanics essential in your field of study?
6 resurssia
-  **4. Energy** PHYSICS
The goal is to: learn about different forms of energy understand the concepts of direct and indirect energy consumption learn how to calculate efficiency Think! Are new energy sources and forms of energy relevant for your field of study and do they have decisive influence for the development of your field?
3 resurssia

	<p>5. Thermodynamics CHEMISTRY</p> <p>The goal is to learn: physical concepts related to thermodynamics to recognize different methods of heat transfer Think! How and where is your field of study related to thermodynamics and heat transfer?</p> <p>4 resurssia</p>
	<p>6. Electricity CHEMISTRY</p> <p>The goal is to learn: physical concepts related to electricity to recognize electrical safety issues related to your own field of work Think! What kind of electrical safety issues do you need to know in your own field of work?</p> <p>3 resurssia</p>
	<p>7. Chemical safety CHEMISTRY</p> <p>The goal is to learn: the concept of a "hazardous chemical" to read a safety data sheet what are TVATM symbols and H-statements what hazardous chemicals are used in your field Think! Are hazardous chemicals handled more frequently in your field?</p> <p>3 resurssia</p>
	<p>8. Structure and properties of matter CHEMISTRY</p> <p>The goal is to learn: what is the difference between mixtures and pure substances properties of matter how do you read the periodic table structure of matter Think! Do you need to identify elements and compounds in your field?</p> <p>11 resurssia</p>
	<p>9. Chemical reaction CHEMISTRY</p> <p>The goal is to learn: Chemical reactions Combustion Properties of metals Atomic bonding Oxidizing and reduction reactions Acids and bases Think! Do these chemical phenomena have an above-average importance in your field? What kind of chemical phenomena do you deal with daily?</p> <p>7 resurssia</p>
	<p>10. Concentration CHEMISTRY</p> <p>The goal is to learn: What does the chemical quantity mass percentage mean? What does the chemical quantity volume percentage mean? How to calculate mass percentages? How to calculate volume percentages? Think about it! In what situations do you calculate concentration in your work?</p> <p>5 resurssia</p>
	<p>11. Amount of substance CHEMISTRY</p> <p>The goal is to learn: What means amount of substance? How to calculate the amount of substance? How to calculate the mass when the amount of substance is known? Think about it! In what situation in your job it is important to know what amount of substance means?</p> <p>6 resurssia</p>
	<p>12. Demonstration of knowledge</p> <p>Assessment criteria The student recognizes key physics concepts and applies them in everyday life and work. The student considers chemical substances and their properties in their work. The student evaluates their knowledge of physics and chemistry in their field.</p> <p>3 resurssia</p>

Suunnitelmien johdantotekstit:

1. Course overview

Welcome to study physics and chemistry!

The course introduces key concepts in physics and their application in everyday life and the workplace. In the chemistry section, students will explore common substances used in the field, their properties, and how to handle them safely.

Learning Objectives and Assessment Criteria

Some topics covered in this course may need to be understood more thoroughly in your specific field than what is presented in this introductory course, while others may not be as relevant to your area of study. Experimental work in physics and chemistry will be conducted in elective studies, but within your field, you may perform tasks and measurements that require knowledge of physics and/or chemistry. Therefore, consider for each topic whether it is essential in your field and which job tasks require this theoretical knowledge. The entrance exams and studies in university of applied sciences for technical fields require proficiency in physics calculations, so this will be practiced particularly in the area of mechanics.

Further information about compulsory competence requirements: eRequirements

The course consists of theory sections with exercises, assignments, and tests. You can progress through the course entirely at your own pace and track your progress using the Progress Tracking block on the right side of the page.

The course grade will be based on the tasks and exams in the Demonstrate Your Competence section.

The use of artificial intelligence (AI) is not allowed in any tasks or exercises.

2. Units and quantities

The goal is to learn:

- concepts: SI units, quantity, unit
- symbols of quantities and units

3. Mechanics

The goal is to learn:

- concepts of physics related to mechanics (e.g. motion, force, work)
- to solve simple mechanical problems mathematically
- to observe fundamental mechanical phenomena

Think! Is some area of mechanics essential in your field of study?

4. Energy

The goal is to:

- learn about different forms of energy
- understand the concepts of direct and indirect energy consumption
- learn how to calculate efficiency
-

Think! Are new energy sources and forms of energy relevant for your field of study and do they have decisive influence for the development of your field?

5. Thermodynamics

The goal is to learn:

physical concepts related to thermodynamics
to recognize different methods of heat transfer

Think! How and where is your field of study related to thermodynamics and heat transfer?

6. Electricity

The goal is to learn:

- physical concepts related to electricity
- to recognize electrical safety issues related to your own field of work

Think! What kind of electrical safety issues do you need to know in your own field of work?

7. Chemical safety

The goal is to learn:

- the concept of a "hazardous chemical"
- to read a safety data sheet
- what are TVATM symbols and H-statements
- what hazardous chemicals are used in your field

Think! Are hazardous chemicals handled more frequently in your field?

8. Structure and properties of matter

The goal is to learn:

- what is the difference between mixtures and pure substances
- properties of matter
- how do you read the periodic table
- structure of matter

Think! Do you need to identify elements and compounds in your field?

9. Chemical reaction

The goal is to learn:

- Chemical reactions
- Combustion
- Properties of metals
- Atomic bonding
- Oxidizing and reduction reactions
- Acids and bases

Think! Do these chemical phenomena have an above-average importance in your field?
What kind of chemical phenomena do you deal with daily?

10. Concentration

The goal is to learn:

- What does the chemical quantity mass percentage mean?
- What does the chemical quantity volume percentage mean?
- How to calculate mass percentages?
- How to calculate volume percentages?

Think about it! In what situations do you calculate concentration in your work?

11. Amount of substance

The goal is to learn:

- What means amount of substance?
- How to calculate the amount of substance?
- How to calculate the mass when the amount of substance is known?

Think about it! In what situation in your job, it is important to know what amount of substance means?

12. Demonstration of knowledge

Assessment criteria

- The student recognizes key physics concepts and applies them in everyday life and work.
- The student considers chemical substances and their properties in their work.
- The student evaluates their knowledge of physics and chemistry in their field.