VELEUČILIŠTE U RIJECI
UNIVERSITY OF APPLIED SCIENCES RIJEKA

ENGLISH LANGUAGE II
FOR THE SECOND YEAR STUDENTS OF OCCUPATIIONAL SAFETY

STUDENT'S BOOK

Tatjana Šepić

Rijeka 2023.

veleri

Dr. sc. human. TATJANA ŠEPIĆ, prof. struč. stud.

ENGLISH LANGUAGE II FOR THE SECOND YEAR STUDENTS OF OCCUPATIONAL SAFETY

Nakladnik: Veleučilište u Rijeci,
Trpimirova 2/V, Rijeka

*Za nakladnika***:** mr. sc. Marino Golob, v. pred.

Recenzenti:

prof. dr. sc. Renata Šamo, Filozofski fakultet, Sveučilište Jurja Dobrile, Pula
izv. prof. dr. sc. Martina Bajčić, Pravni fakultet, Sveučilište u Rijeci

Lektorica:
Sanda Španjol-Pandelo, prof.

Naklada: *online* izdanje

ISBN: 978-953-8286-08-7

Povjerenstvo za izdavačku djelatnost Veleučilišta u Rijeci odobrilo je izdavanje ovog udžbenika (KLASA: 003-09/23-01/09, URBROJ: 2170-57-01-23-35/MJG).

TATJANA ŠEPIĆ

ENGLISH LANGUAGE II

FOR THE SECOND YEAR STUDENTS OF OCCUPATIONAL SAFETY

Veleučilište u Rijeci / University of Applied Sciences Rijeka

Rijeka, 2023.

CONTENTS

Part One

About Workplace Hazards in General 4

Unit 1 The Most Common Workplace Hazards 4

Unit 2 Examples of Workplace Hazards (Part One) 8

Unit 3 Examples of Workplace Hazards (Part Two) 12

Part Two

Storage, Transportation of Hazardous Materials/Disposal of Hazardous Waste 18

Unit 4 Hazardous Materials Storage 18

Unit 5 The Transport of Hazardous Goods 22

Unit 6 Transport of Hazardous Waste and its Disposal 26

Part Three

Occupational Medicine and Diseases 31

Unit 7 Occupational Medicine 31

Unit 8 Occupatioal Disease (Part One) 35

Unit 9 Occupatioal Disease (Part Two) 39

Part Four

Some Physical and Psychosocial Aspects of the Work Environment 44

Unit 10 Temperature at Work 44

Unit 11 Bullying/ Mobbing in the Workplace 48

Unit 12 How Does Working Overtime Impact Workers? 54

Part Five

Safety in the Hotel Indutry & Quality Assurance (QA) 60

Unit 13 Health and Safety in the Hotel Industry 60

Unit 14 The Most Important Safety Procedures in a Hotel 65

Unit 15 Quality Assurance (QA) 70

Glossary 76

English-Croatian Glossary /Englesko-hrvatski rječnik stručnog nazivlja 87

Sources 93

Part One – About Workplace Hazards in General

Unit 1

The Most Common Workplace Hazards

I Warm up

Do you work? If you do, think of all possible hazards related to your workplace!
If you don't work, try and make a list of the most common hazards that occur in different workplaces!

II Read the text and check your answers.

Risk Assessment and Identifying Workplace Hazards

To complete the first step in any workplace risk assessment, you must identify the hazards in your workplace. Every workplace has hazards and, although there will be a nominated person for conducting formal risk assessments, it is still everyone's responsibility to be mindful of hazards in the workplace and minimise risk of harm. Not all hazards are obvious and they will be unique to your workplace. This can make it difficult to immediately identify and protect your employees from them. This is a guide to help you understand the different categories of hazards and where they might be present.

What Are the Most Common Hazards in a Workplace?

The words 'risk' and 'hazard' are often used interchangeably. However, if you are responsible for managing the health and safety in your workplace, it's important that you understand the difference between them.
Hazards are anything that can cause harm, damage or adverse health effects to people in the workplace. A risk, on the other hand, is the likelihood of a person being injured or experiencing an adverse health effect if exposed to a hazard. When you consider the degree of risk that a hazard poses to your employees or yourself, you must bear in mind the following factors that can influence risk:

- **The frequency of exposure.** *Are your workers exposed to the hazard once a day or once a year?*
- **The route of exposure.** *How are your workers exposed? Do they breathe in vapours or is it through skin contact?*
- **How severe the injury or adverse health effect of exposure is.** *Has the exposure affected the worker causing lung irritation or lung cancer?*

This text focuses on hazards, including where they might be found in different workplaces. It also provides you with a range of further resources to make your risk assessment process as smooth as possible.

The six main categories of hazards are:

• Biological.

Biological hazards include viruses, bacteria, insects, animals, etc., that can cause adverse health impacts. For example, mould, blood and other bodily fluids, harmful plants, sewage, dust and vermin.

• Chemical.

Chemical hazards are hazardous substances that can cause harm. These hazards can result in both health and physical impacts, such as skin irritation, respiratory system irritation, blindness, corrosion and explosions.

• Physical.

Physical hazards are environmental factors that can harm an employee without necessarily touching them, including heights, noise, radiation and pressure.

• Safety.

These are hazards that create unsafe working conditions. For example, exposed wires or a damaged carpet might result in a tripping hazard. *These are sometimes included under the category of physical hazards.*

• Ergonomic.

Ergonomic hazards are a result of physical factors that can result in musculoskeletal injuries. For example, a poor workstation setup in an office, poor posture and manual handling.

• Psychosocial.

Psychosocial hazards include those that can have an adverse effect on an employee's mental health or wellbeing. For example, sexual harassment, victimisation, stress and workplace violence.

How to Manage Hazards in Your Workplace

If you neglect your responsibility to protect your employees, you could face financial and/or custodial penalties. Therefore, it's vital that you properly manage all your workplace hazards. Besides identifying and considering hazards, it is important to take further steps to protect you employees. For example, you should:

- carry out an appropriate risk assessment for the nature of the work and hazards.
- introduce appropriate control measures**.** Once you have completed your risk assessment, you must introduce controls to reduce or eliminate the identified hazards. For example, you may be able to avoid work at height completely when window cleaning by using extension poles or, if those are inappropriate, you could reduce the risks by installing fall prevention equipment.
- appropriately train all your employees in their duties. All employees should have appropriate Health and Safety Training or Office Safety Training, in addition to training for any specific workplace hazards.

  (Adapted from *A Guide to the Most Common Workplace Hazards*, 2019)

III Answer the following questions:

1. What is the relationship between risk assessment and workplace hazards?
2. What is the difference between a risk and a hazard?
3. What are the three factors that can influence risk?
4. Can you name six main categories of hazards and explain them briefly!
5. What can happen if you as employer neglect your responsibility to protect your employees?
6. Are there any additional measures/steps you can take in order to protect your workers and ensure safe working environment?

IV Match the verbs in column A with the most appropriate word(s) in column B:

A	B
1 to conduct	a) an employee
2 to harm	b) a formal assessments
3 to face	c) the degree of risk
4 to pose	d) (un)safe working conditions
5 to create	e) financial penalties

V Find the words in the text that mean:

1 the action of making a person a victim; singling out someone for punishment or unfair treatment

2 take air into lungs and send it out again; exhale/inhale

3 taking heed or care, careful, alert, attentive

4 relating to the muscles and skeleton and including bones, joints, tendons and muscles

5 parasitic worms or insects; mammals and birds harmful to game, crops, etc.

VI Underline the word in each group that does not belong there:

1 ergonomics, musculoskeletal injuries, viruses, awkward postures, a poor workstation setup

2 asthma, blindness, respiratory illnesses, lung irritation, lung cancer

3 tripping, slipping, falling, walking, stumbling

4 sprains, bruises, concussions, remedy, fractures, injury

5. irritable, adverse, harmful, beneficial, unsafe, hazardous

VII Write the opposites of the following adjectives:

1 manual (for e.g. handling of smth.) ≠

2 smooth ≠

3 formal ≠

4 obvious ≠

5 mental (e.g. health) ≠

VIII Make nouns from the following verbs:

1 to extend

2 to consider

3 to train

4 to neglect

5 to corrode

Unit 2

Examples of Workplace Hazards (Part One)

Warm up

I Do you remember some biological and chemical hazards mentioned in the previous unit? Can you add a few more to the list?

II Read the text carefully and complete your list with biological and chemical hazards:

Biological Hazards

Biological hazards include viruses, bacteria, insects, animals, etc., that can cause adverse health impacts. These health impacts can range from skin and respiratory system irritation, to the transmission of infections**.** Some biological hazards include: *blood-borne* diseases, including HIV, hepatitis B and C, and malaria.

Blood-borne diseases are viruses or bacteria that can be transmitted through contact with infected blood or bodily fluids. Those most at risk from *blood-borne* diseases are those working in the healthcare sector, for example, doctors, nurses and dentists. However, many other professions can be at risk, such as cleaners, waste and refuse collectors, street cleaners, park keepers and tattoo artists. Simply put, anyone who might encounter sharps at work is at risk. Incidents that pose a risk for *blood-borne* disease transmission can have serious health and psychological impacts.

Bacteria, moulds and fungi

Improperly managed work environments can make your work premises the ideal environment for bacteria, moulds and fungi to thrive, such as Legionella bacteria. Exposure to bacteria, moulds and fungi can result in severe health impacts, such as Legionnaire's disease and respiratory disorders, and could exacerbate allergies. Workplaces most at risk include spa pools, textile and print industries, and paper manufacturing, however any humid work environment can be at risk.

Flour, milk powder or grain dusts

Exposure to organic dusts can result in severe health impacts, including respiratory irritation and occupational asthma. Those at risk include individuals working in food manufacturing and preparation, such as in a bakery.

Other organic dusts

The deterioration of building materials, as well as building, construction and agricultural activities, can expose workers to a range of organic dusts, moulds and bacteria – including clay and straw dust. Exposure to these can result in exacerbation of allergies, respiratory and skin irritation, among other health impacts.

Exposure to animals and vegetation

For example, those working in agriculture or horticulture, people working in zoos or as dog handlers, are at risk of encountering bacteria, fungi, viruses and mites off the animals and vegetation they work around. If not properly controlled, this exposure can result in a range of health impacts, including allergic diseases such as farmer's lung.

Chemical Hazards

Chemical hazards are hazardous substances that can cause harm. They can be very dangerous but might not always be immediately identifiable in the workplace. For example, when considering who may be at risk, you might not immediately think of hairdressers, florists, cleaners, waiters, bartenders, or nail technicians.

Examples of substances that pose a chemical hazard include:

Cleaning chemicals

Cleaning chemicals are used in almost every workplace to maintain good hygiene standards. Incorrect use of cleaning chemicals can have serious impacts, including allergic reactions, asthma and respiratory irritation, dermatitis and skin or eye burns.

Hair dye, shampoos, conditioners and henna products

These are all substances that we safely use at home without considering the risks. However, hair dye, shampoos, conditioners and henna products, among other substances regularly found in hair and beauty salons, can have serious health impacts if you don't take the proper precautions.

Nail glue, nail polish remover, primers and artificial nails, etc.

Incorrect use and storage of these substances can result in a range of serious health and safety risks. For example, skin and respiratory irritation, headaches, dizziness, sickness, occupational asthma, cancer and fire hazards.

Welding fumes

Welding activities pose many hazards, including exposure to invisible gaseous fumes. These fumes include ozone, nitrogen oxides, chromium and nickel oxides, and carbon monoxide. Exposure to these gases can cause serious health impacts, including pneumonia, occupational asthma, cancer, metal fume fever and respiratory irritation. If not properly controlled, the fumes can impact the welder and anyone working in the vicinity.

(Adapted from *A Guide to the Most Common Workplace Hazards*, 2019)

III Answer the following questions:

1 Name some biological hazards! What consequences may they have on human health?
2 What is a blood-borne disease? How can it be transmitted?
3 Which occupations expose workers to blood-borne diseases most?
4 What are some health problems/diseases people may have if exposed to bacteria, moulds and fungi?
5 What is organic dust? Why is it dangerous for human health?
6 What kind of health risks do people working with animals, or in agriculture and horticulture encounter?
7 What are chemical hazards?
8 What kind of adverse health reactions can cleaning chemicals provoke?
9 Name some substances that we use at home that can be risky/have serious health impact if not handled properly?
10 What are welding fumes? Are they dangerous only for the welder?

IV Find three illnesses in the text for each of the following headings:

respiratory illnesses
blood-borne diseases
skin conditions/diseases

V Which verbs go with the following expressions?

1 _____ the risk

2 _____ harm

3 _____ hazardous substances

4 _____ allergies

5 _____ an infection

6 _____ sharps

VI Make adjectives from the following nouns:

1 gas _____

2 allergy _____

3 environment _____

4 infection _____

5 dizziness _____

VII Provide a synonym or a short explanation for the following words:

1 vicinity

2 dye

3 substance

4 premises

5 precaution

VIII Use the Internet or some other reliable source to find out more about the following health problems (causes, symptoms, treatment, prevention, etc.). Make notes and share the information with your colleagues:

- metal fume fever
- farmer's lung
- Legionnaire's disease

Unit 3

Examples of Workplace Hazards (Part Two)

I Warm up

1 Can you give a few examples of physical hazards?

2 What do you think would be ergonomic hazards? And psychosocial hazards?

3 In what way do physical hazards differ from biological and chemical ones?

4 Are physical, psychosocial and ergonomic hazards in any way connected with biological or chemical hazards? If your answer is yes, can you explain it or give some examples?

II Read the text to find out more about physical, psychosocial and ergonomic hazards:

PHYSICAL HAZARDS

Physical hazards are environmental factors that can harm an employee without necessarily touching them.

Examples of physical hazards include:

Electricity

Exposure to electrical live parts can result in serious injuries and fatalities, including electric shocks, burns, explosions and falls from height. The risk is increased in wet conditions, where a worker's equipment and surroundings can also become live.

Fires

Every workplace is at risk of fire. However, some workplaces are at an increased risk – either due to the work activities or types or employees/residents. For example, care homes, schools, hotels, organisations that carry out hot work, food manufacturers and restaurants. Fires can be devastating, both to the organisation and to the people impacted, they can cause serious injuries, such as burns, asphyxiation and fatalities. A risk assessment is an essential precaution in fire safety procedures.

Confined spaces

Working in confined spaces poses serious hazards to employees. They can be especially dangerous because of the reduced oxygen levels and potential *build-up* of gases, which can result in fires, explosions, asphyxiation and loss of consciousness. Further risks include

collapse and flooding. Examples of people at risk include anyone working in mines, cold storage, tunnels, wells, ship holds, air ducts and manholes.

Extreme temperatures

Exposure to freezing or extreme cold conditions can result in serious health impacts, including hypothermia, reduced mental alertness, chilblains, trench foot and reduced dexterity. Those at risk include anyone required to work outdoors in colder months, or in refrigerated warehouses, including construction workers, emergency response staff, fishermen, and food manufacturers. Conversely, exposure to extreme heat can result in health impacts such as dehydration, heat exhaustion and dizziness. Workers at risk include restaurant staff, launderers, smelters, welders and bakers.

SAFETY HAZARDS

These are hazards that create unsafe working conditions. For example, safety hazards include:

- **Trailing power cords, loose or frayed carpets and rugs, spills, ice, etc.** These could all cause a slip, trip or fall in the workplace, and result in physical and mental impacts on an injured employee.
- **Unguarded machinery.** Unguarded moving machinery parts pose a safety hazard as employees can sustain serious injury and fatalities if they were to accidentally come into contact with them. For example, clothes, lanyards, hair or body parts could become entangled in unguarded machinery and can result in bruising, broken bones, loss of limbs, head injuries and death.
- **Frayed and faulty cords, wiring or cables.** These could pose a risk of electric shock, burns and fires. Exposure to live electricity can also result in a fall from height. For example, if an employee sustained an electric shock while using a ladder.

ERGONOMIC HAZARDS

Ergonomic hazards are a result of physical factors that can result in musculoskeletal injuries. They can be found in every workplace and, if not managed correctly, can have significant long and short term impacts on your employees health and wellbeing. Musculoskeletal injuries are those that affect the musculoskeletal system, including damage to muscles,

tendons, bones, joints, ligaments, nerves, and blood vessels. Types of ergonomic hazards include:

- **Manual handling.** Manual handling occurs every time you lift, put down, push, pull, carry or move a load using your hands or bodily force. Poor manual handling techniques can have serious consequences unless employees are appropriately trained in their duties. These include long term damage to the individual's musculoskeletal system and mental health.
- **Use of display screen equipment.** Most jobs in this current, technological age, will require the use of some form of display screen equipment. Prolonged use of poorly designed workstations can result in a range of *ill-health* effects, including musculoskeletal injuries, repetitive strain injury, fatigue and eye strain.
- **Vibration.** Long term use of vibrating tools can have serious health impacts including vibration white finger, sensory nerve damage, carpel tunnel syndrome and muscle and joint injuries.

Ergonomic hazards can have severely disabling impacts if they are not managed correctly. Therefore, it's important that you understand how to identify ergonomic hazards at work and take steps to ensure that your employees can carry out their workplace activities safely.

PSYCHOSOCIAL HAZARDS

Psychosocial hazards include hazards that can have an adverse effect on an employee's mental health or wellbeing, and are closely linked with all the other categories of hazards. For example:

- **Health impacts.** Health impacts as a result of biological, chemical, physical, safety and ergonomic hazards can have significant impacts on an individual's wellbeing. For example, exposure to a *blood-borne* virus as a result of a sharps injury can result in months of stress and anxiety for the individual involved and their family. Therefore, almost all of the hazards outlined in these units so far could also result in psychosocial impacts.
- **Harassment.** Harassment is a result of someone acting in a way that makes you feel intimated, humiliated, offended or otherwise distressed, and can have serious impacts on a person's health and wellbeing. For example, bullying in the workplace is surprisingly common and can pose a serious psychosocial hazard. Bullying behaviour

can result in the bullied individual experiencing several psychosocial symptoms, including stress, anxiety and sleep deprivation, loss of appetite and a sense of vulnerability.

- **Workplace aggression and abuse.** Whether it's from a colleague, client or someone else, workplace aggression and abuse can have serious effects on someone's mental and physical health, resulting in symptoms such as stress, anxiety and sleep deprivation. Managers can take steps to reduce sexual harassment in the workplace and encourage employees to speak out if they witness or experience it.

(Adapted from *A Guide to the Most Common Workplace Hazards,* 2019)

III Reread the text if necesary and answer the following questions:

1 What are physical hazards?

2 Give a few examples of physical hazards mentioned in the text! Add some examples of your own!

3 Working in confined spaces can cause some similar health problems. Can you name them?

4 What are some effects of cold and heat on the human body?

5 What can cause slips, trips or falls in a workplace?

6 Why is unguarded machinery potentially dangerous for workers?

7 What kind of injuries can ergonomic hazarads result in?

8 Explain what kind of injuries those are and which parts of the body can be damaged?

9 Which types of ergonomic hazards are mentioned in the text?

10 What do psychosocial hazards include?

11 In what way are psychosocial hazards related to other categories of hazards? Give some examples!

IV What do the following words mean in the text? Find out other meanings of these words and write them down!

1 vessel, *noun*

2 live, *adjective*

3 build- up, *noun, verb*

4 collapse, *noun, verb*

5 cord, *noun*

6 hold, *noun*

V Make adjectives from the following nouns:

1 vulnerability

2 emergency

3 repetition

4 abuse

5 exhaustion

VI Match the words in column A with the most appropriate word in column B:

A	B
1 sleep	a) handling
2 electric	b) impacts
3 disabling	c) injury
4 muscle	d) deprivation
5 manual	e) shock

VII Find the words in the text that mean:

1 An electrical cable that temporarily connects an appliance to the mains electricity supply via a wall socket or extension cord.

2 A hole in the surface of a road or street, covered with a metal lid and used for entering an underground passage such as a sewer.

3 A furnace used for heating rock to remove the metal that it contains, or a factory where this is done.

4 A pipe or tube in a building that carries something such as air or protects wires, e.g. air ~

5 Severe mental or physical demand or exertion; to damage, to injure, to overwork, e.g. eye ~, ~ injury.

VIII Use the Internet or some other reliable source to find out more about the following health problems. Make also some notes. Then work in pairs. Student A asks some questions about a particular illness, i.e. about causes, symptoms, treatment, prevention, etc., while the other student (student B) provides the answers and explanations using his/her notes.

1 vibration white finger

2 carpel tunnel syndrome

3 sensory nerve damage

Part Two – Storage, Transportation of Hazardous Materials/Disposal of Hazardous Waste

Unit 4

Hazardous Materials Storage

I Warm up

1 What are hazardous materials/substances?

2 Can you think of some examples of hazardous materials?

3 How do we store them?

II Read the text and check your answers from the previous task.

Generally, hazardous materials have properties that make them dangerous or capable of having a harmful effect on human health or the environment. Hazardous materials can be in many forms including liquids, solids or gases and sludges. They are often generated from common municipal activities, such as vehicle maintenance and fueling, firefighting, landscaping and park maintenance, roadway repairs and maintenance, and hazardous waste *drop-off* locations. Proper management, storage and handling of hazardous materials is critical for reducing the possibility of stormwater contamination through leakage and spills.

Hazardous materials storage is relevant to both urban and rural settings in all geographic regions. Some common hazardous material sources are:

- petroleum products
- fuels
- asphalt products
- concrete curing compounds
- pesticides
- pharmaceutical products
- acids (e.g. from batteries)
- paints, stains, and solvents
- septic wastes

• wood preservatives

The effects of hazardous materials contamination may be more pronounced in geographic areas with heavier rainfall due to the greater volume of stormwater and potential for contribution of pollutants to stormwater discharges. Hazardous materials should be stored appropriately for the type of material, such as in a flammables cabinet.

Best practices for hazardous materials storage minimize the possibility of spills, weathering, leaks or improper handling from regular site activities. They include:

- properly inspect, label and seal all containers
- segregate incompatible materials based on physical and chemical properties and secondary containment requirements
- store all hazardous materials in areas that will not be subject to rain, flooding, or vandalism (under lock and key if necessary).
- for outdoor storage locations, provide proper ventilation, storage foundations (e.g. pallets or a concrete slab) and secondary containment as recommended by the manufacturer or required by regulation
- confine storage of hazardous materials to designated areas
- ensure enough aisle space to ease inspections and handling and minimize the chance of accidental spills
- store hazardous materials away from high-traffic areas
- perform loading and unloading operations in areas designed to contain potential spills
- make sure workers have easy access to spill cleanup materials
- use dry cleanup methods instead of wet (e.g. hosing areas down)
- train employees on proper storage techniques

Limitations

Hazardous materials storage containers, structures and buildings all have finite life spans. For example, tarpaulins and plastic sheets used for coverings on outdoor storage locations may not last very long in some climates, though a roof or other covered storage building structure would last much longer. Some hazardous materials or generated waste products may have limitations on the volume and length of time that anyone may store them.

Maintenance Considerations

Along with keeping storage areas neat, orderly and well lit, municipal staff should implement a regular inspection program. In particular, they should routinely inspect storage spaces and containers for leaks, signs of cracks or deterioration, or any other signs of leakage. They should immediately repair any leaks or containment weaknesses they find.

Cost Considerations

Costs for storing hazardous materials depends on the substance, the type of storage facility, and the frequency with which that facility's operators store, transport or dispose of the materials. Cleanup costs vary widely depending on the type and amount of substance that has leaked, as well as the surfaces or environments the substance has come in contact with. Municipal staff should immediately protect any spilled hazardous material from stormwater, clean all contaminated surfaces and dispose of the waste, regardless of the expense. To offset the cost of covering or enclosing hazardous materials, they might reconsider procurement, inventory and disposal practices to minimize the amount of materials stored *on-site*.

(Source: *Hazardous Materials Storage*, 2023)

III Answer the following questions:

1 What makes a substance/material hazadous?

2 Hazardous materials can take many forms. What are they?

3 What are some sources of hazardous materials? Where are they generated from?

4 Why is proper management, storage and handling of hazardous materials so important?

5 List five common hazardous material sources mentioned in text! Browse the Internet and find out more about them! Make some notes as well.

6 Do the effects of hazardous materials contamination depend on georaphical areas where it occurs? Why? Can you explain?

7 List a few practices for hazardous materials storage mentioned in the text!

8 What are some limitations when it comes to hazardous materials storage containers, structures and buildings?

9 What should a regular inspection program include?

IV Find in the text the adjectives that go with the following nouns:

1 _____ areas

2 _____ slab

3 _____ span

4 _____ weaknesses

5 _____ and _____ maintenance

6 _____ spills

V What is the opposite of the following:

1 urban ≠

2 solids ≠

3 to store ≠

4 outdoor ≠

5 finite ≠

VI Put the correct preposition in the gaps:

1 to have limitations _____ something e.g. the volume and length of time

2 to inspect storage space _____ signs of cracks or leaks

3 areas subject _____ heavy rains

4 to train workers _____ proper storage techniques

5 adverse health effects due _____ air pollution

VII Make nouns from the following verbs:

1 to deteriorate

2 to leak

3 to contaminate

4 to inflame

5 to procure

VIII Write either **W** (workers) or **M** (materials) next to the following practices for hazardous materials storage depending whether they concern workers or are focused on handling of materials/substances:

1 making sure workers have easy access to spill cleanup materials

2 perform loading and unloading operations in designed areas

3 separate incompatible materials based on physical and chemical properties

4 train employees on proper storage techniques

5 inspect, label and seal all containers

6 storing hazardous materials away from high-traffic areas

IX Find the words in the text that mean:

1 a substance that is harmful to the environment

2 the act of deliberately damaging or destroying things, especially public property

3 thick greasy mud or sediment

4 waterproof cloth, esp. of tarred canvas; sheet or covering of this

5 used about the time or place that you deliver something somewhere,

e.g. a ~ location/point/zone

Unit 5

The Transport of Hazardous Goods

I Warm up

1 What are some of the risks/potential dangers that the transport of hazardous substances presents to humans and the environment?

2 How can these risks be minimised?

3 Can you think of any recent accident that occured in the course of the transport of hazardous goods ?

II Read the text and complete your list of potential risks of the transport of hazardous goods.

Transport of hazardous goods (oils, gas, chemical products, radioactive substances) is the transit of substances with high risk to the environment and/or humans, or substances that can damage other materials and goods. The transport solution involves the implementation of adequate measures to ensure their transit in total security. Transportation may be by land, sea, waterways, rail or even by air.

Given the sensitivity and risk factors, hazardous goods need specific precautions to be taken. These include meticulous packaging and conditioning, specific handling operations

and storage which is adapted for their conservation. *Awareness-raising* and *on-going training* for staff are indispensable measures for transportation and handling of this category of goods. The regulations relevant to the transport of hazardous goods do not allow transit via pipelines, such as oil or gas pipelines.

The features of transport of hazardous goods

Hazardous goods are considered as such when they present a character of risk of targeted or global deterioration. In the event of an accident, the transport of dangerous materials can entail the risk of pollution of land and the contamination of groundwater. It also constitutes a health risk for humans and local fauna. The following products make up the main groups of hazardous goods:

- Inflammable substances;
- Corrosive products;
- Radioactive waste and elements;
- Toxic materials;
- Infectious agents, such as medical waste;
- Gases;
- Explosives

Examples and practical applications

Regulations applied to the transport of hazardous goods

On both local and international levels, regulations are extremely strict regarding authorization for the transport of hazardous goods in a given territory. Market players must respect several directives according to the mode of shipment employed:

- ADR transport: transit by road, conformity with the European Accord for Dangerous Goods by Road;
- RID transport: transit by rail according RID regulations (international carriage of dangerous goods by rail);
- Maritime transport: the codes relative to sea navigation and packaging are applied;
- ADN transport: concerns transit via waterways and is governed by the European agreement (international transport of dangerous goods via interieur navigation);
- Air transport: this transit mode involves the technical security directives elaborated by the International Civil Aviation Organization (ICAO).

Logistics conditions to respect

For ADR transport (road), as with the other modes of transit, logistics must adapt to the nature of the hazardous goods:

- Use adapted modes of transportation;
- Ensure packaging is conform with standards and absence of leakages of tanks;
- Verify labelling, storage and signaling before all transit operations.

Transport authorization controls are also necessary. The shipper is responsible for cleaning or decontamination in case of degradation of goods or an accident.

Transport of hazardous goods in figures

- Human errors are the cause of one third of accidents.
- Hazardous materials are responsible for only one fifth of injuries and deaths. Usually these are a result of other, indirect conditions.
- Shipment by sea and waterways is the most secure mode of transport with only 3 accidents registered in 2017, whilst, 67% of accidents were registered for transits by road.

(Adapted from *Hazardous Goods Transport*, 2023)

III Answer the following questions:

1 What does the transport of hazardous goods involve?
2 How can hazardous materials be transported?
3 What are some specific precautions to be taken when transporting hazardous goods?
4 How important is human factor? What can be done to prepare workers for transportation and handling of this category of goods?
5 In the event of an accident, what can be some consequences for people and the environment?
6 Give a few examples of hazardous goods!
7 Are there any regulations concerning the transport of hazardous goods? What do they apply to, i.e. are they different in relation to the mode of shipment employed?
8 What do the abbreviations ADR, RID and ADN mean? Browse the Internet to find out!
9 What does it mean that 'the logistics must adapt to the nature of the hazardous goods'?
10 What do figures (stastistics) show when it comes to transport of hazardous goods?

IV Find the verbs in the text that go with the following words:

1 _____ regulations

2 _____ precautions

3 _____ goods

4 _____ measures

5 _____ the transit

V Find all the collocations that contain the word 'risk':

adjective + risk	*verb+risk*	*risk+ noun*
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

VI Make adjectives from the following nouns:

1 infection

2 contamination

3 sensitivity

4 accident

5 absence

6 corrosion

VII Find the words in the text that mean the following:

1 order from an authority

2 animal life of a region or period

3 something that is necessary, obligatory, required, vital

4 necessitate or involve unavoidably

5 giving great attention to detail; very careful and precise

VII Put the right preposition in the gaps:

1 ___conformity _____ the European Accord for Dangerous Goods by Road

2 to transport good _____ land, sea, waterways, rail or even ____ air.

3 to have an authorization _____ the transport ____ hazardous goods ____ a given territory

4 the technical security directives were elaborated ___ the International Civil Aviation Organization.

5 to ensure the transit of hazardous substances ___total security

VIII What is the meaning of 'make up' in the following sentence:

'The following products *make up* the main groups of hazardous goods'.

What other word can be used instead of 'make up' in this sentence? What else can 'make up' mean both as a noun and as a phrasal verb? Write sentences of your own to show different meanings.

Unit 6

Transport of Hazardous Waste and its Disposal

I Warm up

1 What do you think happens with hazardous waste? How and where is it transported?

2 How do generators of hazardous substances dispose of them? Are there any laws in Croatia (& European Union) that regulate waste transport and its disposal?

II Read the text and find out more on the topic:

Hazardous waste generated at a particular site often requires transport to an approved treatment, storage, or disposal facility (TSDF). Because of potential threats to public safety and the environment, transport is given special attention by governmental agencies. In addition to the occasional accidental spill, hazardous waste has, in the past, been intentionally spilled or abandoned at random locations in a practice known as “midnight dumping”. This practice has been greatly curtailed by the enactment of laws that require proper labeling, transport, and tracking of all hazardous wastes.

Transport vehicles

Hazardous waste is generally transported by (tank) truck over public highways. Only a very small amount is transported by rail, and almost none is moved by air or inland waterway.

Highway shipment is the most common because road vehicles can gain access to most industrial sites and approved TSDFs. Railroad trains require expensive siding facilities and are suitable only for very large waste shipments.

The manifest system

In the United States and other countries a key feature of regulations pertaining to waste transport is the "cradle-to-grave" manifest system, which monitors the journey of hazardous waste from its point of origin to the point of final disposal. The manifest system helps to eliminate the problem of midnight dumping. A manifest is a *record-keeping* document that must be prepared by the generator of the hazardous waste, such as a chemical manufacturer. The generator has primary responsibility for the ultimate disposal of the waste and must give the manifest, along with the waste itself, to a licensed waste transporter.

In the event of a leak or accidental spill of hazardous waste during its transport, the transporter must take immediate and appropriate actions, including notifying local authorities of the discharge. Consequently wastes efforts must be undertaken to remove the wastes and reduce environmental or public health hazards.

Treatment, storage, and disposal

Several options are available for *hazardous-waste* management. The most desirable is to reduce the quantity of waste at its source or to recycle the materials for some other productive use. Nevertheless, while reduction and recycling are desirable options, they are not regarded as the final remedy to the problem of *hazardous-waste* disposal. There will always be a need for treatment and for storage or disposal of some amount of hazardous waste.

Treatment

Hazardous waste can be treated by chemical, thermal, biological, and physical methods. Chemical methods include ion exchange, precipitation, oxidation and reduction, and neutralization. Among thermal methods is *high-temperature* incineration, which not only can detoxify certain organic wastes but also can destroy them. One problem posed by hazardous-waste incineration is the potential for air pollution.

Biological treatment of certain organic wastes, such as those from the petroleum industry, is also an option. One method used to treat hazardous waste biologically is called landfarming. In this technique the waste is carefully mixed with surface soil on a suitable tract of land.

Microbes that can metabolize the waste may be added, along with nutrients. In some cases a genetically engineered species of bacteria is used. Food or forage crops are not grown on the same site. Microbes can also be used for stabilizing hazardous wastes on previously contaminated sites; in that case the process is called bioremediation.

The treatment methods outlined above change the molecular form of the waste material. Physical treatment, on the other hand, concentrates, solidifies, or reduces the volume of the waste. Physical processes include evaporation, sedimentation, flotation, and filtration. Yet another process is solidification, which is achieved by encapsulating the waste in concrete, asphalt, or plastic. Encapsulation produces a solid mass of material that is resistant to leaching. Waste can also be mixed with lime, fly ash, and water to form a solid, cementlike product.

Surface storage and land disposal

Hazardous wastes that are not destroyed by incineration or other chemical processes need to be disposed of properly. For most such wastes, land disposal is the ultimate destination, although it is not an attractive practice, because of the inherent environmental risks involved. Two basic methods of land disposal include landfilling and underground injection. Prior to land disposal, surface storage or containment systems are often employed as a temporary method.

Secure landfills

A secure landfill is a carefully engineered area that is used to deposit waste products. Typically, a secure landfill is a hole in the ground, but may also be built above ground. If the depression is in the ground, it must provide a 3 meter (10 foot) separation between the bottom of the landfill and the underlying bedrock or groundwater table.

The purpose of a secure landfill is to prevent any waterborne connection between the waste products and the surrounding natural environment. It is especially imperative that groundwater does not cause run off onto the surrounding landscape. Hazardous wastes are disposed of by burial in secure landfills, though they are sometimes placed underground in deep well injection systems.

One option for the disposal of (liquid) hazardous waste is *deep-well* injection, a procedure that involves pumping liquid waste through a steel casing into a porous layer of limestone or sandstone. High pressures are applied to force the liquid into the pores and fissures of the

rock, where it is to be permanently stored. *Deep-well* injection is relatively inexpensive and requires little or no pretreatment of the waste, but it poses a danger of leaking hazardous waste and eventually polluting subsurface water supplies.

Remedial action

Disposal of hazardous waste in unlined pits, ponds, or lagoons poses a threat to human health and environmental quality. Many such uncontrolled disposal sites were used in the past and have been abandoned. Depending on a determination of the level of risk, it may be necessary to remediate those sites. In some cases, the risk may require emergency action. In other instances, engineering studies may be required to assess the situation thoroughly before remedial action is undertaken.

(Adapted from *Hazardous-waste management – Transport and Disposal*, 2023)

III Answer the following questions:

1 What does the abbreviation TSDF stand for?
2 What is “midnight dumping”?
3 How has this practice been curtailed?
4 What is the most common way of transporting hazardous waste? Why?
5 What is the manifest system and how does it work?
6 What is the most desirable option for *hazardous-waste* management?
7 How can hazardous waste be treated? Can you give a few examples for each?
8 Describe the method used to treat hazardous waste biologically!
9 Give a few examples of physical treatment of hazadous waste!
10 What are two basic methods of land disposal? Can you briefly explain them?
11 Why is it necessary to remediate abandoned uncontrolled disposal sites in some cases?

IV Match the words in column A with the most suitable word in column B:

A	B
1 secure	a) table
2 contaminated	b) spill
3 groundwater	c) sites
4 forage	d) crops
5 accidental	e) landfills

V Find the verbs in the text that go with the following words:

1 _____ a disposal site

2 _____ organic wastes

3 _____ remedial action

4 _____ materials

5 _____ hazardous waste

6 _____ a threat

VI Write the synonyms of the following nouns:

1 a remedy

2 fissure

3 run off

4 layer

5 surface

VII Look at the following sentence:

'The purpose of a secure landfill is to prevent any **waterborne** connection between the waste products and the surrounding natural environment'.

What does the highligted word mean? Can you think of any other adjective(s) that end in –borne? Use an online dictionary to do the task!

_____ _____ _____

_____ _____ _____

VIII Find the words in the text that mean the following:

1 substance providing essential nourishment

2 large hole in ground; covered hole as trap; coal mine

3 to turn food, minerals, etc. in the body into new cells, energy and waste products by means of chemical processes

4 a substance (e.g. rock or other material) that has a lot of very small holes in it so air and water can pass through it, e.g. 'layers of ~ limestone

5 liquid or gas that comes out of a place, or the process of coming out into water or the air, e.g. ~ from the nuclear power stations

Part Three – Occupational Medicine and Diseases

Unit 7 Occupational Medicine

I Warm up

1 What do you think occupational medicine is?

2 What kind of issues/problem does it deal with?

3 When did emoloyers/physicians start to take occupational diseases seriously?

II Read the text and see what other information you can add to your answers.

Occupational medicine, formerly called industrial medicine, is the branch of medicine concerned with the maintenance of health and the prevention and treatment of diseases and accidental injuries in working populations in the workplace. Historically, occupational medicine was limited to the treatment of injuries and diseases occurring to production workers while at work. Over the years, this changed, with employees at plants, factories, and offices becoming eligible for medical services. College or school health programs might be considered as extensions of occupational medicine.

Diseases directly related to occupations were recognized by early Egyptian and Roman physicians. Modern occupational medicine may be said to have started with Bernardino Ramazzini, an Italian physician of the 17th century who strongly advised that the physician who wished to learn about the causation of a patient's complaint should inquire into the occupations of the patient. With the Industrial Revolution the number of persons exposed to potential hazards at work increased rapidly. Traumatic injuries became frequent, and diseases due to inhaled dusts and noxious gases and vapours were recognized, often by nonmedical persons.

Initially, occupational medical programs were directed toward the treatment of injuries or diseases that resulted from or during work. It was soon apparent that prevention was more economical than treatment. Protective devices were developed and placed around moving parts of machinery. Control programs were developed by engineers to remove harmful dusts and vapours by proper ventilation of work areas or by substitution of less toxic materials. When the engineers could not control the environment, the process was contained to prevent

or at least minimize the exposure of workers. As a last resort, protective devices such as masks and special clothing were worn by the workers.

With the development of preventive controls, the amount of occupational disease decreased. The development of new processes and new materials, however, produced new hazards at an ever-increasing rate, and constant vigilance was necessary. For example, the recognition that a pulmonary disease can result from exposure to beryllium demonstrated the need for a continued awareness of potentially toxic materials. It also demonstrated that a material once thought to be nontoxic may actually be toxic. This shift may be caused by a change in the physical or chemical characteristics of the material, an alteration in the method by which the material is used, a change in the amount of exposure of individuals to the material, and possible synergism with other materials.

The concern with diseases due to occupation led to concern with the general health of workers, not only because of an interest in their welfare but also because it was good business. A good occupational medical program improved labour-management relations and reduced absenteeism; labour turnover decreased and productivity increased. In many instances, the savings produced by the reduction in premiums paid for workers' compensation insurance paid for the occupational medical program. Depending on the country and the occupation, the types of health programs vary greatly. Large businesses, for example, tend to offer broad coverage, while small plants may have limited medical programs. The comprehensive programs, in addition to providing treatment of diseases and injuries, might include *pre-employment* examinations and periodic examinations during employment.

Throughout the world there is inadequate knowledge and reporting of occupational disease, and the data are suspect. Published figures for occupational illnesses, for instance, are smaller than for injuries because occurrence of job-related illness is less spectacular than, for example, an explosion of a mine causing a number of deaths. It may take a number of years of observation and research to discover that some particular dust, chemical, or type of physical energy is harmful.

In addition, physicians may have difficulty in deciding that an illness is attributable to the job. Many occupational diseases mimic sickness from other causes, and little is known of the ill effects and signs of continued small exposures to toxic chemicals. Another difficulty arises from the fact that although job-related disease may be suspected, doctors often lack tests to identify such disease as specific. As a result, against every diagnosed case of

occupational disease, there may be many incipient or unrecognized cases from the same causes. Introduction of materials of unknown toxicity, as well as changes in industrial operations, may create unrecognized problems in preventing harmful effects until after workers have been affected.

(Adapted from *Occupational Medicine*, 2023)

III Answer the following questions:

1 What is occupational medicine? What does it deal with?

2 What was another name for occupational medicine used in the past?

3 What did occupational medicine deal with in the past?

4 Who were the first to recognize that diseases were directly related to occupations?

5 When did modern occupational medicine start? Why is B. Ramazzini important?

6 During what period did the number of persons exposed to potential hazards at work increase rapidly?

7 What were occupational medical programs initially focused on?

8 When specialsts/employers realized that prevention was more economical than treatment, what did they develop? What was the result?

9 What kind of problems arose with the development of new processes and new materials? Give an example!

10 The concern with occupational diseases led to two things. What are they?

11 What are some positive results/effects of a good occupational medical program?

12 In spite of huge improvements there are still some problems related to occupational diseases, their prevention and treatment. Can you explain why this is the case?

IV Find the adjectives in the text that go with the following nouns:

1 _____ coverage

2 _____ devices

3 _____ dusts

4 _____ vigilance

5 _____ turnover

V Browse the text and find examples of compound adjectives written with a hyphen. For.e.g. a *short-term* investment or *home-based* business

_____ _____ _____

_____ _____ _____

VI Find the words in the text that have the same or similar meaning to the following explanations: :

1 the health and happiness of people

2 the habit of not being at school or work when you should be, usually without a good reason

3 sparing, avoiding waste, cost-effective

4 moisture or other substance diffused or suspended in air, e.g. mist, smoke, steam

5 money etc. given as recompense, indemnity, reparation

VII Find all the words (adjectives and nouns) in the text that refer to something adverse, bad or damaging for human health.

adjectives: _____

nouns: _____

VIII Make nouns from the following verbs:

1 to occur

2 to diagnose

3 to extend

4 to cover

5 to complain

IX Work in pairs. Ask your colleague about the place where he or she works and find out about the following: occupational diseases common in that particular workplace, about occupational medical program, etc. Write down all the information and then share it with the other students.

Unit 8 Occupational Disease (Part One)

I Warm up

1 Can you explain in your own words what occupational disease is?

2 Can you give some examples?

3 How can the disease that you have mentioned be prevented and cured?

II Read the text and find out about occupational disease and its history.

Definition and Historical Overview

Occupational disease is any illness associated with a particular occupation or industry. Such diseases result from a variety of biological, chemical, physical, and psychological factors that are present in the work environment or are otherwise encountered in the course of employment. Occupational medicine is concerned with the effect of all kinds of work on health and the effect of health on a worker's ability and efficiency.

Occupational diseases are essentially preventable and can be ascribed to faulty working conditions. The control of occupational health hazards decreases the incidence of *work-related* diseases and accidents and improves the health and morale of the work force, leading to decreased absenteeism and increased worker efficiency. In most cases the moral and economic benefits far outweigh the costs of eliminating occupational hazards. This text discusses general occupational health hazards and the disorders they cause, as well as the role of occupational health services.

Historical Overview

The Preindustrial Era

The first recorded observation of an occupational disease may be a case of severe lead colic suffered by a worker who extracted metals. It is described in the third book of *Epidemics*, attributed to Hippocrates, the Greek physician of the 4th century BCE. Other early writers also recognized the association between certain disorders and occupations. The Roman scholar Pliny, in the 1st century CE, described mercury poisoning as a disease of slaves because mines contaminated by mercury vapour were considered too unhealthy for Roman citizens and thus were worked only by slaves. In general, however, physicians of antiquity were not concerned with the health of workers.

During the Middle Ages the rise of metalliferous mining in central Europe inspired the German mineralogist Georgius Agricola to make a detailed study of gold-and silver-mining operations. In his *De Re Metallica*, published posthumously in 1556, Agricola described the primitive methods of ventilation and personal protection in use, common mining accidents and disasters, and such miners' occupational diseases as the "difficulty in breathing and destruction of the lungs" caused by the harmful effects of dust inhalation.

A more comprehensive account of occupational disorders was written by Bernardino Ramazzini, a professor of medicine first at the University of Modena and later at the University of Padua. His *De Morbis Artificum Diatriba* (1700; *Diseases of Workers*) contains descriptions of the diseases associated with 54 different occupations, from the mercury poisoning of Venetian mirror makers to the diseases afflicting learned men. Ramazzini believed that a physician must determine the patient's occupation in order to discover the cause of the patient's disorder. He is generally regarded as the father of occupational medicine.

The Industrial Era

The Industrial Revolution of the 18th century had a profound impact on occupational diseases. Rapid technological progress and industrial growth had led to crowded, unsanitary working and living conditions, with a corresponding rise in the number of accidents and deaths caused by the new machinery and exposure to toxic materials. In 1775 Percivall Pott, a London surgeon, linked the frequent occurrence of scrotal cancer among chimney sweeps to the soot ingrained into their skin by prolonged exposure to flue dusts. Charles Turner Thackrah, a Leeds physician, further advanced the study of occupational medicine in Britain with his *The Effects of the Principal Arts, Trades and Professions . . . on Health and Longevity* . . . (1831), which described lung diseases caused by dust that commonly afflicted miners and metal grinders. In 1895 Britain introduced a statutory notification system that required medical personnel to report all occurrences of certain diseases to the chief inspector of factories. Other industrial nations followed Britain's lead, and legal provisions for the health of the worker continued to be instituted throughout the 19th and 20th centuries.

The 20th Century

Although such classic occupational diseases as lead poisoning and anthrax have declined in incidence in industrialized countries, none have been eradicated. Furthermore,

new diseases continue to develop as a result of advances in technology. X rays were discovered in 1895, and 20 years later nearly 100 radiologists were estimated to have died as a result of occupational exposures. *Asbestos-related* disease was first reported in the first half of the 20th century, and in 1974 hemangiosarcoma, a rare malignant tumour of the liver, was discovered among workers involved in the polymerization of vinyl chloride monomer. Other occupational diseases related to the introduction of industrial processes and materials may well be recognized in the future.

(Adapted from Kazantzis, G., *Occupational Disease*, 2023)

III Answer the following questions:

1 What is occupational disease and what is it concerned with?
2 List factors that occupational diseases commonly result from?
3 What are some benefits of the control of occupational health hazards?
4 When were the observations of an occupational disease first recorded? What kind of health problems did they describe? Give a few examples of occupational diseases!
5 Which occupational diseases were described by the German mineralogist Georgius Agricola?
6 Who is regarded as the father of occupational medicine and why?
7 How did the Industrial Revolution of the 18th century influence both living and working conditions of people?
8 What was Percivall Pott's and Charles Turner Thackrah's contribution to the study of occupational medicine in Britain?
9 What was introduced in Britain in 1895?
10 In what way did this introduction of a statutory notification system influence other industrial countries?
11 What is the current situation with occupational diseases in the context of the introduction of new industrial processes and materials?

IV Make adjectives from the following nouns:

1 efficiency _____
2 statute _____
3 benefit _____
4 antiquity _____

5 fault _____

6 poison _____

V Match the words in column A with the most suitable word in column B:

A	B
1 harmful	a) inhalation
2 metal	b) effects
3 dust	c) provisions
4 legal	d) tumour
5 malignant	e) grinder

VI Find the words in the text that are used with the adjective 'occupational'

occupational _____

_____

_____

_____

_____

_____

VII Write down verbs that go with the following expressions:

1 _____ metals

2 _____ accidents and deaths

3 _____ a disease

4 _____ the cause of something

5 _____ the health and morale of workers

VIII Make a list of all the diseases/illnesses mentioned in the text. Browse the Internet and find out more about each of them. Make also brief notes and share the information with your colleagues. Discuss these diseases, for e.g. the causes, symptoms, the potential danger today, etc.

Unit 9 Occupational Disease (Part Two)

Occupational Health Services

I Warm up

1 What do you think occupational health services are?

2 What are some areas of occupational health that industrial medicine is concerned with?

II Read the text and check your answers:

Paralleling the development of new technology and occupational hazards has been the development of occupational health services. No longer concerned primarily with the prevention of industrial accidents and diseases among manual workers, industrial medicine now aims to protect and improve the health of all classes and kinds of workers. In 1950 a joint committee of the International Labour Organisation and the World Health Organization (ILO/WHO) defined the concerns of occupational health as:
"the promotion and maintenance of the highest degree of physical, mental and social *well-being* of workers in all occupations; the prevention among workers of departures from health caused by their working conditions; the protection of workers in their employment from risks resulting from factors adverse to health; the placing and maintenance of the worker in an occupational environment adapted to his physiological equipment and, to summarise, the adaptation of work to man and of each man to his job."

In most countries in the West the responsibility for health and safety at work is placed on the employer, although the government may establish safety standards. Occupational health services are provided as benefits by employers and generally are separate from other community health services. In the former Soviet Union occupational health and hygiene were given high priority and were fully integrated in the general medical care system. In the developing and Third World countries, many of which are undergoing rapid industrialization, the importance of occupational health is increasingly realized. The problems of exposure to occupational hazards, however, are frequently compounded by preexisting malnutrition and a high incidence of infectious disease. Occupational health services in these countries are often most practical and *cost-effective*, therefore, when combined with primary health care delivery.

Aims and functions of occupational health services

The primary concerns of occupational health services remain those specified by the ILO/WHO in 1950, although *work-related* diseases are now considered as well as purely occupational diseases. The actual services offered are essentially preventive in nature and are summarized below.

Job placement

People with certain preexisting medical conditions may be at a disadvantage in some jobs. A preemployment health questionnaire or medical examination can be of great value in such cases by determining job unsuitability before training time and expense have been incurred.

Safety training

An occupational health service has a responsibility to keep all employees informed about hazards in the workplace. The measures taken to protect employee health should be thoroughly explained so that workers understand the necessity of complying with such irksome or unpleasant restrictions as the wearing of protective clothing and face masks. First aid facilities should be organized and employees instructed about first aid procedures in case of accidental injuries or other emergencies.

Supervision of high-risk groups

Exposure levels considered safe for a young male worker may be hazardous for a pregnant woman (the fetus, especially during the first three months of development, is particularly sensitive to environmental toxic agents). Pregnant women, as well as such other vulnerable groups as the very young, the elderly, and the disabled, therefore require appropriate medical surveillance and advice about specific precautionary measures they can take.

Control of recognized hazards

A complex system of environmental and biological monitoring has been developed for the control of known hazards at work. Occupational health practice is concerned with monitoring the concentration of toxic substances in the environment, determining safe exposure levels, suggesting procedures to limit worker exposure, and monitoring workers for signs of

overexposure. Occupational health specialists can also contribute to the prevention of health risks by assisting in the planning and design of new equipment and factories.

Identification of unrecognized hazards

Occupational health services can play a major role in the detection of new health hazards of all types. Clinical observation and study may reveal a causal relationship between patterns of sickness or mortality in groups of workers and their occupational exposure. Examples of hazards identified in this manner include lung and nasal cancer among nickel workers, lung cancer in asbestos workers, and coronary heart disease among workers exposed to carbon disulfide (used in the manufacture of rayon).

Treatment

Quick, *on-site* treatment of work injuries and poisonings can prevent complications and aid recovery. Such treatment can also be economically beneficial by saving traveling and waiting time. Furthermore, physicians and nurses who are unfamiliar with their patients' working conditions may keep workers with minor injuries away from work longer than necessary. An occupational treatment service offers opportunities for specialized counseling and health education.

General health education and surveillance

Occupational health services may have to provide general medical care for workers and their families in developing countries with inadequate community health services. Even when general health care is provided elsewhere, an occupational health service can offer an effective and often economically advantageous program of health education and counseling. By advising employees on such topics as smoking, alcohol or drug abuse, exercise, and diet, the occupational health service can improve worker health and efficiency and reduce illness and absenteeism. The health service is also in a position to organize employee health surveillance programs for the early diagnosis of disease.

(Adapted from Kazantzis, G., *Occupational Disease*, 2023)

III Answer the following questions:

1 What was industrial medicine primarily concerned with in the past? What is their aim today?

2 Who is usually the person responsible for health and safety at work in the Western countries?

3 What was the situation in the former Soviet Union? And in the developing and Third World countries?

4 In the Third World countries occupational diseases are compounded by other problems. What are these probelms?

5 Which occupational health services are mentioned in the text?

6 Provide a short explanation (a sentence or two) for each of the services mentioned!

IV What is the opposite of the following:

1 familiar ≠

2 minor ≠

3 thorough ≠

4 suitability ≠

5 irksome ≠

6 appropriate ≠

V Make adjectives from the following nouns:

1 advantage

2 precaution

3 accident

4 necessity

5 delivery

VI Find the verbs in the text that go with the following expressions:

1 _____ a major role

2 _____ job suitability

3 _____ protective measures

4 _____ the responsibility for something or someone

5 _____ the concentration of toxic substances in the air

VII Find the words in the text that mean the following:

1 lack of food necessary for health; undernourishment

2 someone who is ~ is weak or easy to hurt physically or mentally: easily damaged by something negative or harmful

3 giving the most profit or advantage in exchange for the amount of money that is spent

4 advice and help that you give someone with their problem, especially as your job

5 doctor, esp. specialist in medical diagnosis and treatment

VIII Find out more about occupational health services/programmes in Croatia in general, or in the place where you work (a company/institution/factory). Share the informaion with other students. Discuss good and bad sides of occupational health services provided in Croatia! Make also some suggestion how it can be improved.

Part Four – Some Physical and Psychosocial Aspects of the Work Environment

Unit 10 Temperature at Work

ERGONOMICS: EXTREME TEMPERATURE WORK

I Warm up

1 Is temperature at work an important health and safety issue?

2 What are some of the problems related to (extreme) temperature in a workplace? Can you explain and give some examples?

II Read the text and find out more about potential problems related to workplace temperatures:

Because of the nature of the industry people work in, there will always be concerns about working temperature. From one extreme to the other, from the heat of oven work to the cold of the frozen food plant, temperature is a serious health and safety issue and one that we need to address.

Extreme temperatures can cause various problems for workers. Hot temperatures can lead to dehydration and muscle fatigue, especially in conjunction with high humidity. Cold temperatures make the muscles less flexible, resulting in muscle strains and pulls. Problems may include trouble breathing, fatigue, reduced dexterity, sensory sensitivity and reduced grip strength. Hot or cold work environments do not necessarily need to be outdoors. Any location that is outside of the typical comfort zone of 55 to 85 degree Fahrenheit (13 to 29° C) is cause for concern.

Hot Environment

When you are subjected to a *high-heat* environment, your internal body temperature rises resulting in your body's attempt to regulate its temperature through increased blood circulation and increased perspiration. Relatively less blood goes to the active muscles, brain and other internal organs, which reduces strength and brings on fatigue more quickly. If your body is prevented from cooling down, it will continue to try to cool down and expend more

energy, increasing fatigue. Heat stroke and heat exhaustion are the most serious health issues caused by working in hot environments. Heat stroke can be fatal and victims usually do not recognize the symptoms. While the symptoms vary from person to person, they include dry, hot skin, an elevated body temperature and ultimately a partial or complete loss of consciousness. Heat exhaustion is caused by a loss of body fluid through excessive sweating. Symptoms include heavy sweating, weakness, dizziness, intense thirst, nausea, headache, vomiting, diarrhea, muscle cramps and possibly palpitations.

The best solution to working in a hot environment is to remove yourself from the environment or reduce the temperature. This should be attempted first by increasing ventilation and/or cooling or providing heat shields, as appropriate. This is not always practical and other solutions may have to be employed to mitigate the impact of the heat. Alternating work or implementing a *work-rest* schedule may provide relief.

- Drink fluids, preferably water, throughout the day to replace lost water.
- Limit your caffeine intake.
- Protect yourself when working outdoors by covering up as much as possible.
- Wear lightweight, breathable fabrics.
- Perform strenuous work during the coolest times of the day, reserving lighter tasks for the *high-heat* periods.
- Take rest periods to allow your body time to cool off.
- Know the signs of heat stress and heat exhaustion.

Cold Environment

Low temperatures reduce sensory feedback, dexterity, blood flow, muscle strength and balance. This can impact performance of complex mental and physical tasks and may even lead to potentially lethal side effects. A cold environment takes away body heat, which can result in a lowering of the inner body temperature to dangerously low levels. Hypothermia is a common cold injury associated with low body heat. This occurs when your body loses energy faster than it is produced, dropping your body temperature. Warning signs are numbness, stiffness, drowsiness and poor coordination. Frostbite is another common cold injury, which typically affects the nose, ears, cheeks, fingers and toes. The low temperature constricts blood vessels, which impairs blood flow and may cause permanent tissue damage. If damage is only to the skin and underlying tissue, complete recovery may be expected. However, if blood

vessels are affected, the damage may be permanent and could result in amputation of the affected body part.

To cope with working in a cold environment you should stay active, dress warmly and follow basic safety rules. Working in a cold environment increases the risk of back injuries and other musculoskeletal injuries. Perform warm up stretching exercises before doing heavy work or handling heavy equipment and materials.

- Dress in multiple layers of loose, dry, protective clothing.
- Ensure that your hands, feet, face, head and eyes are covered.
- Avoid getting wet.
- Keep moving to help your body stay warm.
- Take regular breaks in a warm location.

(Adapted from *Ergonomics: Extreme Temperature Work*, 2023)

III Answer the following questions:

1 Why is workplace temperature a serious health and safety issue?
2 What is meant by 'extreme' temperatures? What kind of problems can they cause?
3 Give a few examples of problems caused by hot and cold workplace temperatures!
4 What is the typical 'comfort zone' when we speak of indoor working places?
5 What happens when a human body is subjected to a high-heat environment?
6 What are some of the most serious health issues caused by working in hot environments?
7 How can we recognize these issues, i.e. what are the most common symptoms?
8 List a few things that can be done to avoid or at least mitigate the impact of the heat on the worker!
9 What are some of the effects of low temperatures on human body?
10 What is hypothermia? What are some warning signs that the body temperature is too low?
11 What kind of damage(s) can low temperature cause?
12 What are some of the things workers can do in order to cope with working in a cold environment?

IV Match the verbs in column A with the most appropriate words in column B:

A	B
1 to recognize	a) the impact of something
2 to mitigate	b) the symptoms
3 to employ	c) blood vessels
4 to address	d) different solutions
5 to affect	e) an issue

V What are the synonyms of the following words:

1 exhaustion _____

2 lethal (*side effects*) _____

3 (*heat*) shields _____

4 relief _____

5 (*drink*) fluids _____

6 fabric _____

VI Write either **H** (heat) or **C** (cold), or both in some cases, next to the following symptoms depending whether they are related to heat or cold affecting human body:

1 lower concentration _____

2 headache _____

3 fatigue _____

4 hypothermia _____

5 dizziness _____

6 clammy skin _____

7 white finger _____

8 unconsciousness _____

9 possible death _____

10 dehydration _____

11 nausea _____

12 Reynaulds disease _____

VII Find the words in the text that mean the following:

1 a medical condition in which the body temperature is much lower than normal

2 a tube in people, animals or plants through which liquid flows; also a large boat or ship

3 a tired state, between sleeping and being awake

4 to remove water from something, to lose too much water from your body

5 an injury caused by twisting or stretching a muscle too much; severe mental or physical demand or exertion; pressure caused by a difficult situation

VIII Put the words in brackets into the correct form:

1 Some symptoms caused by heat can be _____ (to avoid) with proper risk assessing and control measures.

2 Despite the _____ (absent) of a maximum temperature there are certain regulations protecting workers in for e.g. baker's food industry.

3 Too much heat at the work place can _____ (low) the concentration level, provoke dehydration by _____ (to lose) of fluids.

4 Heat stress can also cause _____ (dizzy), _____ (coherent, neg.) speech, _____(to confuse).

5 When you work in a cold environment you should dress _____ (warm), and wear _____ (protection) clothing if necessary.

Unit 11 Bullying/ Mobbing in the Workplace

I Warm up

1 Are you familiar with the term 'bullying'? What does it mean 'to bully someone'?

2 Can you give some examples of bullying? Where does bullying most commonly happen?

3 How serious do you think the problem is at a workplace, schools, etc.?

II Read the text and find out more on the topic:

We can all recognize physical violence and its effects – bruises, broken bones, blood, etc., but we are less able to recognize psychological violence, or bullying. Sadly, and frighteningly, workplace bullying is incredibly common. The Trades Union Congress found that a staggering 29% of people have been bullied at work, with even more reporting to have witnessed bullying occur.

Bullying can take many forms. It can be covert and subtle, or it can be blatant and obvious. Bullying does not have to occur a certain number of times to be classified as such – any instance of behaviour that is intended to hurt, threaten, intimidate, force, or coerce, is bullying.

Signs of Workplace Bullying

If you have experienced any of the above behaviours in your workplace, then you may be the subject of bullying. Some common noticeable signs of workplace bullying include:

- Constant criticism.
- Removal of duties without reason.
- Overbearing supervision or monitoring.
- Threats, aggression, and shouting.
- Being put down, picked on (either in private or in front of others), and made to feel like the butt of the jokes.
- Being excluded and ignored.
- Having malicious rumours spread about you.
- Unwelcome sexual advances.
- Misusing a position of power to belittle, demean, or intimidate.
- Refusing reasonable requests.
- Unfounded threats and comments about job security.
- Blocking promotion, progress, or training opportunities.

Behaviours of a 'Bully Boss'

Workplace bullying might happen between anybody in the workplace. If you did feel like you were being bullied at work, it is likely that you'd report it to your manager or boss. But what happens when these people are the bullies?

It is not always obvious to recognise when a boss is the one doing the bullying. Often, people will assume that their boss is just tough, wanting to get the best results, and under a lot of pressure. However, bullying is always unacceptable and these are not excuses.

Below is a list of behaviours that may indicate your boss is demonstrating bullying characteristics:

- **They threaten you.** Threatening can encompass a wide range of behaviours, including threatening to fire you, making threatening gestures, or threatening to physically harm you. This also includes aspects of intimidation, such as invading your space and towering over you.
- **They verbally abuse you.** Verbal abuse is a highly indicative sign that your boss is a bully. This includes shouting at you, swearing at you, making snide remarks, unfair

and unwarranted criticism, and making offensive and humiliating jokes at your expense. Verbal abuse can occur both in private and in front of others.

- **They question your abilities.** A 'bully boss' could frequently question your abilities, skills, ideas, and accomplishments. They could belittle your work and decrease your confidence in your adequacy to perform your job role.
- **They undermine your work.** As well as undermining your work by questioning your skills and abilities, they may undermine your work in many further ways. They may regularly change your assigned tasks (sometimes without telling you), withhold necessary information, give you more work than you can handle, and make overly critical and unjustified comments about your work.
- **They intrude on your privacy.** Signs that somebody is intruding your privacy include them listening in on your conversations, watching your behaviours, opening your mail, looking through your possessions, or even spying on you.
- **They hinder your chances of success.** A boss who is bullying you may deny you promotions and additional training, all to stop you from progressing. They may also closely monitor and try to manage all your projects.
- **They isolate you.** Isolating people socially is a way for a 'bully boss' to gain control and make you doubt yourself. They may exclude you from social events, company outings, and even from mailing lists.
- **They spread rumours about you.** If a bully is wanting to make you look bad, they may gossip about things such as your appearance and your abilities. They may also spread rumours about your personal life.

How to Report Bullying at Work

If you are experiencing any of these behaviours, it's important that you speak up. This is not only important for your own wellbeing, but you may also be unknowingly helping other colleagues who are experiencing the same thing.

The first action you can take, if you feel comfortable to do so, is to speak directly to the person who is behaving in this way. It may be that they do not realise what they are doing, or how their behaviours are affecting you. Be clear with how you feel and try to stay calm.

If you do not want to do this, or if you have already done so and the behaviours have continued, you could report it to any of the following:

- **Your line manager.** This person is responsible for supporting you and your wellbeing at work. If you do not feel comfortable speaking to them, for example if they are the one demonstrating the behaviour, you could speak to another manager.
- **Your HR (Human Resources) department.** They have a responsibility to investigate and take matters such as these further. This may involve them speaking to the perpetrator and offering you any support that you need.
- **Your trade union representative (if you have one).** They can help you to agree on a way forward and speak up for you if you are uncomfortable doing so yourself.

If none of the above are suitable for your circumstances, you could make a formal complaint using your organisation's grievance procedure.

(Adapted from Collier, E. (2017) *Am I Being Bullied at Work? 12 Signs of Bullying In the Workplace*)

III Answer the following questions:

1 What is bullying and how common is the problem in a workplace?

2 Why is it difficult to recognize bullying? What are some different forms it can take?

3 What are some of the signs of workplace bullying?

4 Decide which signs, in your opinion, are the most threatening ones for a worker (choose four or five out of those described in the text)? Which ones represent a less serious threat to the individual's dignity. Give your reasons!

5 Why is it not always easy to recognize that your boss is a bully?

6 What kind of behaviour may indicate your boss is a bully or that s/he demonstrates some bullying characteristics?

7 What can you do if you think you are being bullied?

IV Find the adjectives in the text that go with the following nouns:

1 _____ criticism

2 _____ gestures

3 _____ supervision / monitoring

4 _____ procedure

5 _____ opportunities

V What is the opposite of the following:

1 intimidating ≠

2 blatant ≠

3 staggering ≠

4 tough ≠

5 verbal ≠

6 obvious ≠

VI Look at these sentenes from the text and the words written in bold:

1) Some common noticeable signs of workplace bullying include: (…) being **put down**, **picked on** (either in private or in front of others), and made to feel like the butt of the jokes.
2) This also includes aspects of intimidation, such as invading your space and **towering over** you.
3) If you are experiencing any of these behaviours, it's important that you **speak up**.

The verbs *put down, pick on, tower over, speak up* are phrasal verbs.

Phrasal verbs are very common in English, especially in more informal contexts. They are made up of **a verb** and **a particle** (e.g. *to break **down***) or, sometimes, **two particles** (e.g. *to get **on with***). The particle often changes the meaning of the verb, for e.g.

break down can mean to stop functioning (machine, computer, vehicle) or to collapse, physically or in structure,

break up can mean to stop having a relationship or stop working together, also to separate into smaller pieces.

Consult an online dictionary and find out other meanings of *put down, pick on, tower over, speak up.*

put down

pick on

tower over

speak up.

Find out also the meanings of the following phrasal verbs:

put off

put up
put on

pick up
pick out
pick at

speak out
speak up for

Now choose one phrasal verb from each group (three in all) and use them in sentences of your own.

_____

_____

_____

VII Find the words in the text that mean the following:

1 to do something that is harmful, illegal, or dishonest, to commit a crime or do something wrong or evil, e.g. to ~ a fraud or a massacre
2 if people often make jokes about you or criticize you, then you are ~
3 persuade or restrain by force, to make someone do something by using force or threats
4 to come uninvited or unwanted
5 general talk, or hearsay of doubtful accuracy, gossip

VIII Work in pairs. Imagine one of the following situations:

- one of your employees complains to you about being bullied by his/her colleagues.
- your colleague tells you his/her boss is bullying him/her
- your child says his is being bullied by his schoolmates

What would you do to help him/her? What questions would you ask a person that turns to you for help in such a sitution? What kind of advice woud you give him/her. Discuss your answers with other students.

Unit 12 How Does Working Overtime Impact Workers?

I Warm up

1 When do employers require workers to work overtime?

2 Do you think it is a wise solution? Explain!

3 Do you think workers see overtime as something positive? If yes, why? If not, why not?

II Read the text carefully and match the headings (a-e) with the paragraphs (1-5)

a) **Increased Safety Risk**

b) **Increased Turnover Rates**

c) **Increased Health Problems**

d) **Increased Absenteeism**

e) **Decreased Productivity**

How excessive overtime is impacting your organization

Does your organisation often rely on overtime to fill gaps and solve other problems? Generally, there is a deeper issue at play. Take a look at how excessive overtime impacts your business here.

Excessive overtime is a dominating factor across industries such as security, hospitality, manufacturing and home care. Workers often see overtime as a bonus. It gives them the opportunity to earn more money. However, it is largely a hindrance to companies in various ways. Seen as a quick fix for companies to finish projects in time, excessive overtime carries more negative effects than positive. Research suggests that regardless of our reasons for working long hours, excessive overtime does not help us. For starters, it doesn't seem to result in more output. In a study of consultants by Erin Reid, a professor at Boston University's Questrom School of Business, managers could not tell the difference between employees who actually worked 80 hours a week and those who just pretended to.

Although it is perceived that more work is being done due to longer hours worked, this is not always the case.

Impacts of Excessive Overtime

1 _____

A recent manufacturing study found that a 10% increase in excessive overtime leads to a 24% decrease in output per hour.

Research has found that employee output falls sharply after a 50-hour work-week, and declines greatly after 55 hours. Someone who puts in 70 hours produces nothing more with those extra 15 hours, according to a study published last year by John Pencavel of Stanford University.

According to data from 18 manufacturing companies in the U.S., when overtime is used, productivity declines. On average, a 10% increase in overtime results in a 2.4% decrease in productivity. The findings show the following reasons for the productivity limitations of prolonged work-weeks:

- Fatigue: employees simply being too physically and mentally tired to perform at their best ability
- As more time is provided or available to complete a task, work rate slows and unproductive time increases
- If employees are working long workweeks simply to be seen "putting in the hours", it is likely that these hours are less productive.

2 _____

Excessive overtime can lead to absenteeism as a result of poor health, fatigue, or people simply needing to take time off. Absences often need to be covered by replacement employees, who are often working overtime themselves.

Excessive overtime can also result in morale problems, which can be manifested as low productivity, absenteeism, turnover and labor issues. In Circadian's Shiftwork Practices 2004, 31% of shift work companies with very high overtime levels had poor morale. Only 13% of companies with normal overtime amounts had poor morale. Morale was also reflected in absenteeism levels.

54% of operations with high overtime also had absenteeism levels above 9%, compared with only 23% of operations with normal levels of overtime.

3 _____

Another adverse effect of excessive overtime through absenteeism is an increase in employee turnover. The lack of *work-life* balance and fatigue resulting from excessive overtime eventually catches up with some employees. Like absenteeism, companies with high turnover are also likely to have high overtime. Employees must work to make up for vacant positions if demand is to be met.

Turnover as a direct result of working excessive hours is more likely in *non-hourly* positions, where the employees are not being paid a premium to work the extra hours.

4 _____

While long work hours may be standard in some industries, during certain time periods, or in the case of emergency situations, employers are responsible for doing their part in ensuring that employees are kept as safe and healthy as possible. The U.S. Department of Labor's Occupational Safety and Health Administration (OSHA) recommends that during overtime periods, employers provide additional breaks and lunches. They also advise increasing the number of days worked rather than the number of hours worked to maximize productivity.

Although some companies do have policies regarding overtime safety limits, they are usually only mentioned and rarely enforced. In many cases, employers actively pressure employees to ignore the policies and work through pain and fatigue. When it comes down to choosing between workers and profit, all too often workers suffer.

5 _____

A considerable body of scientific work has explored the health problems associated with working excessive overtime. Here are some health problems that have been linked to long working hours:

- *Lower-back* injury in jobs with a lot of manual lifting
- Higher blood pressure among *white-collar* workers
- Increased mental health issues

A study by Cornell University shows that approximately 10% of employees who work 50 to 60 hours per week report severe *work-family* conflicts. This number jumps to 30% for those who work more than 60 hours. The divorce rate also increases as weekly hours increase. These factors contribute in turn to mental health and alcohol problems.

A Canadian study showed that workers who increased their work hours from 40 hours or less per week to over 40 hours per week experienced an increase in tobacco and alcohol consumption, an unhealthy weight increase among men, and an increase in depression among women. These health problems contribute to the indirect costs of allowing excessive overtime to occur. Health care costs, absenteeism and turnover will increase, while productivity will decrease.

Although employees welcome overtime whether it be longer days or working on weekends, based on the studies and research carried out, it isn't the most effective of methods for the companies themselves. With the implementation of better scheduling methods, companies can avoid these various issues from occurring, all while maintaining productivity levels and profits.

(Adapted from *How Excessive Overtime is Impacting Your Organization*, 2023)

III Answer the following questions:

1 How much is excessive overtime present in various industries?
2 How do workers generally feel about working overtime?
3 What are some negative effects of working overtime?
4 What are some of the reasons that bring about the decrease of productivity connected with prolonged work-weeks?
5 What is the relationship between excessive overtime and absenteeism?
6 What is employee turnover? In what way does excessive overtime influence worker turnover?
7 What are some additional measures employers should introduce in order to ensure safe and healthy working environment, especially when workers are expected to work overtime?
8 What do most companies do in cases when they have to choose between workers and profit?
9 What are some health problems linked to long working hours?
10 What can companies do in order to avoid various issues linked to excessive overtime and at the same time maintain productivity levels and profits?

IV Find the adjectives that are used in the text with the following nouns:

1 _____ work-weeks
2 _____ situations

3 _____ overtime

4 _____ limits

5 _____ conflicts

6 _____ health

V Fill in the gaps with the correct form of one the following phrasal verbs:

■ to take time off ■ to catch up with ■ to carry out

■ to make up for ■ to come down to

1 Worker may give different reasons for working overtime but it usually _____ to one thing in most cases: money.

2 When working excessive overtime, family life often gets neglected and it is difficult, especially for parents, to _____ the lost time.

3 After he had finished his project he was so exhausted that he had to _____some ____.

4 It took him quite a lot of time and money but eventually he was able to _____ his plan.

5 If you do not attend lectures regularly it is going to be difficult later on to _____ the rest of the students.

VI Match the verbs in column A with the most appropriate word(s) in column B:

A	B
1 to lead to	a) certain issues
2 to avoid	b) negative/positive effects
3 to publish	c) a premium
4 to pay	d) a study
5 to carry	e) absenteeism

VII Put the right preposition in the gaps:

1 If we do not finish our project ____ time we won't get any money for it.

2 Even though it seemed a problem we could easily solve it turned _____ that a deeper issue was ____ play.

3 Many studies have shown that the average 40 hours or less ____ week are more productive than working overtime.

4 Organizatons often rely ____ overtime when faced ____ personnel shortages.

5 Poor morale of workers can also be reflected ___ high absenteeism levels.

6 The issue of excessive overtime is present _____industries such as security, commerce, hospitality, manufacturing, construction, etc.

VIII Find the words in the text that mean the following:

1 extra benefit, extra payment

2 obstruction, difficulty, drawback

3 rate at which people enter and leave employment

4 (of worker or work) non-manual, working in offices rather than doing physical work

5 amount produced (by machine, worker, etc); printout, results, etc. from computer

Part Five –

Safety in the Hotel Indutry & Quality Assurance (QA)

Unit 13

Health and Safety in the Hotel Industry

I Warm up

1 Are you familiar with the term hospitality (industry)?

2 What kind of hazards may we encounter in the hotel industry?

3 Are these hazards easily controlled or minimised? Can you give some examples?

II Read the text to find out more about health and safety hazards in the hospitality industry.

The hospitality industry has a potential for multiple hazards, and hoteliers are constantly looking for ways to mitigate risks from various sources. Hoteliers are ethically and legally obliged to protect the health and safety of their guests and staff by creating effective protocols to protect their welfare.

Your hotel's success is closely interlinked with the safety and health protocols you have put in place to protect your staff and guests. A reputation of recurring multiple accidents can affect your employees' turnover and reduce your guests' bookings.

As a hotelier, coming up with sustainable health and safety protocols to mitigate health and safety risks can reduce your losses and protect people in the event of an accident.

Health and safety protocols are actionable steps hoteliers can use to protect staff and guests in the hotel. Health and safety protocols involve:

- Documenting hazards in the hotel environment.
- Communicating the potential hazards to all stakeholders.
- Implementing training procedures to mitigate the risks.
- Adapting an actionable plan for emergencies.

What are the common health and safety hazards in the hospitality industry?

While the hospitality industry is a highly lucrative enterprise for hoteliers, it comes with a myriad of challenges in terms of protecting the health and safety of guests and staff. Standard health and safety hazards in the hospitality industry include:

- Fire and electrical shock hazards

- Slips, trips and falls
- Food safety

Why is health and safety important in hotels?

1) It helps to reduce staff turnover

The hospitality industry has a high turnover rate mainly because jobs are seasonal and attract a younger demographic that later moves on to other industries as they gain experience. Another reason for the high turnover may be the daily health and safety hazards employees are exposed to. As a hotelier, you can reduce the high turnover rate by minimising job risks by conducting regular safety training.

2) Develop a reputation for quality customer service

If your hotel develops a reputation for providing quality customer service, safety, and sanitation, you can easily attract new customers while maintaining the existing ones. Hotels are operating in a digital era where a bad review on your company site or social media about your food, bad sanitation, or inadequate safety measures for the guests can significantly reduce your hotel's bookings.

3) Increase profits

Incorporating effective health and safety protocols can help attract new customers, which increases your revenues.

4) Minimise loss

Health and safety protocols can help your hotel minimise risky events that may result in lawsuits. Hazards such as fire, slips, falls, and exposure to excessive heat or cold can cause loss of valuable property, mental and physical trauma, and death of your staff and guests. Incorporating safety protocols such as fire drills and first aid as part of your operations can significantly reduce the impact of risky events.

How are the hotels providing safety to their guests?

Train your staff in all your health and safety protocols

With proper planning, you can provide adequate safety measures for guests to experience a frictionless time while in your hotel. As a hotelier, you can provide adequate safety measures by educating your staff. To prevent injuries caused by spillages, fire, food contamination, chemicals, and unattended objects, you can conduct departmental training to address various hazards in each hotel area.

Communicate with your guests regarding emergency planning and potential hazards

Have a medium to constantly update your guests about potential hazards, operations changes, and emergency plans updates.

Create a guest occupational safety committee

You can create a safety committee that regularly addresses deficiencies in the hotel's safety protocols.

Who has responsibilities for health and safety in the hotel?

Every stakeholder in the hotel industry has a role to play in protecting the health and safety of staff and guests at the hotel. Key stakeholders may include:

1) Hotel managers

As a hotel manager, you can protect the welfare of your staff and employees by:

- Conduct regular employee training focusing on hazards in the hotel environment.
- You can communicate to your guests and staff about the potential hazards in the hotel. You can put hazard posters, signs, or labels to warn people about potential risks they may be exposed to in different areas of the hotel.
- Regulation and insurance compliance. Ensure that your hotel meets your country's food, sanitation, and safety standards to minimise accidents.
- Hire qualified personnel. Working with a trained staff significantly reduces human errors, which reduces accidents.

2) Employees

Hire employees that can cooperate with you to maintain health and safety protocols in the hotel. As a hotelier, communicate to your employees about their safety responsibilities, which may include:

- Reporting hazards to management
- Protecting the health and safety of guests and co-workers.
- Ensuring they maintain good personal hygiene.

3) Guests

Hotel guests are responsible for following health and safety instructions, using equipment responsibly, and reporting any hazards to the staff.

The hospitality industry, while lucrative, has the potential for many health and safety hazards that can affect a hotel's performance by increasing employee turnover, reducing bookings, and resulting in costly litigations. One way to get it all under control is to use a Process safety management (PSM) in one place, and by adopting proper risk management protocols, hotel managers can protect the welfare of their guests and employees by reducing their exposure to potential hazards.

(Adapted from Tiernan, D., *Health and Safety in the Hotel Industry – An Essential Guide*, 2022)

III Answer the following questions:

1 What is the relationship between health and safety hazards and the hospitality industry?

2 What are some health and safety protocols that hoteliers can use to protect staff and guests in the hotel?

3 List a few standard health and safety hazards in the hospitality industry?

4 In what way can health and safety protocols help to ensure a better hotel's performance?

5 How can hotels provide safety to their guests?

6 Can you list some of the responsibilities of the following key stakeholders in the hotel industry: a) hotel managers

b) employees

c) guests

IV Underline one word in each group that does not belong there:

1 hospitality industry – lucrative, risky, advertising agencies, stakeholders, challenging

2 staff – qualified/ trained staff, high turnover rate, evoke customer complaints

3 potential hazards for guests – slips, stove, trips, burns, poisoning

4 hotel managers – a good communicator, overworking and not delegating tasks, decisive, financial skill

V Match the verbs in column A with the most appropriate word(s) in column B:

1 to maintain	a) a hotel's performance
2 to affect	b) deficiencies in safety protocols
3 to address	c) personal hygiene
4 to reduce	d) a reputation
5 to develop	e) the impact of something

VI What is the opposite of the following:

1 seasonal worker ≠

2 costly (medical care) ≠

3 to minimise (the risk) ≠

4 significant (improvement) ≠

5 multiple (hazards) ≠

VII Give another word or a short explanation of the words in italics:

1 *lucrative* (industry, business, etc.)

2 to experience *frictionless* time

3 *compliance*, *comply with* with the company's regulations

4 companies try to avoid costly *litigations*

5 the hospitality industry attracts a younger *demographic*

VIII Which verbs from the text go with the following expressions:

1 _____ bookings

2 _____ protocols

3 _____ a role

4 _____ health and safety risks

5 _____ personnel

Unit 14

The most Important Safety Procedures in a Hotel

I Warm up

1 Can you think of any safety procedures that should be carried out in a hotel?

2 Are these procedures typical for safety in a hotel or do they represent general procedures that could be applied to any working environment?

II Read the text and match the headings (a-d) with the paragraphs (1-4)

a) **Crime Prevention Through Environmental Design (CPTED)**

b) **Hazard Analysis Critical Control Point (HACCP)**

c) **What are the five most common health and safety risks in hospitality?**

d) **Regular fire drills and staff safety training**

This being such a broad question and heavily dependant on the individual environment the text provides an answer in a broad manner. Here are the three most important procedures that could readily apply to any establishment under the sun if the goal is to reduce risks of the most common type.

1 _____

In the event of a fire do you want your staff struggling to remember the motions they'd gone through before Christmas two years ago? You do not. In your role as a hotel manager it is important to regularly take your staff through the motions of what to do in the event of a fire or another such risk.

Why regularly, you might ask, or indeed how regularly? To the latter I'd say five to six times a year across departments and to the former I'd remind you of the concept of muscle memory. In much the same way you might have heard of the deathly calm with which pilots operate in times of duress you want your staff practically bored of the quickest and most efficient manner to empty your premises of all souls. Bored and reassuring and – consequently – safe. It's not only the floor plans and evacuation actions you wish to make mundane for them. Regular staff training should include things like communication, correct lifting techniques

when it comes to heavy loads and anything else you can think of that you'd like to be shorthand for your staff.

2 _____

What worked for Rudy Giuliani in New York can work for you in your premises. It should not be news to you that much of the dangers posed to a premises can happen at the hand of ones guests and there are a few reasonable steps one can take to make one's property the kind of place that discourages bad and dangerous behaviour.

As suggested by research, an alley covered in graffiti is about twice as likely to be the location of a crime than a clean one. So too with hotels. Good housekeeping and good lighting are two very basic steps one can take to encourage good behaviour in one's guests and employees.

The mere presence of a security guard at night is amongst the simplest ways to make a potential miscreant think twice. Similarly, keeping the exterior of one's property well maintained is a statement all of its own. It might seem rash to be outlining the danger of working with the public but the fact is the public untethered is as unpredictable as a wild animals.

Designing your environment in such a way as to discourage bad and consequently dangerous behaviour can be as effective in preventing serious harm as the placing of a sign with a common hazard symbol in front of a wet floor.

3 _____

This final one is only technically applicable – and probably well known already – to properties that serve food to their guests. It is an internationally recognised set of protocols to make sure that not only any danger resulting from the consumption of food can be actively prevented but that in the unfortunate event that something does occur that the danger may be traced and eliminated.

I say this is only technically applicable to food serving premises because the principles are quite technical. A hotel that only offers coffee in the morning has no need to worry about the five types of chopping boards that ought to be stored and washed separately, for example.

That said the idea of operating on a list of principles that allow one to track and eliminate risks are adaptable to fire plans – fire doors, for example – and a whole host of other potential hazards and are thus well worth reading up on.

4 _____

A truck crashing into your lobby area is unfortunate, sure, but is there any need to prepare for such a scenario. No, realistically, but I can think of at least five that are worth keeping an eye on for the sake of guests and staff alike.

1 Slips, trips and falls

If the above bit of alliteration is alien to you then congratulations – you've made it x amount of years in the hospitality business without encountering the mother of all injury causes. Good housekeeping is a good preventative measure, as well as making it obligatory for staff to wear appropriate footwear and not to rush. Accidents of this nature simply will happen – it's up to you to negatively affect the frequency.

2 Injury due to poor manual handling

As I'm sure is detailed in any number of safety at work acts internationally it is a legal obligation to provide a manual handling course for workers who will need to lift objects from the ground regularly at work. Even if your establishment isn't obliged by a safety law or legislation it's a great way to be proactive about your staff's health, never mind prevent musculoskeletal injuries.

3 Hazardous Chemicals

Even those of you who do not operate a commercial kitchen on the premises are surely aware of a room in your hotel where it seems appropriate to cover one's mouth before entering for fear of intoxication by fumes. I am of course referring to one's cleaning store. If you do serve food you'll surely be aware of the ill effects on one's health prolonged exposure to a gas stove in a poorly ventilated area can have, given the large amounts of carbon dioxide gases that are given off by a typical stove. The chemicals you work with can take their toll on staff and guests alike if not handled and used with care and respect.

4 Fire

For reasons that I hope don't need explaining fire prevention is key but just like with slips, trips and falls fires do happen and it's up to you to train your staff to know how to deal with them in the moment.

5 Mental ill-health

This one gets past far too many people but the fact is the *high-pressure* environment of a busy hotel can take a toll on one not well equipped to take care of themselves between the ears.

Keep an open door in HR (Human Resources) and if HR is you, make sure everyone knows there are ears available if anyone needs to talk.

(Adapted from Tiernan, D., *Health and Safety in the Hotel Industry – An Essential Guide*, 2022)

III Answer the following questions:

1 What are the three most important procedures that could apply to any establishment, hotel industry included?

2 As a hotel manager how often should you take your staff through the steps of what to do in the event of a fire or a similar risk? Why as often as that?

3 What should regular staff training include?

4 Which measures can you take to keep the hotel and its environment safe and discourage bad and consequently dangerous behaviour?

5 What are some of the principles applied if you serve food in your hotel?

6 List the five most common health and safety risks in hospitality and explain briefly each of them!

IV Make adjectives from the following nouns and use them in sentences of your own:

1 application

2 prevention

3 fortune

4 commerce

5 consumption

V Match the words in column A with the most appropriate word in column B:

A	B
1 mere	a) loads
2 security	b) ventilation
3 poor	c) guard
4 evacuation	d) actions
5 heavy	e) presence

VI Fill in the gaps with the correct form of one the following phrasal verbs:

■ to keep an eye on ■ to take a toll on ■ to get past

■ to read up on ■ to give off

1 It would be a good idea to _____ the company safety procedures and then prepare a list of questions for your future employer.

2 Even though health issues related to stress are quite frequent in a *high-pressure* working environment, these ones _____ far too many people.

3 I'm sure you will agree that we must _____ all our running costs if we want to succeed.

4 Stress, lack of sleep and family problems have _____ him.

5 Pieces of melted plastic fell to the floor, _____ dark smoke that smelled like burnt rubber.

VII Find the words in the text that mean the following:

1 shoes, boots, socks, etc.

2 someone who does something wrong or commits a crime, a wretch, a villain

3 to tie an animal or object to something so that it will stay in a particular area

4 gas found in atmosphere and formed by respiration

5 make drunk

VIII What is the style of the text *The most important safety procedures in a hotel*?

Considering the following characteristics of the text may help you decide on its style.

Formal	**Informal**
impersonal, professional, official	personal and friendly
standard English	colloquial vocabulary, the use of slang
does not use contractions	use of contractions and abbreviations
more complex sentences	short and simple sentences

Reread the text and write down all the examples of informal language – vocabulary, grammar, structure, etc.

Vocabulary _____

Grammar ad structure of the sentences _____

_____

Unit 15 Quality Assurance (QA)

I Warm up

1 What is meant by the term 'quality assurance'?

2 Which methods are used in quality assurance?

3 Are you familiar with any term(s) closely linked with quality assurance?

II Read the text and match the headings (a-h) with the paragraphs (1-8)

a) **Quality Assurance vs. Quality Control**

b) **QA standards**

c) **Quality assurance methods**

d) **QA vs. testing**

e) **QA uses by industry**

f) **Importance of quality assurance**

g) **Pros and cons of QA**

h) **History of ISO and QA**

Quality assurance (QA) is any systematic process of determining whether a product or service meets specified requirements.

QA establishes and maintains set requirements for developing or manufacturing reliable products. A quality assurance system is meant to increase customer confidence and a company's credibility, while also improving work processes and efficiency, and it enables a company to better compete with others.

The ISO (International Organization for Standardization) is a driving force behind QA practices and mapping the processes used to implement QA. QA is often paired with the ISO 9000 international standard. Many companies use ISO 9000 to ensure that their quality assurance system is in place and effective.

The concept of QA as a formalized practice started in the manufacturing industry, and it has since spread to most industries, including software development.

1 _____

Quality assurance helps a company create products and services that meet the needs, expectations and requirements of customers. It yields *high-quality* product offerings that build trust and loyalty with customers. The standards and procedures defined by a quality assurance program help prevent product defects before they arise.

2 _____

Quality assurance utilizes one of three methods:

- **Failure testing**, which continually tests a product to determine if it breaks or fails. For physical products that need to withstand stress, this could involve testing the product under heat, pressure or vibration. For software products, failure testing might involve placing the software under high usage or load conditions.

- **Statistical process control (SPC)**, a methodology based on objective data and analysis and developed by Walter Shewhart at Western Electric Company and Bell Telephone Laboratories in the 1920's and 1930's. This methodology uses statistical methods to manage and control the production of products.

- **Total quality management (TQM)**, which applies quantitative methods as the basis for continuous improvement. TQM relies on facts, data and analysis to support product planning and performance reviews.

3 _____

Some people may confuse the term quality assurance with quality control (QC). Although the two concepts share similarities, there *are* important distinctions between them.
In effect, QA provides the overall guidelines used anywhere, and QC is a *production-focused* process – for things such as inspections. QA is any systematic process for making sure a product meets specified requirements, whereas QC addresses other issues, such as individual inspections or defects.
In terms of software development, QA practices seek to prevent malfunctioning code or products, while QC implements testing and troubleshooting and fixes code.

4 _____

Although simple concepts of quality assurance can be traced back to the Middle Ages, QA practices became more important in the United States during World War II, when high volumes of munitions had to be inspected.

The ISO opened in Geneva in 1947 and published its first standard in 1951 on reference temperatures for industrial measurements. The ISO gradually grew and expanded its scope of standards.

The ISO 9000 family of standards was published in 1987; each 9000 number offers different standards for different scenarios.

5 _____

QA standards have changed and been updated over time, and ISO standards need to change in order to stay relevant to today's businesses.

The latest in the ISO 9000 series is ISO 9001:2015. The guidance in ISO 9001:2015 includes a stronger customer focus, top management practices and how they can change a company, and keeping apace of continuing improvements. Along with general improvements to ISO 9001, ISO 9001:2015 includes improvements to its structure and more information for *risk-based decision-making*.

6 _____

The following are a few examples of quality assurance in use by industries:

- **Manufacturing**, the industry that formalized the quality assurance discipline. Manufacturers need to ensure that assembled products are created without defects and meet the defined product specifications and requirements.
- **Food production**, which uses X-ray systems, among other techniques, to detect physical contaminants in the food production process. The X-ray systems ensure that contaminants are removed and eliminated before products leave the factory.
- **Pharmaceutical**, which employs different quality assurance approaches during each stage of a drug's development. Across the different stages, the QA processes include reviewing documents, approving equipment calibration, reviewing training records, reviewing manufacturing records and investigating market returns.

7 _____

QA is different from testing. QA is more focused around processes and procedures, while testing is focused on the logistics of using a product in order to find defects. QA defines the standards around testing to ensure that a product meets defined business requirements. Testing involves the more tactical process of validating the function of a product and identifying issues.

8 _____

The quality of products and services is a key competitive differentiator. Quality assurance helps ensure that organizations create and ship products that are clear of defects and meet the needs and expectations of customers. *High-quality* products result in satisfied customers, which can result in customer loyalty, repeat purchases, upsell and advocacy.

Quality assurance can lead to cost reductions stemming from the prevention of product defects. If a product is shipped to customers and a defect is discovered, an organization incurs cost in customer support, such as receiving the defect report and troubleshooting. It also

acquires the cost in addressing the defect, such as service or engineering hours to correct it, testing to validate the fix and cost to ship the updated product to the market.

QA does require a substantial investment in people and process. People must define a process workflow and oversee its implementation by members of a QA team. This can be a *time-consuming* process that impacts the delivery date of products. With few exceptions, the disadvantage of QA is more a requirement – a necessary step that must be undertaken to ship a quality product. Without QA, more serious disadvantages arise, such as product bugs and the market's dissatisfaction or rejection of the product.

(Adapted from Gillis, A.S., *Quality Assurance*, 2019)

III Make five to six questions on the text and then give answers to them.

IV Which adjectives are used with the following nouns. With some nouns there are several possible answers:

1 _____ process
2 _____ product
3 _____ investment
4 _____ guidelines
5 _____workflow

V Find the verbs in the text that go with the following expressions:

1 _____ a necessary step
2 _____ the needs and expectations of customers
3 _____ the standards and procedures
4 _____ stress
5 _____ of continuing improvements

VI Put the correct preposition in the gaps:

1 QA standards have been changed and updated _____ time in order to stay relevant ____ today's businesses.
2 Quality assurance requires a considerable investment ____ people and process.
3 Although Quality Assurance and Quality Control are two concepts and they share

certain similarities, there are important differences _____ them.

4 The ISO published its first standard _____ 1951 _____ reference temperatures for industrial measurements.

5 The standards and procedures defined _____ a quality assurance program help prevent product defects _____ they arise.

6 Quality assurance, among other things, can lead to cost reductions stemming _____ the prevention of product defects.

VII Find the words in the text that mean the following:

1 to see or show a difference between things; to be the quality or fact that makes one thing different from another

2 failure to function normally

3 a substance that makes something dirty, polluted, or poisonous

4 to try to persuade a customer who is already buying something to buy more, or to buy something more expensive

5 shortcoming, fault, deficiency, imperfection, blemish

VIII Write the following examples under the correct heading – Quality Assurance or Quality Control:

- performing lab tests
- investigating procedures
- taking product samples
- conducting validation tests
- managing suppliers
- documenting and recording
- doing batch inspections
- monitoring change control
- conducting personal training
- performing audits

Quality Assurance	**Quality Control**
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

Glossary

A

actionable (ˈakʃənəbl) *adjective* able to be done or acted on; having practical value

advocacy (ˈadvəkəsi) *noun* **1** public support for or recommendation of a particular cause or policy; promotion, promoting

2 the profession or work of a legal advocate

air duct (ɛə dʌkt) *noun* a pipe or channel permitting air to travel through a system, building, or other structure, such as a mine

aisle (aɪl) a long, narrow space between rows of seats in an aircraft, cinema, or church

alien (ˈeɪlɪən) *adjective* **1** belonging to a foreign country: foreign, external

2 unfamiliar and disturbing or distasteful; unknown

alliteration (əˌlɪtəˈreɪʃn) *noun* the occurrence of the same letter or sound at the beginning of adjacent or closely connected words

ascribe (to) (əˈskrʌɪb) *verb* regard something as being due to (a cause); regard a quality as belonging to; to attribute to

arachnid (əˈraknɪd) *noun* an arthropod of the class *Arachnida*, such as a spider or scorpion

attribute (əˈtrɪbjuːt) *verb* to believe that something is the result of a particular situation, event, or person's actions; regard something as being caused by

►attributable (əˈtrɪbjʊtəb(ə)l) *adjective* regarded as being caused by

B

beryllium (bɪˈrɪlɪəm) *noun* the chemical element of atomic number 4, a hard grey metal

blatant (ˈbleɪ.tənt) *adjective* very obvious and intentional, when this is a bad thing

blue-collar worker(s) *noun* individuals who engage in hard manual labor, typically in the agriculture, manufacturing, construction, mining, or maintenance sectors. Most of these people historically wore blue collared shirts when they worked.

butt of the jokes – to be /to feel the butt of the jokes *phrase* a person who is joked about or laughed at

C

cable (ˈkeɪbl) *noun* 1 a thick rope of wire or hemp used for construction, mooring ships, and towing vehicles 2 an insulated wire or wires having a protective casing and used

for transmitting electricity or telecommunication signals

calibrate (ˈkalɪbreɪt) *verb* **1** mark (a gauge or instrument) with a standard scale of readings **2** adjust (experimental results) to take external factors into account or to allow comparison with other data

calibration (ˌkalɪˈbreɪʃn) *noun* the action or process of calibrating something

carbon disulfide (ˈkɑːbəndʌɪˈsʌlfʌɪd) *noun* a colourless toxic flammable liquid used as a solvent, especially for rubber and sulphur

causation (kɔːˈzeɪˌʃən) the process of causing something to happen or exist

chilblain (ˈtʃɪlbleɪn) *noun* a painful, itching swelling on a hand or foot, caused by poor circulation in the skin when exposed to cold

coerce (kəʊˈəːs) *verb* persuade (an unwilling person) to do something by using force or threats, pressure

compound (kəmˈpaʊnd) *verb* **1** make (something bad) worse; intensify the negative aspects of, aggravate, worsen, make worse **2** make up (a composite whole); constitute, be composed of

conjunction (kənˈdʒʌŋ(k)ʃn) *noun* the act or an instance of conjoining, the state of being conjoined, combination

constrict (kənˈstrɪkt) *verb* make narrower, especially by encircling pressure, compress, contract, tighten

contain (kənˈteɪn) *verb* 1 have or hold (someone or something) within
2 control or restrain (oneself or a feeling)

covert (kəʊˈvəːt) *adjective* not openly acknowledged or displayed; secret, furtive

cure (kjʊə,kjɔː) *verb* harden (rubber, plastic, concrete, etc.) after manufacture by a chemical process such as vulcanization; undergo hardening by a chemical process, e.g. the early synthetic rubbers were much more difficult to cure than natural rubber

curtail (kəːˈteɪl) *verb* reduce in extent or quantity; impose a restriction on; reduce, cut, cut down, decrease, lessen

D

deficiency (dɪˈfɪʃ(ə)nsi) *noun* a lack or shortage, deficit; a failing or shortcoming, defect, fault, flaw

dehydrate (ˌdiːhʌɪˈdreɪt) *verb* cause (a person or their body) to lose a large amount of water

dehydration (ˌdiː.haɪˈdreɪˌʃən) *noun* the absence of a sufficient amount of water in your body

demean (dɪˈmiːn) *verb* cause a severe loss in the dignity of and respect for (someone or something); degrade, humiliate

diarrhea (ˌdʌɪəˈrɪə) *noun* condition of excessively loose, watery and frequent bowel movements

differentiator (ˌdɪfəˈrɛnʃɪeɪtə) *noun* something that enables a difference or distinction to be made

drowsiness (ˈdraʊzɪnɪs) *noun* a feeling of being sleepy and lethargic; sleepiness

duress (djʊˈrɛs,ˈdjʊərɪs) *noun* threats, violence, constraints, or other action used to coerce someone into doing something against their will or better judgement; compulsion, force, pressure

E

eligible (ˈɛlɪdʒɪbl) *adjective* having the right to do or obtain something; satisfying the appropriate conditions

encompass (ɪnˈkʌmpəs,ɛnˈkʌmpəs) *verb* to include a large number or range of things

entail *verb* (ɪnˈteɪl,ɛnˈteɪl) *verb* involve (something) as a necessary or inevitable part or consequence; make necessary, require, need

eradicate (ɪˈradɪkeɪt) *verb* destroy completely; put an end to

exacerbate *verb* (ɪgˈzasəbeɪt,ɛgˈzasəbeɪt) make (a problem, bad situation, or negative feeling) worse; aggravate, worsen

F

Farmer's Lung, an allergic disease usually caused by breathing in the dust from moldy hay; dust from any moldy crop – straw, corn, silage, grain, or even tobacco can also cause Farmer's Lung

fissure (ˈfɪʃə) *noun* a long, narrow opening or line of breakage made by cracking or splitting, especially in rock or earth; opening

flotation (flə(ʊ)ˈteɪʃn) *noun* the separation of small particles of a solid by their different capacities to float

flue (fluː) *noun* a duct for smoke and waste gases produced by a fire, a gas heater, a power station, or other fuel-burning installation; a channel for conveying heat; tube, passage, channel

fly ash *noun* ash produced in small dark flecks by the burning of powdered coal or other materials and carried into the air

forage crops *noun* crops grown specifically to be grazed by livestock or conserved as hay or silage

frayed (freɪd) *adjective* (of a fabric, rope, or cord) unravelled or worn at the edge; (of a person's nerves or temper) showing the effects of strain

frictionless (ˈfrɪkʃənləs) *adjective* not impeded by or creating friction; smooth, achieved with or involving little difficulty, effortless

G

get past (someone) (*phrasal verb*) **1** not to be noticed or realized by someone

2 also to be able to pass an obstacle

give off *verb* emit for e.g. *to give off* an unpleasant smell

grievance (ˈgriːvns) *noun* a real or imagined cause for complaint, especially unfair treatment; injustice, unjust act, wrong, injury, offence

grinder /ˈgraɪn.dər/ *noun* a machine used to rub or press something until it becomes a powder

H

hemangiosarcoma (he·man·gio·sar·ko·ma) *noun* cancer of the vascular endothelium, or the blood vessel walls

hinder (ˈhɪndə) *verb* make it difficult for (someone) to do something or for (something) to happen; to obstruct

►hindrance (ˈhɪndr(ə)ns) *noun* a thing that provides resistance, delay, or obstruction to something or someone; impediment, obstacle

hypothermia (ˌhaɪpəˈθɜːmiə) *noun* a medical emergency that occurs when your body loses heat faster than it can produce heat, body core temperature (in humans) drops below 35.0 °C (95.0 °F)

I

impair (ɪmˈpɛː) *verb* weaken or damage (something, especially a faculty or function), damage, harm, diminish

incidence (ˈɪnsɪd(ə)ns) *noun* the occurrence, rate, or frequency of a disease, crime, or other undesirable thing

incineration (ɪnˌsɪnəˈreɪʃn) *noun* the destruction of something, especially waste material, by burning

incipient (ɪnˈsɪpɪənt) *adjective* beginning to happen or develop

incur (ɪnˈkəː) *verb* become subject to (something unwelcome or unpleasant) as a result of one's own behaviour or actions, to suffer, to experience

ingrained (ɪnˈgreɪnd) *adjective* **1** (of dirt or a stain) deeply embedded and thus difficult to remove **2** (of a habit, belief, or attitude) firmly fixed or established; difficult to change

institute (ˈɪnstɪtjuːt) *verb* introduce or establish (a scheme, undertaking, or policy); set in motion, put in motion

intimidate (ɪnˈtɪmɪdeɪt) *verb* frighten or overawe (someone), especially in order to make them do what one wants; menace

ion exchange (aɪən ɪkstʃeɪndʒ) *noun* the process of reciprocal transfer of ions between a solution and a resin or other suitable solid

irksome (ˈəːks(ə)m) *adjective* irritating, annoying

K

keep apace of/with (*phrasal verb*) to change or increase as fast as something else, or to move as fast as someone else; to develop or progress at the same rate as something else

L

lanyard (ˈlanjɑːd,ˈlanjəd) *noun* a rope used to secure or raise and lower something such as the shrouds and sails of a sailing ship or a flag on a flagpole;
a cord passed round the neck, shoulder, or wrist for holding a knife, whistle, or similar object

leach (liːtʃ) *verb* (with reference to a soluble chemical or mineral) drain away from soil, ash, or similar material by the action of percolating (filter gradually) liquid, especially rainwater

lead colic (lɛd) a symptom of lead poisoning characterized by intense abdominal pain; also called 'painter's colic'

lethal (ˈliːθl) *adjective* sufficient to cause death, very harmful or destructive

lime (lʌɪm) *noun* 1 a white caustic alkaline substance consisting of calcium oxide, which is

obtained by heating limestone and which combines with water with the production of much heat; quicklime

2 (in general use) any of a number of calcium compounds, especially calcium hydroxide, used as an additive to soil or water

line manager *noun* a person with direct managerial responsibility for a particular employee

litigation (ˌlɪtɪˈgeɪʃn) *noun* the process of taking legal action, lawsuit

live (lʌɪv) *adjective* (of a wire or device) connected to a source of electric current; electrified, charged, powered, active

lucrative (ˈl(j)uːkrətɪv) *adjective* producing a great deal of profit; profitable

M

manhole (ˈmanhəʊl) *noun* a small covered opening in a paved area allowing access beneath, especially one leading to a sewer

manifest (ˈmanɪfɛst) *noun* a document listing a ship's contents, cargo, passengers, and crew, for the use of customs officers; a list of passengers or cargo in an aircraft; a list of the wagons forming a freight train

mercury (ˈməːkjʊri) *noun* the chemical element of atomic number 80, a heavy silvery-white metal which is liquid at ordinary temperatures

metalliferous (ˌmɛtəˈlɪf(ə)rəs) *adjectve* (chiefly of deposits of minerals) containing or producing metal

►metalliferous mining (industries) - underground and open cut mining and processing for minerals including iron ore, copper, nickel, gold, silver, zinc, gemstones, uranium and mineral sands

microbe (ˈmʌɪkrəʊb) noun a microorganism, especially a bacterium causing disease or fermentation

miscreant (ˈmɪskrɪənt) *noun* a person who has done something wrong or unlawful; criminal, culprit, wrongdoer, offender

adjective (of a person) behaving badly or unlawfully, e.g. "her miscreant husband"

mite (mʌɪt) *noun* a minute arachnid which has four pairs of legs when adult, related to the ticks; many kinds live in the soil and a number are parasitic on plants or animals

mitigate (ˈmɪtɪgeɪt) *verb* make (something bad) less severe, serious, or painful; alleviate, reduce, diminish

mould (məʊld) *noun* a soft, green or grey growth that develops on old food or on objects that

have been left for too long in warm, wet air

mundane (ˌmʌnˈdeɪn) *adjective* **1** lacking interest or excitement; dull, boring, monotonous **2** of this earthly world rather than a heavenly or spiritual one; earthly, worldly, terrestrial, material

myriad (ˈmɪrɪəd) *noun* a countless or extremely great number of people or things; multitude

N

nickel (ˈnɪk.əl) *noun* a chemical element that is a silver-white metal

nickel oxide (ˈnɪk.əl ˈɒksʌɪd) (chemistry) a green, water-insoluble powder, used chiefly in the manufacture of nickel salts and in green pigments for ceramic paints

nitrogen oxide (naɪtrədʒən ɒksaɪdz) *noun* any of several oxides of nitrogen most of which are produced in combustion and are considered to be atmospheric pollutants: such as nitric oxide, nitrogen dioxide, nitrous oxide

noxious (ˈnɒkʃəs) *adjective* harmful, poisonous, or very unpleasant

numbness (ˈnʌmnəs) *noun* a loss of sensation or feeling in a part of your body

O

offset (ˌɒfˈsɛt,ˈɒfsɛt) *verb* counteract (something) by having an equal and opposite force or effect, to balance, e.g. donations to charities can be **offset against** tax

outing (ˈaʊtɪŋ) *noun* a trip taken for pleasure, especially one lasting a day or less

overbearing (ˌəʊvəˈbɛːrɪŋ) *adjective* unpleasantly overpowering, domination, domineering

overly (ˈəʊvəli) *adverb* excessively; unduly

P

palpitation (ˌpalpɪˈteɪʃn) *noun* a noticeably rapid, strong, or irregular heartbeat due to agitation, exertion, or illness

perpetrator (ˈpəːpɪtreɪtə) *noun* a person who carries out a harmful, illegal, or immoral act

perspiration (ˌpəːspəˈreɪʃn) *noun* the process of sweating

pertain (pəˈteɪn) *verb* be appropriate, related, or applicable to

percipitate (prɪˈsɪpɪteɪt) *verb* (chemistry) to cause (a substance) to be deposited in solid form from a solution

physiological (ˌfɪzɪəˈlɒdʒɪkl) *adjective* relating to the branch of biology that deals with the

normal functions of living organisms and their parts; relating to the way in which a living organism or bodily part functions

pick on (someone) repeatedly single someone out for criticism or unkind treatment in a way perceived to be unfair; bully, victimize

polymerization (ˌpɒl.ɪ.mər.aɪˈzeɪ.ʃən) *noun* any process in which relatively small molecules, called monomers, combine chemically to produce a very large chainlike or network molecule, called a polymer

precipitation (prɪˌsɪpɪˈteɪʃn) *noun* (chemistry) the action or process of precipitating a substance from a solution

primer (ˈprʌɪmə) *noun* (in cosmetics) a cosmetic applied to the face before another product, intended to improve the coverage and lasting effect of the second product

proactive (prəʊˈaktɪv) *adjective* (of a person or action) creating or controlling a situation rather than just responding to it after it has happened; enterprising, take-charge, energetic

provision (prəˈvɪʒn) *noun* **1** a condition or requirement in a legal document; term, clause, requirement **2** the action of providing or supplying something for use

pull (pʊl) *noun* an injury to a muscle or ligament caused by abnormal strain

pulmonary (ˈpʌlmən(ə)ri) *adjective* relating to the lungs

put down (to put somebody down) *informal* to make somebody look or feel stupid, especially in front of other people

R

rayon (ˈreɪɒn) *noun* a textile fibre or fabric made from regenerated cellulose (viscose)

read up on (something) (*phrasal verb*) to read a lot about something because you will need to know about it

recurring (rɪˈkəːrɪŋ) *adjective* 1 occurring again periodically or repeatedly

2 (of a thought, image, or memory) repeatedly coming back to a person's mind

remediate (rɪˈmiːdɪeɪt) *verb* restore by reversing or stopping environmental damage; provide a remedy for; redress or make right

resort (rɪˈzɔːt) *verb* to have recourse for use, help, or accomplishing something, often as a final available option or resource;

noun a person or thing resorted to for aid, satisfaction, service, etc.; also a place to which people frequently or generally go for relaxation or pleasure, especially one

providing rest and recreation facilities for vacationers

S

sanitation (ˌsanɪˈteɪʃn) *noun* conditions relating to public health, especially the provision of clean drinking water and adequate sewage disposal

scrotal ('skrəʊtəl) *adjective* relating to or having or lying within a scrotum

scrotum (ˈskɪəʊ.təm) (*plural* scrotums *or* scrota) (*anatomy*) *noun* the sac of skin and muscle that contains the testicles in most mammals

sensory sensitivity, refers to how aware persons are with regard to each of their sensory channels: sight, sound, taste, smell, touch, and pain

sewage (ˈs(j)uːɪdʒ) *noun* waste water and excrement conveyed in sewers

sewer (ˈsuːə) *noun* an underground conduit for carrying off drainage water and waste matter

sharp (ʃɑːp) *noun* a thing with a sharp edge, such as a blade or a fragment of glass

shorthand (ˈʃɔːthand) *noun* **1** a method of rapid writing by means of abbreviations and symbols, used especially for taking dictation

2 a short and simple way of expressing or referring to something

sludge (slʌdʒ) *noun* **1** thick, soft, wet mud or a similar viscous mixture of liquid and solid components, especially the product of an industrial or refining process, e.g. the dumping of sewage sludge **2** an unattractive muddy shade of brown or green

smelter (ˈsmɛltə) *noun* an installation or factory for smelting a metal from its ore; a person engaged in the business of smelting

►to smelt, *verb* melt (ore) to extract metal, to obtain (metal) thus

snide (snʌɪd) *adjective* derogatory or mocking in an indirect way

solidify (səˈlɪdɪfʌɪ) *verb* make or become hard or solid; make stronger, reinforce, harden, thicken, stiffen

soot (sʊt) *noun* a deep black powdery or flaky substance consisting largely of amorphous carbon, produced by the incomplete burning of organic matter

staggering (ˈstag(ə)rɪŋ) *adjective* deeply shocking; astonishing

stakeholder (ˈsteɪkˌhəʊldə) *noun* denoting a type of organization or system in which all the members or participants are seen as having an interest in its success

statutory (ˈstatʃʊt(ə)ri) *adjective* required, permitted, or enacted by statute

stem from (*phrasal verb*) to start or develop as the result of something; to be the result of something

strenuous (ˈstrɛnjʊəs) *adjective* requiring or using great effort or exertion

subtle (ˈsʌtl) *adjective* **1** making use of clever and indirect methods to achieve something;
2 (especially of a change or distinction) so delicate or precise as to be difficult to analyse or describe

surveillance (səˈveɪləns, səˈveɪ(j)əns) *noun* close observation, especially of a suspected spy or criminal; observation, watch

synergy (ˈsɪnədʒi) *noun* (also synergism) the interaction or cooperation of two or more organizations, substances, or other agents to produce a combined effect greater than the sum of their separate effects

T

tarpaulin (tɑːˈpɔːlɪn) *noun* heavy-duty waterproof cloth, originally of tarred canvas, e.g. a stretch of roof is covered with tarpaulin

tether (ˈtɛðə) *verb* tie (an animal) with a rope or chain so as to restrict its movement; tie (up)

toll (təʊl) *noun* **1** a charge payable to use a bridge or road; fee, payment
2 the number of deaths or casualties arising from a natural disaster, conflict, accident, etc. , number, total, for e.g. "the toll of dead and injured mounted"
►to take a toll on (*phrase*) to cause suffering, deaths, or damage

trench foot (ˈtrentʃ ˌfʊt) *noun* a painful condition of the feet caused by long immersion in cold water or mud and marked by blackening and death of surface tissue

troubleshoot (ˈtrʌblʃuːt) *verb* analyse and solve serious problems for a company or other organization

turnover (ˈtəːnˌəʊvə) *noun* the rate at which employees leave a workforce and are replaced; rate of replacement, coming and going

U

ultimate (ˈʌltɪmɪt) *adjective* conclusive in a series or process; last; final, for e.g. an ultimate question; the highest or most significant, for e.g. the ultimate goal.

undermine (ˌʌndəˈmʌɪn) *verb* **1** erode the base or foundation of (a rock formation)
2 lessen the effectiveness, power, or ability of, especially gradually or insidiously

untether (ʌnˈtɛðə) *verb* release or free from a **tether**

unwarranted (ʌnˈwɒrəntɪd) *adjective* not justified or authorized

upsell (ˈʌpsɛl) *verb* persuade a customer to buy something additional or more expensive

V

validate (ˈvalɪdeɪt) *verb* check or prove the validity or accuracy of; make or declare legally valid

vermin (ˈvəːmɪn) *noun* (usually treated as plural) **1** wild animals that are believed to be harmful to crops, farm animals, or game, or which carry disease, e.g. rodents **2** parasitic worms or insects **3** people perceived as despicable and as causing problems for the rest of society

victimisation (ˌvɪktɪmʌɪˈzeɪʃn) *noun* the action of singling someone out for cruel or unjust treatment ►to victimise *verb* (also –ize)

vigilance (ˈvɪdʒɪləns) *noun* the action or state of keeping careful watch for possible danger or difficulties; watchfulness, careful observation, surveillance

vynil chloride (vaɪ.nəl ˈklɔːr.aɪd) *noun* (chemistry) a colourless toxic gas used in the production of polyvinyl chloride and other commercially important polymers

W

weathering (ˈwɛð(ə)rɪŋ) *noun* the process of wearing or being worn by long exposure to the atmosphere, e.g. aluminium is highly resistant to weathering

white-collar worker *noun* a person who performs professional, desk, managerial, or administrative work. See also 'blue-collar worker'.

withstand (wɪðˈstand) *verb* remain undamaged or unaffected by; resist; offer strong resistance or opposition to

Y

yield (jiːld) *verb* **1** produce or provide (a natural, agricultural, or industrial product), e.g. "the land yields grapes and tobacco"

2 give way to arguments, demands, or pressure; surrender

English-Croatian Glossary / Englesko-hrvatski rječnik stručnog nazivlja

Popis kratica koje su upotrebljene u ovom rječniku

anat (anatomy) anatomija

chem (chemistry) kemija

el (electricity) koji se odnosi na elektricitet, električnu struju

fig (figurative) figurativno, u prenesenom značenju

mar (maritime) pomorski, brodski

med (medicine) medicina

mil (military) vojnički, vojni

tech (technical) tehnički

zool (zoology) zologija

A

air duct (ɛə dʌkt) *noun* kanal, provodni kanal, cijev ili kanal koji omogućava protok zraka npr. u zgradi ili rudniku

arachnid (əˈraknɪd) *noun zool* kukac sličan pauku, paučnjak

B

beryllium (bɪˈrɪlɪəm) *noun chem* berilij, tvrdi siv metal

blue-collar worker(s) *noun* industrijski radnik, manuelni radnk, radnik u proizvodnji

C

cable (ˈkeɪbl) *noun mar* debelo uže (od žice), kabel, *elec* dovod

calibrate (ˈkalɪbreɪt) *verb* ustanoviti, izmjeriti kalibar, (radio) točno odrediti skalu

carbon disulfide (ˈkɑːbəndʌɪˈsʌlfʌɪd) *noun* ugljikov disulfid, bezbojna lako zapaljiva tekućina, upotrebljava se kao otapalo

chilblain (ˈtʃɪlbleɪn) *noun* ozeblina, promrzlina

coerce (kəʊˈəːs) *verb* prisiliti, prinuditi, primorati

compound (kəmˈpaʊnd) *verb* sjediniti, spojiti; povećati, pogoršati (uvredu npr.); izgladiti (spor)

constrict (kənˈstrɪkt) *verb* stisnuti, stegnuti, stezati, ograničiti

cure (kjʊə,kjɔː) *verb* kemijsko-tehničkog procesa pri kojem se pojačavaju i poboljšavaju svojstva nekog materijala kao npr. gume procesom vulkanizacije

curtail (kəːˈteɪl) *verb* smanjiti, ograničiti, srezati

D

deficiency (dɪˈfɪʃ(ə)nsi) *noun* nedostatak, manjak, nestašica, pogreška, mana

dehydrate (ˌdiːhʌɪˈdreɪt) *verb* dehidrirati

dehydration (ˌdiː.haɪˈdreɪˌʃən) *noun* deficit tekućine u tijelu, odnosno manjak tjelesne vode i elektrolita

diarrhea (ˌdʌɪəˈrɪə) *noun* dijareja, proljev

duress (djʊˈrɛs,ˈdjʊərɪs) *noun* prisila, pritisak, nasilje

E

eradicate (ɪˈradɪkeɪt) *verb* iskorijeniti, istrijebiti, osloboditi se čega

exacerbate (ɪgˈzasəbeɪt,ɛgˈzasəbeɪt) *verb* pogoršati (bolest), ogorčiti, ozlojediti

F

Farmer's Lung *noun* hipersenzitivni pneumonitis, sindrom u kojem su kašalj, dispneja i umor posljedica senzibilizacije, a kasnije alergijske reakcije na antigene iz vanjske sredine (obično profesionalne)

fissure (ˈfɪʃə) *noun* fisura, pukotina, napuklina, rascjep

flotation (flə(ʊ)ˈteɪʃn) *noun* plivanje, plutanje

flue (fluː) *noun* dimnjak, cijev kamina, kanal u zidu za dovođenje topline

fly ash *noun* leteći pepeo, mineralni ostatak koji nastaje kao proizvod izgaranja ugljena u visokim pećima termoelektrana

forage crops *noun* stočna hrana, usjevi koji se koriste kao krmivo

frayed (freɪd) *adjective* (za tekstil, materijal, uže) izlizan, istrošen, otrcan, pohaban; (o raspoloženju osobe) (pre)napet, iskidanih živaca, razdražljiv, zabrinut

frictionless (ˈfrɪkʃənləs) *adjective* bez trenja, neometan, gladak

G

grinder /ˈgraɪn.dər/ *noun* brusilica, drobilica, mlinac

H

hemangiosarcoma (he·man·gio·sar·ko·ma) *noun* hemangiosarkom, izrazito agresivan zloćudni tumor koji se javlja u endotelu krvnih žila

hypothermia (ˌhaɪpəˈθɜːmiə) *noun* hipotermija, ili pothlađenost se definira kao unutarnja temperatura tijela manja od 35.0 °C

I

impair *verb* /ɪmˈpɛː/ narušiti, oštetiti, oslabiti, umanjiti, naškoditi (zdravlju)

incidence (ˈɪnsɪd(ə)ns) *noun* učestalost, pojavljivanje, rasprostranjenost (neke bolesti, npr.)

incineration (ɪnˌsɪnəˈreɪʃn) *noun* spaljivanje, uništavanje nečega, posebno otpadnog materijala spaljivanjem

incur (ɪnˈkəː) *verb* izložiti se, pretrpjeti (gubitak), navući na se, izvrći se

ingrained (ɪnˈgreɪnd) *adjective* ukorijenjen, urođen, urastao

ion exchange (aɪən ɪkstʃeɪndʒ) *noun* ionska izmjena, postupak koji uključuje upotrebu ionskih izmjenjivača koji mogu vezati ione iz otopine, a otpuštati jednaku (ekvivalentnu) količinu vlastitih iona

L

lanyard (ˈlanjɑːd,ˈlanjəd) *noun mar* uže, kratki konop, podvezica za jedra i sl., *mil* gajtan, uzica za zviždaljku, potezna uzica za opaljivanje (topa); stezaljka od konopa

leach (liːtʃ) *verb* ispirati, isprati, prati, oprati lužinom, lužiti, otapati (vodom)

lead colic (lɛd) *med* kolika uzrokovana trovanjem olovom, simptom trovanja olovom koje uzrokuje jake bolove u abdomenu, naziva se još plumbizam, saturnizam, *colica pictorum*, slikarska kolika

lime (lʌɪm) *noun* vapno, kreč

live (lʌɪv) *adjective* (za žicu ili neki aparat) povezan s izvorom električne struje, elektrificiran, pod naponom

M

manhole (ˈmanhəʊl) *noun* otvor u zemlji koji omogućuje pristup podzemnom sustavu ili servisu, poput kanalizacije ili električnog sustava, šaht

manifest (ˈmanɪfɛst) *noun* brodski manifest, iskaz robe (za carinjenje); popis putnika ili tereta na avionu; popis vagona koji čine teretni vlak

mercury (ˈməːkjʊri) *noun* živa, živo srebro

metalliferous (ˌmɛtəˈlɪf(ə)rəs) *adjectve* (chiefly of deposits of minerals) koji sadrži ili proizvodi kovinu

microbe (ˈmʌɪkrəʊb) *noun* mikrob, bakterija

miscreant (ˈmɪskrɪənt) *noun* lopov, ništarija, nitkov, zločinac, hulja

mite (mʌɪt/) *noun* crv, grepalj, grinja, akar

mould (məʊld) *noun* plijesan; sipka zemlja, humus

N

nickel (ˈnɪk.əl) *noun chem* nikal, srebrno-bijeli metal

nickel oxide (ˈnɪk.əl ˈɒksʌɪd) *chem* niklov oksid

nitrogen oxide (naɪtrədʒən ɒksaɪdz) *noun* dušikov oksid

noxious (ˈnɒkʃəs) *adjective* štetan, škodljiv, opasan, nezdrav, ubitačan, otrovan

numbness (ˈnʌmnəs) *noun* tupost, neosjetljivost, ukočenost

P

palpitation (ˌpalpɪˈteɪʃn) *noun* kucanje, udaranje, lupanje (srca), udaranje (bìla); *fig* drhtanje, treperenje

perspiration (ˌpəːspəˈreɪʃn) *noun* znojenje, isparavanje

percipitate (prɪˈsɪpɪteɪt) *verb chem* taložiti se

physiological (ˌfɪzɪəˈlɒdʒɪkl) *adjective* fiziološki, koji je u skladu sa značajkama normalne građe i funkcija tkiva, organa i organskih sustava živoga organizma

polymerization (ˌpɒl.ɪ.mər.aɪˈzeɪ.ʃən) *noun* proces u kojemu se relativno male molekule zvane monomeri pod utjecajem katalizatora spajaju u dugačke lance stvarajući velike makromolekule, polimeri

primer (ˈprʌɪmə) *noun* (u kozmetici) osnovni sloj boje; temeljni namaz

provision (prəˈvɪʒn) *noun* propis, odredba, klauzula, član (u zakonu ili dokumentu)

pull (pʊl) *noun* istegnuće, ozljeda mišića ili ligamenta kao posljedica velikog naprezanja, napora; trzaj

pulmonary (ˈpʌlmən(ə)ri) *adjective* koji se odnosi na pluća, plućni

R

rayon (ˈreɪɒn) *noun* umjetno vlakno (celulozni acetat), umjetna svila, viskoza

remediate (rɪˈmiːdɪeɪt) *verb* izliječiti, popraviti, pomoći, obeštetiti, ukloniti (nepravdu)

S

sanitation (ˌsanɪˈteɪʃn) *noun* zdravstvo, zdravstvene mjere, briga za zdravstvo; sanitarije; kanalizacija

scrotum (ˈskɹəʊ.təm) (*plural* scrotums *or* scrota) *noun anat* od lat. scrotum, mošnja, izbočina kože i mišića koja sadrži sjemenike, prisutna kod muških jedinki nekih vrsta sisavaca; dio je muškog spolnog sustava

sewage (ˈs(j)uːɪdʒ) *noun* blato kanala, kanalizacija

sewer (ˈsuːə) *noun* odvodni kanal, *pl* kanalizacija

verb opskrbiti odvodnim kanalima

sludge (slʌdʒ) *noun* glib, blato, mulj, gust talog; škart

smelt (smelt) *verb tech* taliti (rudu)

smelter (ˈsmɛltə) *noun* talitelj, talioničar, topioničar

solidify (səˈlɪdɪfʌɪ) *verb* skrutnuti, zgusnuti (tekućinu), ojačati, stvrdnuti

soot (sʊt) *noun* čađa, gar

stakeholder (ˈsteɪkˌhəʊldə) *noun* sudionik

strenuous (ˈstrɛnjʊəs) *adjective* naporan, umoran, neumoran

surveillance (səˈveɪləns, səˈveɪ(j)əns) *noun* nadzor, nadgledanje, promatranje, prismotra

synergy (ˈsɪnədʒi) *noun* (also synergism) sinergija, sudjelovanje pojedinih dijelova koje povećava efektivnost svakoga dijela, tako da cjelina predstavlja više od međusobnoga zbroja dijelova

T

tarpaulin (tɑːˈpɔːlɪn) *noun* nepromočiva tkanina, cerada

tether (ˈtɛðə) *verb* sapeti, sputati, vezati (životinju)

toll (təʊl) *noun* namet, taksa, pristojba, cestarina, mostarina; danak, dug, otkupnina

trench foot (ˈtrentʃˌfʊt) *noun* bolest stopala zadobivena u rovovima (u ratu) uslijed dugog

izlaganja stopala hladnoći/hladnoj vodi koje uzokuje tamnjenje i odumiranje površinskog tkiva

turnover (ˈtəːnˌəʊvə) *noun* stopa izmjene radnika (onih koji odlaze i koje trebaju zamijeniti novi radnici); promet, utržak

U

undermine (ˌʌndəˈmʌɪn) *verb* minirati, podlokati (voda), izdupsti; *fig* potkopati, oslabiti, uništiti

unwarranted (ʌnˈwɒrəntɪd) *adjective* neopravdan, neovlašten

upsell (ˈʌpsɛl) *verb* sugestivno proširenje ponude, nagovoriti kupca da kupi više ili skuplje nego što je prvotno imao namjeru

V

vermin (ˈvəːmɪn) *noun zool* štetočina, grabežljivci; gamad, nametnici, štetnici; bagra, prost svijet, ljudski izrod

victimisation (ˌvɪktɪmʌɪˈzeɪʃn) *noun* napraviti žrtvu od nekoga, mučenje, iskorištavanje

vynil chloride (vaɪ.nəl ˈklɔːr.aɪd) *noun chem* vinil-klorid, bezbojni plin, najvažniji vinilni monomer, temeljna tvar u proizvodnji nekih važnih polimernih materijala, ponajprije poli(vinil-klorida)

W

weathering (ˈwɛð(ə)rɪŋ) *noun* izložiti vremenu, istrošiti se od vremena

white-collar worker *noun* činovnk, onaj koji radi uredski posao. Vidi 'blue-collar worker'.

Y

yield (jiːld) *verb* donijeti, nositi, proizvesti (plod, prirod); dati rezultat; predati, prepustiti, odstupiti

Sources

Primary online sources:

Collier, E. (2017) *Am I Being Bullied at Work? 12 Signs of Bullying in the Workplace*. Available at: https://www.highspeedtraining.co.uk/hub/am-i-being-bullied-at-work/ (Accessed 21 January 2023).

Gillis, A.S. (2019) *Quality Assurance.* Available at: https://www.techtarget.com/searchsoftwarequality/definition/quality-assurance (Accessed 10 January 2023).

Kazantzis, G. *Occupational Disease*. Available at: https://www.britannica.com/science/occupational-disease (Accessed 17 February 2023).

Martinelli, K. (2019) *A Guide to the Most Common Workplace Hazards*. Available at: https://www.highspeedtraining.co.uk/hub/hazards-in-the-workplace/ (Accessed 15 February 2023).

Tiernan, D. (2022) *Health and Safety in the Hotel Industry – An Essential Guide.* Available at: https://www.amenitiz.com/en/blog/health-and-safety-protocols-in-the-hospitality-industry/ (Accessed 19 January 2023).

--------*Ergonomics: Extreme Temperature Work*. Available at: https://ehs.yale.edu/sites/default/files/files/ergo-extreme-temperatures.pdf (Accessed 15 February 2023).

--------*Hazardous Goods Transport*. Available at: https://www.gefco.net/en/glossary/definition/hazardous-goods-transport/ (Accessed 25 January 2023).

-------- *Hazardous Materials Storage*. Available at: https://www.epa.gov/system/files/documents/2021-11/bmp-hazardous-materials-storage (Accessed 18 January 2023).

------- *How Excessive Overtime is Impacting Your Organization*. Available at: https://www.celayix.com/blog/how-excessive-overtime-is-impacting-your-organization/ (Accessed 25 January 2023).

-------- *Occupational Medicine.* Available at: https://www.britannica.com/science/occupational-medicine (Accessed 15 March

2023).

---------*Hazardous-waste management – Transport and Disposal*. Available at: https://www.britannica.com/technology/hazardous-waste-management/Transport-of-hazardous-waste (Accessed at: 1 March 2023).

References:

Bujas, Ž. (2008) *Veliki englesko-hrvatski rječnik*. Zagreb: Globus.

Bujas, Ž. (2011) *Veliki hrvatsko-engleski rječnik*. Zagreb: Globus.

Elliott, J. (ed.) (1997) The Oxford Paperback Dictionary and Thesaurus. Oxford: Oxford University Press.

Rundell, M. (ed.) (2006) *Macmillan English Dictionary*. Oxford: MacMillan Publishers.

Rundell, M. (ed.) (2010) *Macmillan Collocations Dictionary*. Oxford: MacMillan Publishers.

Surbhi S. (2019) *Difference Between Formal and Informal Writing* [online]. Available at: https://keydifferences.com/difference-between-formal-and-informal-writing.html (Accessed 5 April 2023).

Trappes-Lomax, H. (2006) *Oxford Learner's Wordfinder Dictionary*. Oxford: Oxford University Press.