INGLÉS III

INGLÉS PARA LA COMPRENSIÓN Y TRADUCCIÓN DE TEXTOS

CUADERNILLO DE TRABAJOS PRÁCTICOS

2025

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Con la clase teórica del 13 de marzo deberán realizar el primer trabajo práctico asincrónico.

PARTE B: Clase virtual asincrónica: (del 13 al 20 de marzo)

Comprensión de textos: Tipología de ejercicios de comprensión 1.

En el Aula Virtual lea el texto y realice las actividades propuestas, recuerde que dispone de un tiempo limitado para realizarlas.

TRABAJO PRÁCTICO N° 1

PARTE A: estructuras y vocabulario.

- **Frase Nominal compleja:** El sustantivo, plurales, sustitutos del sustantivo, pre y posmodificación. “to infinitive”, forma-ing, forma –ed, cognados y falsos cognados, derivados, compuestos y cambio de función.

1 ▼	3 ▼	2 ▼	4 ▼
A –An – the **This-that-these-those** **My, your, …..** **One, two, ….** **First, second, third, .** **Some, any, no** **Every, each** **Several,** **A lot of, many, much** **Other, another,** **Little, few** **Both, either, neither** **Same, different, various**	**….. ……. ……** **Adjetivos, sustantivos (función adjetiva)**	**Sustantivo ***	**Preposición** **Conjunción** **Verbo** **Pos modificador (adj, -ed, -ing, that, which, who, where, when, whose, etc.)**
Salt content dependent dialectric properties of pistacchios relevant to radio-frequency pasteurization.			

A. Traduzca las siguientes frases nominales complejas. Todas son títulos de trabajos de investigación.

1. Greenhouse Gas Repurposed
2. Tougher Concrete, Inspired by Bone
3. Innovating in the Corners Where Atoms Meet
4. Autonomous AI Assistant to Build Nanostructures
5. Designing Quantum Entanglement at the Nanoscale
6. Advancing Modular Quantum Information Processing
7. Giving Robots Superhuman Vision Using Radio Signals
8. A Step Forward in Generating Solar-Powered Hydrogen
9. Electricity Generation by Attaching Device to Your Clothes
10. A Method That Paves the Way for Improved Fuel Cell Vehicles
11. Fire-Risk Blocking Self-Powered Hydrogen Production System
12. Direct Discharge Electrical Pulses for Carbon Fiber Recycling
13. New Conductive, Cotton-Based Fiber Developed for Smart Textiles
14. Paving the Way to Extremely Fast, Compact Computer Memory
15. Dangers of the Metaverse and VR for US Youth Revealed in New Research
16. Key Electronic Device Developed for the Massive Arrival of 6G Networks
17. Plasma Heating Efficiency in Fusion Devices Boosted by Metal Screens
18. Unlocking New Insights Into in-Plane Magnetic Field-Induced Hall Effects
19. New Catalyst Developed for Sustainable Propylene Production from Biomass
20. Discovering Hidden Wrinkles in Spacecraft Membrane With a Single Camera
21. High-Quality Nanodiamonds for Bioimaging and Quantum Sensing Applications
22. Breathing New Life Into Technology: New Way of Separating Oxygen from Argon
23. Big Leap Forward for Environmentally Friendly 'E-Textiles' Technology
24. Soft Microelectronics Technologies Enabling Wearable AI for Digital Health
25. A Novel Neural Network for Preserving Cultural Heritage Via 3D Image Reconstruction
26. Harnessing Microwave Flow Reaction to Convert Biomass Into Useful Sugars
27. Revolutionizing Heat Management With High-Performance Cerium Oxide Thermal Switches
28. Investigation on the mechanism of the load transfer behavior in reinforced metal matrix composites
29. New Battery-Free Technology to Power Electronic Devices Using Ambient Radiofrequency Signals
30. Pinpointing Coal Plants to Convert to Nuclear Energy, Considering Both Practicality and Community Support
31. The Evolution of Green Energy Technology: Developing Three-Dimensional Smart Energy Devices With Radiant Cooling and Solar Absorption

B. Traduzca las siguientes oraciones que contienen frases nominales complejas.

1. Scientists have developed a model capable of predicting the live cycles of high-energy-density lithium-metal batteries by applying machine learning methods to battery performance data.
2. Artificial Compound Eye Revolutionizes Robotic Vision at Lower Cost but Higher Sensitivity.

3. Contamination detection tool merges synthetic biology and nanotech for ultrasensitive water testing
4. Researchers used robotics and additive manufacturing to toughen cement-based material with precisely placed hollow tubes.
5. New study identifies differences between human and AI-generated text
6. Liquefied Natural Gas Carbon Footprint Is Worse Than Coal.

C. Indique a qué hacen referencia las palabras o frases destacadas en las oraciones, aclarando de qué se está describiendo.

- For laundry care, Roborock introduces the Zeo One, Zeo Lite, and Zeo Mini washer-dryers, equipped with Zeo-Cycle drying technology. This system[1] uses zeolite's water vapor absorption properties to dry fabrics gently at approximately 50°C.
- Researchers have unveiled a design for manual wheelchair tires that combines[2] comfort, efficiency, and durability. Unlike conventional pneumatic tires, which require[3] frequent air pressure maintenance and are prone to punctures, these concept tires[4] utilize a honeycomb-like flexible spoke structure that absorbs impacts and vibrations.
- Looking at high density urban cities, car parks often sit on valuable land that could generate a larger return on investment when redeveloped to meet changing requirements. With that in mind[5], the need for vehicles is changing.
- A good design company challenges the status quo, a great one[6] changes the way we live for the better.
- In short, cobots are a promising way to overcome the productivity challenge facing the Netherlands. But precisely that which makes these cobots so unique[7] the ability to work with people, is often not fully exploited. In addition, production workers, the ones[8] who will be working with the cobot have not been properly trained.
- One of the biggest advantages[9] of using drones for building inspections is the improved safety for workers.

1. **This** system	
2. **That** combines	
3. **Which** require	
4. **These** concept tyres	
5. With **that** in mind	
6. A great **one**	
7. **Which** makes **these** cobots so unique	
8. the **ones**	
9. **One** of the biggest advantages	

Cognados, falsos cognados, términos transparentes.

Términos transparentes: se denominan términos transparentes a aquellas palabras entre dos idiomas o dialectos que son exactamente iguales en escritura y significan lo mismo, por ejemplo: natural.

Cognados: a los efectos de nuestro trabajo, definiremos cognados a palbras que significan lo mismo, pareciéndose en la escritura, aunque no sean exactamente iguales, permitiéndonos deducir su significado, sin necesidad de recurrir al diccionario por ejemplo: article.

Falsos Cognados o Falsos amigos: La expresión falsos amigos se emplea para referirse a aquellas palabras que, a pesar de pertenecer a dos lenguas distintas, presentan cierta semejanza en la forma mientras que su significado es considerablemente diferente. Un ejemplo de esto es la palabra argument, se parece a la palabra en español argumento, sin embargo, en inglés significa, discusión, disputa, pelea.

Hay listas muy completas de falsos cognados en internet.

D. De las siguientes oraciones extraiga cinco cognados, cinco términos transparentes y todos los falsos cognados, estos últimos con su significado.

1. The fabric developed at this center associated with the University of California is composed of an octahedron-shaped polymer mesh obtained through 3D printing.
2. Early compasses were made of a single lodestone attached to some rope.
3. Utilities utilize LiDAR to assist in the design, installation, and maintenance of renewable energy assets such as wind turbines and solar panels.
4. They advocate for regulatory policies to minimize and mitigate MNPL contamination to safeguard public health. (MNPL: micro and nanoplastic)
5. We seldom consider all the lives a building and its components actually touch.
6. They study possible crashes of drones on industrial facilities.

Cognados	Términos transparentes	Falsos cognados	
		Falso cognado	significado
1.	1.	1.	
2.	2.	2.	
3.	3.	3.	
4.	4.	4.	
5.	5.	5.	
		6.	
		7.	
		8.	

Afijos: funciones y significados sugeridos por los afijos

E. Ordene las siguientes palabras debajo de los títulos según indiquen superioridad, inferioridad, negación, anticipación o repetición.

Palabras: inconvenient, surpass, decompression, underground, hyperspace, reconsider, illegal, preprogramed, undo, microwave, foresee, irrelevant, supercomputer, nonstop, antimagnetic, subzone. misaligned, macroeconomics, limitless, hypothermia.

Superioridad	Inferioridad	Negación	Anticipación	Repetición

F. Ordene las siguientes palabras según su función:

Palabras: stabilize, demonstration, advertiser, professionally, pollinate, unemployment, optional, classify, dependent, moisten, effective, clockwise, programmer, avoidable, assistant, dangerous, package, careful, endless, leadership, upward, denial, preference, refinery.

Verbo	Sustantivo	Adjetivo	Adverbio

FUNCIONES DE *–ING* E INFINITIVO CON *TO*

G. Traduzca las siguientes oraciones.

1. WiredWorkers offers cobot training in-house and on location. This is perfect for companies that are about to start with automation or want to know more about this new technique in robotics
2. Making electricity using microbes. (título)
3. Combining advanced robotics with a heartwarming design, AnAn sets a new standard for interactive AI companions.
4. One of the possibilities would be to harness metasurfaces to convert any surface into a high-resolution sensor**.**
5. Activities are the reasons why people visit a place and why they continue to return. If there is nothing to do in a place, it will sit empty.
6. The EQUSPACE consortium (Enabling New Quantum Frontiers with Spin Acoustics in Silicon) is securing the future of quantum computing in Europe.
7. The chips have had to be custom-designed and manufactured for each specific application.
8. To increase energy density is vital to operate them at higher voltages.
9. Combining the energy harvester with a solar cell significantly boosted the solar cell's power output, showcasing the benefits of harnessing both radio waves and sunlight.
10. Cellulose was too brittle to be used as an adhesive.
11. In addition, the technology is being used to produce carbon nanotube wires that will significantly reduce resistance thereby reducing power loss during transmissions.
12. In order to move forward, we have to be able to miniaturize and scale these systems.
13. This connection emphasizes our commitment to creating a vehicle that harmonizes with its environment.

Be to

Podemos encontrar dos usos de be + to seguido de infinitivo:

1) el verbo modal: como en los verbos modales, las palabras forman un solo bloque
Puede tener referencia futura para expresar por una parte para expresar planes y preparativos futuros y por otra parte obligaciones requerimientos y decisiones formales, instrucciones u órdenes y se traduce como **tener que, haber de, ir a**.

We are to start at five. Tenemos que empezar a las cinco/vamos a empezar a las 5.
You are to finish this Project on time. Tienes que/has de.
The orders are to be carried out without delay. Se debe llevar a cabo las órdenes sin demora /Las órdenes deben ser llevadas a cabo sin demora.
This door is to remain closed at all times. Esta puerta se tiene que/se ha de mantener cerrada en todo momento.
The personnel manager is to come back late. El/La gerente de personal va a regresar tarde.

2) be + to seguido de un infinitivo explicativo. Se traduce el verbo be seguido de una frase infinitiva

Be es el verbo y to seguido de un infinitivo es el núcleo de una frase nominal que amplia alguna idea planteada en el sujeto, es muy frecuente después de frases que continen palabras como**, aim, objective, concept, step, etc**.

The purpose of placing the insulation on top is to protect the membrane from physical damage and ultraviolet degradation.
El propósito de colocar el aislamiento en la parte superior es proteger la membrana del daño físico y de la degradación ultra violeta.

A simple example of the use of Monte Carlo simulation would be to use the hyperbolic decline equation to calculate remaining reserves.
Un ejemplo simple del uso de la simulación Monte Carlo sería usar la ecuación de declive/descenso/reducción hiperbólica para calcular las reservas restantes.

Our policy could be to keep duplicate samples.
Nuestra política podría ser mantener/tener/conservar muestras duplicadas.

H. Traduzca las siguientes oraciones con BE+TO.

1. However, our main objective is to demonstrate what's possible with our technology and design expertise.
2. In the task-based test, the robot was to perform a series of tasks in order.
3. However, with increasing concern over textile waste, the challenge has been to develop e-textiles that are durable, comfortable, and environmentally friendly.
4. Another interesting perspective for this work would be to include data relating to other sensory modalities in the evaluation.
5. Another option would be to use the data to 3D print a scaled model of the scene.
6. The way in which objects are to be stored has a major impact on the design.

I. Lea el siguiene texto y luego resuma en pocas líneas las características de los exoeskeletons.

Exoskeletons for industry

Exoskeletons in industry often go hand in hand with Industry 4.0. In practically all manufacturing companies, the limits of automation are being reached in some workplaces. Exoskeletons can provide good relief where employees are subject to high physical strain. The future will bring further possible applications for exoskeletons. Here you can find out all about exoskeletons in industry and why they have a bright future.

How can exoskeletons help?

Exoskeletons are a relatively new technology that is increasingly appearing in our everyday lives. These mechanical devices are worn over clothing and expand the natural powers and abilities of the human body.

How can exoskeletons help to increase productivity?

Exoskeletons can be an essential part of Industry 4.0. They offer the opportunity to increase productivity by reducing physical strain for those involved in manual labour. By supporting the muscular strength of users, exoskeletons can help reduce fatigue and improve health and safety in the workplace. In addition, exoskeletons can be used to facilitate the repetitive movements required in Industry 4.0. This can play a valuable role in the maintenance and servicing of production facilities as well as in the handling of heavy loads found in many industries. Overall, exoskeletons can contribute to increasing productivity and efficiency in Industry 4.0, helping to reduce costs and increase production.

PARTE B: Clase virtual asincrónica:

Comprensión de textos: Aviso de ofrecimiento de empleo 1.

En el Aula Virtual lea el texto y realice las actividades propuestas, recuerde que dispone de un tiempo limitado para realizarlas.

TRABAJO PRÁCTICO N° 2

PARTE A: estructuras y vocabulario.

- **Frase Verbal:** tiempos verbales simples, continuos y perfectos, futuro perifrástico *going to*, modales simples, continuos y perfectos, imperativo, voz activa y pasiva común.

I. VOZ ACTIVA

A. Lea y traduzca las siguientes oraciones y sus variantes

El objetivo de este ejercicio es practicar los tiempos verbales, por lo que se traduce sólo la primera oración completa y en luego sólo el verbo que se indica, coordinando la terminación del tiempo verbal con el sujeto de la oración rectora.

1. Pressures had been changing rapidly at the aquifer/reservoir interface.
   changed
   will have changed
   are changing
   had changed

2. 3D printing the building might be a new technological advance.
   can be
   should be
   was to be
   must be

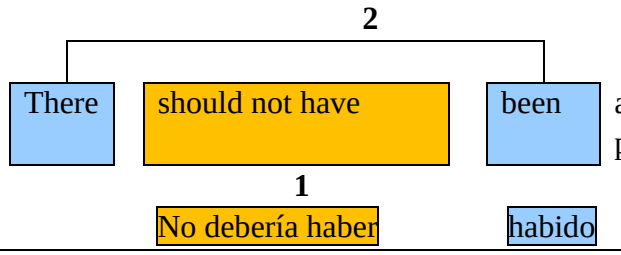
3. Cyber threat intelligence (CTI) methodology would help broaden its base.
   helps
   were helping
   has changed
   would have been helping.

4. We're going to have to design replicating machines.
   may design
   are able to design
   ought to design
   could design

5. There will be a thousand humanoid Tesla Optimus robots by the end of this year.
   There could have been
   There ought to be
   There is to be
   There must have been

La expresión **THERE + BE** significa **HABER**, es una expresión impersonal y, a pesar de que en inglés tiene un singular y un plural, como todas las expresiones

impersonales en español se traduce SÓLO en singular ***ha habido*** y no ~~***han habido***~~. La traducción en los tiempos simples no presenta mayores dificultades, pero cuando se combinan con modales en tiempos perfectos, la traducción suele complicarse, por lo que sugerimos comenzar a traducir los verbos que están entre ***there*** y ***be*** primero y luego el verbo ***haber*** en la forma que exija la traducción anterior.



B. Traduzca las siguientes oraciones.

1. There seems to be a great deal we can still learn from the sophisticated and intricate behaviors of living organisms.
2. There may be occasions for re-covering the roof with terne-coated stainless Steel.
3. There could soon be a new generation of airplanes more environmentally friendly than their predecessors.
4. There will be some additional carbon emissions in manufacturing and transport of the aluminium.
5. There have been some reports of audio distortion at lower volume.
6. There have been various interesting and out-of-the-box discoveries in architecture based on this technique.

C. Lea y traduzca el siguiente código de seguridad.

User manual
FOR BATTERIES FROM WS TECHNICALS
Safety guidelines

DO NOT USE THE BATTERY IF IT HAS BEEN DROPPED, EXCESSIVELY HANDLED OR DAMAGED IN ANY WAY!

General

- Let's maintain the battery voltage so that the BMS does not enter a protective or erroneous mode.
- Do not serial-connect or parallel-connect the batteries unless told otherwise by WS Technicals or an authorized dealer.
- Do not short-circuit the battery.
- Do not dismantle, repair, modify, crush, puncture, open or shred the battery.
- Do not expose battery to heat or fire. Avoid exposure to direct sunlight.
- Do not remove the battery from its original packaging until required for use.
- Use a battery charger approved by WS Technicals.

• Observe the plus (+) and minus (–) marks on the battery and equipment and ensure correct polarity.
• Do not mix batteries of different manufacture, capacity, size or type within a device.
• Keep the battery clean and dry.
• When storing the battery, it must be recharged to at least a voltage equivalent to 40% SoC every 6 months.
• Retain the original product documentation for future reference

Disposal

Let's act in accordance with all applicable laws and regulations. Batteries may be returned to reseller or WS Technicals at the expense of the user

II. VOZ PASIVA

A. Traduzca todas las variantes de la oración

Computer algorithms have been used to predict chemical structures and their functions

will be used
were being used
are going to be used
would have been used
may have been used
should be used
are to be used
could be used
have to be used

B. Identifique la frase verbal en voz pasiva. Traduzca las oraciones

1. The idea of the 15-minute city had been adopted by several cities around the world.
2. Gold nanoparticles are being used for the purposes of detecting nucleic sequences.
3. The strength of the supports would have been marginal even without the fatal change in design
4. A surface-removal technique must be used in conjunction with the X-ray measurements
5. Silica aerogel is going to be used by aerospace engineers.
6. A robot dog was to be used in the army to transport heavy things on foot.
7. Memory foam was developed in the late 1960s to cushion pilots and passengers during takeoff and landing

C. Traduzcan el segmento de texto correspondiente a cada grupo.

INDUSTRIAL Y PETRÓLEOS

The colors of hydrogen

Hydrogen is the most abundant element in the solar system, but it naturally occurs only in its compound form on Earth. Therefore, it must be produced from molecules that contain it, such as water or hydrocarbons, through specific processes, including thermo-chemical conversion, biochemical conversion, or water electrolysis.
The colors of hydrogen are crucial for the energy transition because each production pathway generates different amounts of greenhouse gas emissions and results in different production costs. Today, renewable (or green) hydrogen is 2 to 3 times more expensive than hydrogen produced from fossil fuels
.
However, these costs will decrease over time thanks to innovation, economies of scale, and carbon pricing policies. Furthermore, the world's dependence on grey hydrogen has a high carbon cost. A shift to blue hydrogen would halve carbon emissions. Although fossil fuel plants utilizing Carbon Capture and Storage (CCS) are well-suited to mitigate emissions, only adopting renewable hydrogen at scale, with its zero-carbon impact, would fully address emissions concerns associated with the production and consumption of hydrogen.

General definitions

Low-carbon hydrogen refers to hydrogen produced from energy sources of nonrenewable origin with a carbon footprint below a defined threshold, such as blue hydrogen.
Clean hydrogen refers to renewable and low-carbon hydrogen. It is important to note that while hydrogen burns cleanly as fuel at its point of use, hydrogen produced from fossil fuels simply relocates emissions from one site to another.

CIVIL Y ARQUITECTURA

The colors of hydrogen

Black or brown hydrogen refers to hydrogen produced by coal gasification. The black and brown colors sometimes indicate the coal type: bituminous (black) and lignite (brown). This process generates significant CO2 emissions (19 tCO2/tH2).

Blue hydrogen is produced mainly from natural gas by steam gas reforming, paired with carbon capture and storage (CCS). Blue hydrogen has a much lower carbon intensity than grey hydrogen, with estimates ranging from 1-4 tCO2 /tH2. Although using CCS increases costs, blue hydrogen remains the cheapest "clean" alternative to grey hydrogen.

Green or renewable hydrogen is produced from renewable energy sources like wind and solar through a process known as water electrolysis, where an electrolyzer splits water molecules into oxygen and hydrogen. No CO2 emissions are generated during the production process. Today, green hydrogen costs are significantly more than those of grey hydrogen. It accounts for less than 0.1% of the world's hydrogen production.

Yellow hydrogen refers to green hydrogen produced from solar energy. It does not generate CO2 emissions. Estimates suggest that yellow hydrogen may become the cheapest form of renewable hydrogen in the medium term. Pink hydrogen is produced by water electrolysis powered by nuclear power, a clean but non-renewable energy source that does not generate CO2 emissions.

MECATRÓNICA Y LCC	
	Purple hydrogen is produced by water electrolysis using nuclear power and heat. **Red hydrogen** is produced by the high-temperature catalytic splitting of water using the heat and steam generated from nuclear plants. This process requires much less electricity than traditional electrolysis. **Turquoise hydrogen** is hydrogen produced from natural gas under a process known as methane pyrolysis. In this process, natural gas is decomposed into hydrogen and solid carbon at high temperatures. Currently, turquoise hydrogen is still in the early development stage. **Orange hydrogen** refers to emerging processes that produce hydrogen using plastic waste as a feedstock. It may offer a solution to both the clean energy problem and issues surrounding plastic waste disposal. Orange hydrogen remains in the early development stages, with various technologies and production processes, including pyrolysis, microwave catalysis, and photo-reforming, under evaluation. **White hydrogen,** also known as natural hydrogen, is naturally generated within the Earth's crust through interactions between water molecules and iron-rich minerals at high temperatures and pressures. As water reacts with these minerals, it releases hydrogen gas. There are no strategies to exploit this hydrogen at present.

PARTE B: Clase virtual asincrónica:

Comprensión de textos: Tipología de ejercicios de comprensión 2.

En el Aula Virtual lea el texto y realice las actividades propuestas, recuerde que dispone de un tiempo limitado para realizarlas.

TRABAJO PRÁCTICO 3

PARTE A: estructuras y vocabulario.

- **Voz pasiva:** común y especial, todas las funciones del infinitivo y formas –ing.

I. PASIVAS ESPECIALES

A. Lea y traduzca las siguientes oraciones que contienen frases en voz pasiva (especial)

1. Nanotechnology is also being used on swimwear to develop ultra-light wear for the swimmer. These fabrics have been shown to help swimmers glide through water more easily.
2. This pioneering endeavor is believed to be the largest-ever cosmological computer simulation, aiming to decode the enigma of matter distribution within our universe.
3. Fusion has never seriously been considered to be a viable future energy source and more of a pipe dream.
4. Ultralight sandwich structures with either 2D prismatic or 3D lattice truss cores, such as honeycombs, corrugations, and pyramidal trusses, are known to possess attractive mechanical stiffness/strength and impact resistance.
5. In 2015, between 15 trillion and 51 trillion microplastic particles were estimated to be floating in surface waters globally,
6. Bell's theorem is often said to prove that nature isn't "local", that an object isn't just directly influenced by its immediate surroundings
7. The job market for forensic science technicians is expected to grow by a stunning 27% during the same time period
8. The items involved were landing gear, an engine bearing and a blade from a gas producer turbine wheel. The landing gear failure was found to have resulted from prior cracking
9. Commercial downturns or residential, mixed use developments are considered to be a relatively safe bet
10. This means that cyber security awareness is given priority and ways are found to reduce individuals' vulnerabilities
11. In the US, fatal construction injuries are estimated to cost $5 billion each year in health care, lost production, reduced quality of life for family members, and lost income
12. Traditional methods include *in situ* burning, mechanical separation and bioremediation. However, every method is known to have its own disadvantages including environmental and economic challenges in the current scenario.
13. This "biomimetic revolution" is now considered to be a major guideline towards more sustainable built environments, meaning that buildings are focused on learning from nature rather than only extracting elements from it.
14. The device isn't supposed to be a substitute for designing places like grocery stores to be more accessible

15. Scientists have been able to help in the manufacture of soft and flexible s- Using nanotechnology hoes by combining hard and soft molecules. These shoes have been shown to increase stability while ensuring comfort.

16. The robot was said to be capable of riding the wind, its name KOU originates from “ancient Chinese mythology named Lie Yukou, who was said to be capable of riding the wind,
17. The robots are expected to operate within “environments that have not been pre-prepared for [their] operation27
18. While the ultrasonic sensors on the robot are supposed to detect transparent materials, the information from these sensors did not appear to be translated into the interface screen and users were allowed to designate these areas as goal points
18. Lattice truss reinforced honeycombs, termed honey tubes, a novel type of honeycomb formed by reinforcement with lattice trusses, were reported to exhibit enhanced buckling resistance
19. The resultant pretreated sawdust was observed to be pale yellow, and was further used for oleophilic treatment
20. The hydrogel developed in Christman's lab was proven to be compatible with blood injections as part of safety trials.
21. While the first unit is now connected to the grid and operational, the next one is planned to become active in 2025

B. <u>Lea y traduzca las siguientes oraciones y diga qué tipo de pasiva es (común o especial).</u>

1. Clay bricks: Made from natural clay, these bricks are known for their excellent load-bearing capacity, fire resistance, and thermal insulation properties.
2. Despite this complexity, surprisingly, the magnetoresistance was found to be extremely simple
3. Petroleum is a type of heterogeneous mixture of different hydrocarbons that include alicyclic, aliphatic and aromatic hydrocarbons. These hydrocarbons are known to be organic compounds that contain hydrogen and carbon that are extremely insoluble in water.
4. As forensic engineers, problem solving is our job, and using advanced technology is expected—not always by attorneys and adjusters, but certainly by jurors
5. Robots are not only very important in the industry, but can be found all around us.
6. The sponge (Gherkin) is known for its shape and lattice structure and incredible strength due to its fibrous, glass-like skeleton.
7. Localization based on crowdsourcing has been shown to be beneficial for commercial location-based IoT applications.
8. One potential use case of quantum computers is in the field of cryptography, where they could be used to break certain types of encryption that are currently considered secure on classical computers.
9. Commercial drone flights are said to become a widespread reality, therefore the comparison with the safety of manned jet aircraft need to be established by facts.
10. The input edges for each case are shown in red, and the corresponding arcs along the primary surface *P* are shown in green.

11. Pierre-Marie-Jérôme Trésaguet is considered to be one of the first people to systematically improve road building since Roman times. Trésaguet was a French engineer.
12. The operation cost for the Digit robot is estimated to be in the range of $10 to $12 per hour.
13. The laser pulses supply measurements for precision 3D cartography of an area of terrain or building. Distances and dimensions are not estimated but instead determined with accuracy down to just a few centimeters.
14. The adoption of electric vehicles (EVs) is expected to continue growing in the coming years, driven by a variety of factors including concerns about climate change, the declining cost of batteries, and government incentives

C. En el siguiente texto realice las estas actividades 1) traduzca las oraciones marcadas en el análisis de segmentación del mercado 2) y resuma en no más de cinco líneas la dinámica del mercado global.

Growth Trends in the Green Mining Market 2025-2029 - Rising Green Finance Provides the Necessary Capital for Companies to Transition Toward More Sustainable Practices

December 27, 2024 04:27 ET | Source: **Research and Markets**

Market Segmentation Analysis:

By Mining Type: In 2023, the surface segment dominated the market share due to its cost-effectiveness, operational simplicity, and ability to extract large volumes of minerals with minimal resource input. Surface mining techniques, such as open-pit and strip mining, are easier to implement with green technologies like renewable energy, water management systems, and dust suppression methods. Additionally, advancements in equipment automation and precision mining technologies have made surface mining more efficient and environmentally friendly, further driving its dominance in the market. On the other hand, underground segment is expected to grow fast during forecasted period due to increasing investments in advanced technologies that enhance safety, efficiency, and sustainability in subsurface operations. Innovations such as automated mining equipment, real-time monitoring systems, and low-emission ventilation solutions are making underground mining more viable and environmentally friendly. Additionally, the growing demand for high-value minerals located in deeper deposits and the need to minimize surface disruption are encouraging the adoption of underground mining.

By Technology: Power reduction segment holds the largest market share in 2023 due to the growing emphasis on energy efficiency and cost savings in mining operations. Mining companies are increasingly adopting renewable energy sources, energy-efficient equipment, and smart grid technologies to reduce electricity consumption and operational expenses. The rising costs of conventional energy and the push to meet stringent carbon reduction targets have further incentivized investments in power reduction strategies. On the other hand, emission reduction segment is believed to grow the fastest during forecasted period due to increasing regulatory pressure to curb greenhouse gas emissions and the global shift toward decarbonization. Mining companies are adopting cleaner technologies, such as electric and hybrid mining equipment, carbon

capture and storage (CCS), and renewable energy integration, to reduce their carbon footprint.

By Region: In 2023, Asia Pacific dominated the global green mining market and is considered to grow at the fastest CAGR from 2024 to 2029 due to rapid industrialization, urbanization, and the region's abundant mineral resources. Countries like China and India are heavily investing in sustainable mining practices to meet increasing domestic demand.

Government initiatives promoting green technologies, stricter environmental regulations, and the adoption of renewable energy and advanced mining equipment are driving growth in the region. Additionally, the rising demand for sustainably sourced minerals in industries such as electronics and renewable energy further boosts the market's expansion in Asia Pacific.

Global Green mining Market Dynamics:

Growth Drivers: Rising green finance is a significant growth driver of the global green mining market. This access to green finance not only reduces the financial burden of implementing costly green technologies but also enhances the competitiveness and reputation of mining companies, accelerating the market's growth. Further, the market is estimated to grow owing to increased demand for critical minerals, increasing environmental regulations, growing focus on sustainability and ESG goals, rising public and corporate awareness, economic benefits of sustainable practices etc. in recent years.

Market Trends: The expansion of circular economy practices is a key trend driving the global green mining market, as it emphasizes resource efficiency, waste minimization, and sustainable production cycles. As industries increasingly prioritize circularity, the demand for eco-friendly mining practices will continue to grow, fostering long-term market expansion. More trends in the market are believed to grow the green mining market during the forecasted period, which may include the increased use of automation and AI, adoption of renewable energy in mining operations, focus on carbon neutrality, digital twin technology in mining, advancements in bio-mining etc.

PARTE B: Clase virtual asincrónica:

Comprensión de textos: Aviso de ofrecimiento de empleo 2.

En el Aula Virtual lea el texto y realice las actividades propuestas, recuerde que dispone de un tiempo limitado para realizarlas.

TRABAJO PRÁCTICO 4

PARTE A: estructuras y vocabulario.

- **Oraciones condicionales:** 1ro, 2do y 3er tipo, oraciones condicionales especiales.

A. <u>Traduzca las siguientes oraciones condicionales. Indique a qué tipo de condicional</u>

1. Who should be held accountable if an autonomous vehicle caused an accident?
2. If you have enough metadata, you don't really need content
3. If we don’t deliver it well, and it doesn’t provide actionable information to providers, it’s not going to change anything.
4. If our systems are more portable, that means we will more easily be able to adapt them to run in the most environmentally-friendly ways.
5. I cannot tell you what it would cost if we had made the data center conventionally.
6. If you stand in the sunlight, for example, trillions of neutrinos will harmlessly pass through your body every second
7. However, photochromic windows are very expensive, at least if they use silver.
8. If we want to leverage these topological surfaces, we need nice single-crystalline films that are really hard to deposit,
9. As mentioned earlier, tough, ductile metals can exhibit brittle failures if they contain cracks in thick sections.
10. The main purpose of compensation is to try and get you back to a place you would have been in financially if the accident at work had not happened. For this, you need detailed records.
11. If you want to wear glasses with this technology for prolonged periods, all elements must be integrated into the scene, (Mixed Reality)
12. If you are interested to hear more about how Propeller can help take your construction companies drone surveying program to the next level, reach out to us for a free demo on what Propeller can accomplish for you.
13. Please keep us informed if your personal data changes during your relationship with us.
14. Clearly if this failure had happened in flight, the aircraft could have crashed, though other such failures in the past have not always had disastrous consequences.
15. In the case of biodegradable plastic, the most outstanding research efforts are devoted to obtaining more resistant and durable materials without giving up on their complete degradation in the environment. If these two qualities can be combined, it would be a giant step forward in the transition to a circular economy.

16. If we could produce a way to control the material's surface humidity, that would enable the silica to slide on top of the graphite surface in a more engineered way.

17. Likewise, if mining of lunar soil or asteroids for rare materials became economically viable, this also could be done more cheaply and safely with robots.

18. If we'd done a fixed strategy, we would have had a period of time where the model was just flat broken. (**AI could calculate health risks from patient data**)

19. You will receive marketing communications from us if you have requested information from us

20. Another is fluid flow; if fluids are flowing around cells in a certain direction, many cells will just go along for the ride.

B. <u>Lea las siguientes oraciones. Identifique el caso</u> (nexo "if", otros nexos, inversión). <u>Traduzca</u>.

1. However, should these mitigating measures fail, the drone would cease to be authorised and become an unauthorised drone

2. As the world faces these pressing challenges, biomimicry offers hope. Biomimicry has the potential to become the future of sustainable architecture and design, as long as it is integrated into the project for functional purposes.

3. In the event of a hit and run, the data can show if that vehicle was in the area of the crash at that specific time and date. (BERLA iVe Vehicle System Forensics)

4. If you're considering suing your employer, remember that the aim of legal damages is to put you in the position you would be in had the accident not happened

5. However, active participation in social life, including communication, is possible only if the robot is perceived and accepted as an equal creature due to its shape, mobility, and sensors.

6. This way, you and your team can be better prepared should an incident occur.

7. King Abdullah Economic City (KAEC), currently developing across 180 square kilometers of the Red Sea coast, is a "vision-ready investment destination". KAEC, with its more conventional urban development approach, risks being perceived as outdated unless it can redefine its offerings.

8. A cobot, provided the goods are delivered constantly, can keep stacking endlessly.

9. The question is whether it will even be possible to achieve a green transition to a sustainable, low-emissions global circular economy in a timely manner without AI

10. Had Hamzah and his team not had this accurate information available, the dispute with the subcontractor could have dragged on for weeks, costing Haskell precious time and money in the process

11. Even though the process of petroleum degradation in the presence of aerobic conditions happens much faster than compared to the anaerobic conditions, it is crucial to understand that the anaerobic degradation process is also important to several bioremediation processes.
12. Scientists have created an AI system capable of generating artificial enzymes from scratch. In laboratory tests, some of these enzymes worked as well as those found in nature, even when their artificially generated amino acid sequences diverged significantly from any known natural protein
13. Should you have any questions about the Microplastics journal, you can contact the Publishing Manager, Liliane Auwerter, at liliane.auwerter@mdpi.com
14. Risk assessments should be done assuming the user is not wearing any personal protection equipment and before the safety function is added
15. But Wysa's answers could get repetitive, and users sometimes felt as if the chatbot didn't understand what they were saying.
16. Without thinking, System 1 draws us to the escalator. Were she to even just a tad engage System 2, the commuter would realize that, although letting the technology do the work of lifting is easier

C. <u>Lea las siguientes oraciones. En ellas aparecen nexos en un uso común y en un uso condicional. Tradúzcalas apropiadamente de acuerdo al contexto.</u>

1. Since its establishment, the company has continuously improved and upgraded the industrial system, optimized the industrial structure, and concentrated resources to vigorously develop the two major industries of military equipment and intelligent power.
2. The death toll from the Deepwater Horizon incident is low in comparison to other oil rig disasters, with 11 fatalities in the event.
3. Heavy tasks with large products are therefore quickly a size too big for a cobot. But for small productions, with small series and for facilities where there is little space, a cobot is more than suitable
4. Since the drone use began, the USAF has acquired 269 Predators, of which 40% have crashed in Class A accidents and 8 % in class B accidents.
5. Since COVID-19 came to play in 2020, most businesses have gone downhill. One of the largest industries that suffered was tourism, which meant that airlines were hurt due to travel bans.
6. With a range extender, the robot is provided with an additional axis.
7. The lifetime between inspections, or to retirement, is calculated by assuming an initial defect size, and calculating the number of flight cycles required to grow it to failure
8. Risk assessments should be done assuming the user is not wearing any personal protection equipment and before the safety function is added.
9. Though AI-enabled medical devices have been in use since the 1990s, the level of interest, investment and technologies has soared in the last few years
10. These records have now provided a base for revelations about the Sun's behavior.
11. Francis Aston first took advantage of a mass spectrometer in his study of isotopes in 1919, but for a long time the tool was seen by some chemists as, according to a description by

mass spectrometrist Michael Grayson, “an unexplainable, voodoo, black magic kind of a tool.”

12. Since the ground station is mounted on a vehicle, it can be moved to avoid bad weather and turbulence, making the data transmission more reliable.
13. One of the major supply chain risks for the automotive sector is the infotainment systems and connectivity technology provided by software vendors
14. It has since been used in many member states to increase the proportion of their energy coming from “renewable” sources. (Miembros de la the EU Renewable Energy Directive (RED)
15. The technology will “reduce unnecessary visits to the doctor (and) eliminate costly false alarms” since it will have access to “the databanks of the world’s leading medical centers (with) the latest scientific information.

C. Lea el siguiente texto y

1. Traduzca esta introducción.

What should business owners do when a workplace accident occurs?

At **Huckleberry**, we want to help you cover yourself in the case a workplace accident occurs as well as other potential financial damages your business may face. Without this important policy in place, you are vulnerable to citations from your local government and potentially debilitating lawsuits from injured employees. With workers’ comp in place, you are protected from these costs should a workplace incident lead to the personal injury of one or more of your employees.

What is considered a workplace accident?

A workplace accident describes an unexpected, sudden event that leaves at least one employee injured physically or mentally. It also can result in fatalities. However, it is essential to note that workplace accidents do not include occupational diseases that arise from the job. An employee falling off a ladder and breaking their leg is a workplace accident. Lung cancer that occurs due to prolonged contact with a harmful substance on the job site is an occupational disease. The exception to this rule is asbestos exposure, in which case the employee can still sue the business should the exposure result in long-term health complications such as mesothelioma.

What types of workplace accidents are preventable?

Many workplace accidents are preventable. Falls due to improperly maintained scaffolding or ladders can be prevented, as can slips and trips caused by lack of signage on wet floors. While drug or alcohol-induced workplace accidents are sometimes exempt from payouts from workers’ comp, you can reduce the risk of accidents like these by enforcing regular, routine drug tests in the workplace. Similarly, workers’ comp often does not cover injuries resulting from workers fighting or playing around. You should still monitor your workforce to ensure that peace is kept throughout each workday.

Employer’s guide to workplace accidents

Even if you put every possible policy and protocol in place to eliminate minor and serious injuries due to workplace accidents, you may still have them in your business. When accidents occur, you need to know how to respond both in the moment and afterward. Let’s look at several steps to take to handle workplace accidents.

2. Ordene los pasos en la guía de procedimientos.

A) Assess the injury

When an accident happens, the first thing to do is assess the damages. Where is your employee injured? If the injury is life-threatening, call 911 immediately. If it's non-life-threatening, care for your employee concerning the seriousness of the injury.

B) Connect with your injured employee

It is essential to show your employee that you honestly and authentically care for their well-being. Check on them throughout their recovery process, open lines of communication, and let them know through your actions that they can trust you to do right by them. This will not only help you maintain a strong, positive relationship with your employee, but it may save you from a lawsuit in the future.

C) Help your employee get back to work

Once your employee has received the medical care they need and has recovered from their injury, you will need to help them make a smooth transition back to work. This can be more difficult if the employee has been on leave for a long time.

To help an employee return safely, create and implement a transitional modified job program to work within their current capacity.

D) Prevent future incidents

Learn from the incident so you can avoid future accidents. If you can identify what went wrong, put a plan in place to address the issues so that other employees do not suffer the same experience. This may mean that you have to replace equipment, purchase more protective equipment to have on hand, add a preventive maintenance plan, or adjust the floorplan of your facility to remove hazardous obstacles.

E) Report the accident

After tending to the injured worker's needs, speak with any witnesses to the incident. Take photos of where the accident occurred and follow all OSHA reporting and recordkeeping protocols. This will include notifying OSHA of the incident within 8 hours if it results in death and within 24 hours if the accident resulted in limb amputation or hospitalization. It is essential to be accurate and detailed in your accident report.

Helpful hint: Keep tabs on your workers' comp insurance to ensure that it never lapses and that you are paying the proper amount to receive coverage.

F) Respond appropriately should a lawsuit occur

If your injured employee does decide to sue, keep communication transparent and open with your own legal counsel as well as the employee in question. Litigation is often detrimentally costly, and you may be able to **settle the workers' comp claim** amicably and efficiently if you work to keep healthy communication between you and your employee.

G) Secure the scene

One accident doesn't need to turn into two. Create a barrier between the accident scene and the rest of the staff so that no one else gets injured. Secure any materials or equipment that may have been involved in the accident.

Paso 1	Paso 2	Paso 3	Paso 4	Paso 5	Paso 6	Paso 7

3. Traduzca los pasos A, E y F.

PARTE B: Clase virtual asincrónica:

Comprensión de textos: Tipología de ejercicios de comprensión 3.

En el Aula Virtual lea el texto y realice las actividades propuestas, recuerde que dispone de un tiempo limitado para realizarlas.

TRABAJO PRÁCTICO N° 5

PARTE A: estructuras y vocabulario.

Traducciones con se: pasivas, pasivas especiales, con elipsis, con sujeto consciente, verbos intransitivos, usos impersonales de you y one, frases pasivas, acciones reflejas y recíprocas, y frases con together, verbos get, become, grow, turn y make.

I. TRADUCCIONES CON "SE"

A. Traduzca las oraciones con casos de traducción con "se".

1. With the ever increasing energy demands, nanotechnology has been shown to significantly contribute to the production of alternative energy.
2. The immobilized crude oil gets washed off through the mesh, leaving behind HBC.
3. A material behaves like a superconductor when a pair of electrons called a Cooper pair moves together in a coordinated fashion.
4. The results are a little less robust with bikeability, which is not surprising since one has to keep in mind that the experiments were performed from the point of view of a pedestrian.
5. Participants are encouraged to reflect on their feelings and evaluate the public nature of the urban space, the intended usage of the public space, and their impressions of walkability and cyclability during these virtual visits and during the display of real videos.
6. Hundreds of *Geobacter* bacteria clump together so they can dump excess electrons into 'giant snorkels' called nanowires
7. Due to the pandemic-induced economic slowdown, the idea of constructing smart cities has become a distant dream for some countries
8. To avoid duplicate information, multimodal semantic items are synthesized to a single format while also minimizing the number of dimensions.
9. The world's finite resources are being rapidly depleted. More than a third of waste in global landfill is estimated to be of demolition and construction origin.
10. If properly automated, this task can be done faster than by a human
11. Skills such as hunter-gathering, nomadic herding, and stone tool-making had gone obsolete, and farming techniques, animal domestication, and irrigation methods became necessary skills to thrive.
12. The diesel engine business will continue to position itself as a domestic advanced supplier in a full range of applications, expanding its product line and market segments.

13. In 2020 German architect Anna Heringer was given the Obel Award for the Anandaloy community centre in Bangladesh. The building's structural elements are crafted from rammed earth made with mud from local ponds for its structural elements.

14. Whether through virtual, augmented, or mixed reality, an improvement in information retention, motivation and concentration is expected, as indicated by a recent study

15. Nanoimprinting Technique for Humidity-Responsive Holographic Images: A blue image at low humidity turns red as humidity increases.

16. The type of ash varies in coal, and this reflects the tendency for slagging, which must be accounted for in the boiler design.

17. The workers who used to assemble the light housings manually can now spend their time on other tasks, such as quality control. All they have to do is make sure that the cobot receives the parts once an hour.

18. When a coal cakes, the smaller particles adhere to one another, and large masses of fuel are formed on the grates

19. While these improvements in efficiency are useful, care must be taken to understand the limitations of AI models.

20. Users can interact with digital things in the actual world using AR technology, for instance, and can completely immerse themselves in a virtual environment using VR technology

21. When water cools, or evaporates, its capacity to dissolve is reduced and the mineral salts that have not dissolved in it tend to separate from the liquid and stick to walls and surfaces

22. The capacity of elements built from composite materials is dependent on how the concrete and rebar interact. Steel expands when it corrodes

23. Already substantial for a trip to the Moon, the cost differences between human and robotic journeys would grow much larger for any long-term stay

24. The expansion condition of the parallel line method is: the elements on the surface are parallel to each other and reflect the actual length on the projection surface.

B. Traduzca la oraciones apropiadamente según el contexto y función.

SELF/SELVES

1) reflexivo: cuando lgo o alguien realiza una acción que tiene efecto sobre sí mismo.

1ra persona – me, nos

2da persona – te, se (tiene variantes según se traduzc el pronombre como tú, usted, ustedes)

3ra persona – se

I find myself amidst another revolution

2) enfático:

a) mismo, propio

This demonstration is itself a contribution to deterrence and assurance
The initiative to investigate the deployment of SMRs at Halden, in southeast Norway, came from the municipality itself

b) solo, sin ayuda -self / by -self

The robot itself then performs obstacle avoidance and path planning to navigate towards the given goal.
This makes it very easy to teach the cobot a number of points, after which it moves along the surface by itself

1. As a result of the lack of inspiration, many companies find it difficult to put together an interesting business case. Finally, user-created services are made available to the whole community, allowing any member to make use of them or expand on them.
2. The recycled material consists of 90% carbon and is able to absorb CO2 from the atmosphere, and is itself a carbon-negative material.
3. Blocks and layers are the bread and butter of anyone who uses AutoCAD – a block is basically a group of shapes that are linked together to make one object.
4. In addition, there are other materials that have made headlines in recent years
5. The vulnerability of individuals is made clear, and this is due to the increasing use of social media platforms and the increase in electronic risks that have allowed cybercrime to thrive.
6. In the 1980s, scientists discovered a hole in Earth's ozone layer, created when CFCs rise to the stratosphere, break down and react with ozone, destroying it. In solving one problem, humanity found itself with another.

II. ELIPSIS

B. Traduzca los siguientes casos de elipsis

1. The developer of the project is Category Company, and once built, the project will be turned over to Common, a third-party management firm
2. There are many options in the field of vision and the choice of a type of system depends on the application the cobot has to perform. The difference is in cost, flexibility and ease of use. As said, there are two types of camera types; 2D and 3D.
3. These positions are maintained until changed by subsequent events in the process.
4. When optimising the possible application, they pay minimal attention to the tasks of the production employee. They are instructed and supported where necessary
5. Considering balancing exploration and exploitation, the author presented an online algorithm which promotes employees that have not been fully explored while optimizing the long-term platform utility with a limited budget
6. The data required to satisfy the service requirement are acquired from reputable sources if accessible and other untrusted sources.
7. Dissimilar metals should not be connected to each other unless separated by a dielectric fitting.
8. Consumers must understand that a vehicle's functionality can have serious safety impacts if not implemented securely

C. Traduzca apropiadamente las oraciones en voz pasiva según el contexto y función.

TRADUCCIONES DE LA VOZ PASIVA

1) Pasiva común sin by + complemento agente.
(2 traducciones posibles: con se y perifrástica)

Several frequently used statistical indicators are introduced to verify the diagnostic ability of the sample entropy.

- Varios indicadores estadísticos son introducidos para verificar la capacidad de diagnóstico de la entropía de muestra.
- Varios indicadores estadísticos se introducen para verificar la capacidad de diagnóstico de la entropía de muestra.

2) Pasiva común con by + complemento agente.
(Una sola traducción posible: perifrástica)

Anyone wearing a respirator must be trained by the company.
Cualquiera que use un respirador debe ser entrenado por la compañía.
~~Cualquiera que use un respirador se debe ser entrenar por la compañía.~~

3) Pasiva especial
(Una sola traducción posible: con se y alterando el orden)

Almost 75% of the population is expected to be urban by 2030.
Se espera que casi el 70% de la población sea urbana para 2030.

4) Pasiva al final de la oración
(Una sola traducción posible: con se y al principio de la frase)

This test was repeated four times to ensure that similar results were achieved.
Esta prueba fue repetida cuatro veces para asegurar que se logren resultados similares.
~~Esta prueba fue repetida cuatro veces para asegurar que resultados similares se logren.~~
~~Esta prueba fue repetida cuatro veces para asegurar que sean logrados resultados similares.~~

1.The project is a conceptual concept promoting sustainability, optimising the building design, and minimising materials. Moreover, biomass, biomaterials, and carbon capture technologies are finely integrated.

2. Naturally, the material was immediately adopted by the military and optics industries.

3. The lifetime of the coating will be extended due to the passive film maintaining for a wider potential range.

4. Dark matter is thought to be more abundant than normal matter.

5. Hexagonal panels dubbed HexChar were installed on an Audi dealership in Munich last year, marking the first time the product had been used on a building.

6. Now, by combining metasurfaces and neural networks, images equivalent to those of a camera with six lenses and half a million times the size can be obtained

7. Titanium dioxide has been found to decrease the corrosion rate.

8. Quantum particles are correlated in ways we can't describe with everyday logic or language– they don't communicate while also containing a hidden code, as Einstein had thought.

C. <u>Traduzca el segmento del texto asignado a su grupo.</u>

PARTE 1 **Industrial – Meatrónica - LCC**	**A Wolverine Inspired Material** RIVERSIDE, Calif. (www.ucr.edu) — Scientists, including several from the University of California, Riverside, have developed a transparent, self-healing, highly stretchable conductive material that can be electrically activated to power artificial muscles and could be used to improve batteries, electronic devices, and robots. The material has potential applications in a wide range of fields. It could give robots the ability to heal themselves after mechanical failure; extend the lifetime of lithium ion batteries used in electronics and electric cars; and improve biosensors used in the medical field and environmental monitoring. "This project brings together the research areas of self-healing materials and ionic conductors. Inspired by wound healing in nature, self-healing materials repair damage caused by wear and extend the lifetime, and lower the cost, of materials and devices. Wang developed an interest in self-healing materials because of his lifelong love of Wolverine, the comic book character who has the ability to self-heal. Ionic conductors are a class of materials with key roles in energy storage, solar energy conversion, sensors, and electronic devices. Another author of the paper, Christoph Keplinger, an assistant professor at the University of Colorado, Boulder, previously demonstrated that stretchable, transparent, ionic conductors can be used to power artificial muscles and to create transparent loudspeakers – devices that feature several of the key properties of the new material (transparency, high stretchability and ionic conductivity) – but none of these devices additionally had the ability to heal themselves from mechanical damage. The key difficulty is the identification of bonds that are stable and reversible under electrochemical conditions. Conventionally, self-healing polymers make use of non-covalent bonds, which creates a problem because those bonds are affected by electrochemical reactions that degrade the performance of the materials.

PARTE 2 **Petróleos, Arquitectura - Civil**	Wang helped solve that problem by using a mechanism called ion-dipole interactions, which are forces between charged ions and polar molecules that are highly stabile under electrochemical conditions. He combined a polar, stretchable polymer with a mobile, high-ionic-strength salt to create the material with the properties the researchers were seeking. The low-cost, easy to produce soft rubber-like material can stretch 50 times its original length. After being cut, it can completely re-attach, or heal, in 24 hours at room temperature. In fact, after only five minutes of healing the material can be stretched two times its original length. Timothy Morrissey and Eric Acome, two graduate students working with Keplinger, demonstrated that the material could be used to power a so-called artificial muscle, also called dielectric elastomer actuator. Artificial muscle is a generic term used for materials or devices that can reversibly contract, expand, or rotate due to an external stimulus such as voltage, current, pressure or temperature. The dielectric elastomer actuator is actually three individual pieces of polymer that are stacked together. The top and bottom layers are the new material developed at UC Riverside, which is able to conduct electricity and is self-healable, and the middle layer is a transparent, non-conductive rubber-like membrane. So, just like how a human muscle (such as a bicep) moves when the brain sends a signal to the arm, the artificial muscle also reacts when it receives a signal. Most importantly, the researchers were able to demonstrate that the ability of the new material to heal itself can be used to mimic a preeminent survival feature of nature: wound-healing. After parts of the artificial muscle were cut into two separate pieces, the material healed itself without relying on external stimuli, and the artificial muscle returned to the same level of performance as before being cut.

PARTE B: Clase virtual asincrónica:

Comprensión de textos: Aviso de ofrecimiento de empleo 3.

En el Aula Virtual lea el texto y realice las actividades propuestas, recuerde que dispone de un tiempo limitado para realizarlas.

TRABAJO PRÁCTICO N° 6

PARTE A: estructuras y vocabulario.

- **Modo subjuntivo parte I:** oraciones con conectores, frases subjuntivas, expresiones con *wish*, verbos que requieren subjuntivo en español, uso de *should*, subjuntivo con *to-infinitive*, imperativos, cláusulas con referencia temporal futura.

	Verbo o frase introductora	Frase nominal	To-infinitivo Infinitivo -ing
It was suggested not to raise taxes at the end of the year Se sugirió no cobrar impuestos a final de año.	**It was suggested that the government not raise taxes at the end of the year.** Se sugirió que el gobierno no cobrara impuestos a final de año.		
They recommend to be here at three. (Ellos) recomendaron estar allí a las tres.	**They recommend <u>that</u> every student be here at three.** Ellos recomendaron que cada estudiante estuviera allí a las tres.		

A. <u>Traduzca las siguientes oraciones</u>

1. May the nanoscale force be with you: Detecting ultrafast light by its force. (Título)
2. They wish human life to be more convenient, free workers from repetitious tasks, then workers can focus on valuable and meaningful tasks.
3. I don’t think architecture and structural engineering were two separate professions.
4. Using thin-film technology in nuclear clocks is commensurate with semiconductors and photonic integrated circuits, suggesting that future nuclear clocks could be more accessible and scalable.
5. These two men took a funny selfie and posted it on her Facebook, warning her to never leave her account logged in again.
6. Testing the narrative to ensure it meets organizational goals is a critical step in this process.
7. The increased efficiency, accuracy, and adaptability of drone surveying helps to make sure construction companies can deliver more projects on time and within Budget.
8. However, the city of Heidelberg wanted their data to be in the vicinity of users.
9. But he hopes his team's prototype will show that, in some cases, AI can help millions of Americans become more independent.
10. We would recommend that most companies avoid using manual flights unless there is some special circumstances that require it.
11. These bricks are cheap compared to mechanical filtration technologies. They also use lesser energy and require no skilled labor to construct the system.
12. We always find deep fulfillment in our renovations projects, whether it be making improvements to a building, or reinventing an entirely new way to exist in the space, it brings us an immense amount of joy to have the ability to continue the story of the building.

13. But debates about quantum mechanics – be they on chat forums, in the media or in science fiction – can often get muddled thanks to a number of persistent myths and misconceptions.
14. For this class of materials to be adopted in future electronics, we need them to be even better conductors.
15. It is now actually possible we could grow building materials that do the things we need them to do.
16. I asked firms to describe a situation that illustrated how their working routines adapted to COVID restrictions.
17. The study recommends that Indiana state should proceed with feasibility studies, build partnerships for small modular reactor (SMR) development and prioritize stakeholder engagement to ensure SMRs are integrated smoothly and beneficially into the state's energy portfolio.
18. Set up a Google Password Manager PIN to ensure your passkeys are end-to-end encrypted and can't be accessed by anyone, not even Google.
19. We demand that architects think about their role in spatial justice differently. We should be in the process of choosing what is going to get built as opposed to just designing what somebody else has preprogrammed.

B. Traduzca la oraciones apropiadamente según el contexto y función.

1. We need powerful tiny batteries to unlock the full potential of microscale devices.
2. By incorporating customer feedback into their mission, vision, and goals, organizations can ensure they are moving in a customer-driven direction.
3. These issues require close collaboration with materials scientists and people working on microrobotics.
4. These answers will enable us to formulate recommendations for designers and evaluators concerning the use of virtual reality in the case of new projects to ensure that a space meets sustainability expectations.
5. They also hope to explore their use in a wide range of applications, from meeting environmental challenges to diagnosing and treating diseases. (Biomedical engineers at the University of California, Davis, have created semi-living "cyborg cells." Retaining the capabilities of living cells, but unable to replicate)
6. The study in this section reveals that approaches employing public-key encryption methods are unsuitable for crowdsourcing since they need the persons issuing the keys for decryption to do so online.
7. Integrated photonics will enable a new generation of applications that have so far been imposible.
8. The researchers hope that their approach will increase not only the safety of automated driving but also social acceptance of it.
9. The authors created an HBase-based database to save semantic data and ensure synchronization.
10. Indeed, the nature of connectivity and interactivity requires that cyber security researchers adopt an inter-disciplinary and/or multi-disciplinary approach to solving cyber security problems.

Should

TRADUCCIONES DE SHOULD

1) AL PRINCIPIO DE LA ORACIÓN O EN POSICIÓN INICIAL

- **Preguntas:** DEBERÍA.

Should each sheet be considered as a separate element?

¿Debería cada lámina ser considerada como un elemento separado?

- **Condicional** (sin nexo) NO SE TRADUCE.

Should each sheet be considered as a separate element, then the inventory will change.

Si cada lámina es considerada como un elemento separado, entonces, el inventario cambiará.

1) EN EL MEDIO DE LA ORACIÓN

- **Verbo modal: DEBERÍA**

Each sheet should be considered as a separate element.

Cada lámina debería ser considerada como un elemento separado.

- **Marcador de subjuntivo (con verbo introductorio o estructura de subjuntivo): NO SE TRADUCE.**

Officials hope the survey should lead oil field workers to a safer place.

Los oficiales esperan que la encuesta lleve a los trabajadores de los yacimientos de petróleo a un lugar más seguro.

C. Traduzca las siguientes oraciones con "should" según el contexto y la función.

1. How intelligent should machines become?
2. Should they used the new design techniques, the operation would be easier.
3. This kind of research should bring smart windows to market that will be just as useful in cold countries.
4. Should robots be made so intelligent that some time in the future they see humans as an obstacle to their continued progress?
5. Should any part of the equipment be defective, it will be serviced free of charge.
6. We suggested he should come immediately.
7. Some environmental organizations, including the Sierra Club, oppose nuclear energy on the grounds that funding should be prioritized on renewable sources such as wind and solar.
8. Should humans do everything that is technically feasible?
9. It is important that these systems should be protected against data theft and manipulation.

D. Texto.

1. Lea el siguiente texto y traduzca la parte marcada.

Neuroarchitecture: How Your Brain Responds to Different Spaces

Basilica of Saint Francis of Assisi, Italy. Photo by Blackcat, via Wikimedia. License CC BY-SA 3.0

Amazon Spheres in Seattle / NBBJ. Photo © Bruce Damonte Architectural Photographer

Salk Institute / Louis Kahn. Photo © Liao Yusheng

Have you ever heard of neuroarchitecture? What would spaces look like if architects designed buildings based on the emotions, healing and happiness of the user? Hospitals that help with patient recovery, schools that encourage creativity, work environments that make you more focused…

This is neuroarchitecture: designing efficient environments based not only on technical parameters of legislation, ergonomics and environmental comfort, but also on subjective indices such as emotion, happiness and well-being.

How many times have you been to a place, whether it be a park, a housing project, a mall, a house, a building, and felt depressed and anxious, or the opposite, happy and excited?
I remember when I visited Barcelona in 2008 and I walked into a church called Santa Maria del Mar and I cried with emotion: I didn't want to leave, it was one of the most welcoming and exciting places I had ever visited and being there made me immensely happy and I didn't know why.

With advances in neuroscience, it is becoming easier every day to measure these indices and understand how shapes, colors and scales can influence human perceptions. Currently, it is already possible to use MRI machines and virtual reality to understand how brain waves behave in spaces through biofeedback.

For example, with augmented reality glasses, we can show the project to the client in advance and measure their heart rate to understand their reaction when seeing the perspective.

How did it start?
One of the first to observe that spaces influenced emotions was the American doctor who created the polio vaccine, Jonas Salk. In the 1950s, Jonas spent time in Italy and realized that every time he visited the Basilica of St. Francis of Assisi, located in the city of Assisi and built in the 13th century, he became more creative and inspired.

When he returned to the US in 1962, he created a school called the Salk Institute for research in the fields of molecular biology, genetics, neuroscience and plant biology in the city of La Jolla, California.

For that, he called on the architect Louis Kahn, and asked for the project to be a mixture of art and science, where functionality and aesthetics walk side by side, inspiring scientists to do research as artists do art. Today the Institute building is one of the most incredible and emblematic buildings built in the 20th century.

In fact, the walkway between the blocks to the beach is reminiscent of the walk to the altar of the Basilica of Assisi, as Salk dreamed of.
People and environments require architects and designers to pay more attention to these aspects, given that they have a greater chance of generating long-lasting effects. We hope more architects specialize and understand a little more about neuroarchitecture

How to Apply it?
There is no ready-made recipe to apply neuroarchitecture, but there are some details that can be observed in the construction of spaces.

For example, in acoustics it is important to pay attention to the sounds of the environment depending on the type of project. Are there street sounds disturbing concentration and sleep? Would it be necessary to use acoustic materials? If it's a work environment, to what extent does a very open coworking office interfere with production?

In the case of lighting, we also need to observe how light enters the space. The human body is more comfortable with natural light, but if a lot of artificial light is needed, what types of color and intensity of the lamp could not cause glare?

If it is a relaxation space like a restaurant or even a residence, the use of yellow lights, which are more cozy, may be more convenient. If it is a hospital, a healing and treatment environment, perhaps other colors like blue and orange, known as refreshing, would be more interesting.
When it comes to furniture, for example, in a kindergarten, curves would be more interesting than corners, which resemble danger and fear, which can make some children scared and reactive.

It is also known that vegetation is associated with the connection with nature, which, in addition to helping to raise the quality of the air inside the space, brings calmness to users.
When we talk about colors we know that warm colors like orange and red bring excitement and movement and cool colors like blue and green bring calm and serenity. We also know that color contrasts cause energy and analogous colors cause comfort, so there must be a very strong study of chromatic composition to measure user satisfaction levels.

Everything will depend on the type of space, the client's requirements and the context of the construction. And in fact, there is not just one item to focus on in a project that takes neuroarchitecture into account, in the end it is the intersection of all that: color, natural and artificial light, landscaping, scale, materials…

2. Explique con sus propias palabras la relevancia de los siguientes aspectos:

Colores:	

Formas:	
Luz:	
Sonidos:	
Vegetación:	

PARTE B: Clase virtual asincrónica:

Comprensión de textos: Tipología de ejercicios de comprensión 4.

En el Aula Virtual lea el texto y realice las actividades propuestas, recuerde que dispone de un tiempo limitado para realizarlas.

TRABAJO PRÁCTICO N° 7

PARTE A: estructuras y vocabulario.

- **Modo subjuntivo parte II:** en oraciones condicionales, expresiones *keep from, prevent from, stop from, enable to, allow to, be likely to*, causativos. Introductores *it* y *there.*

A. Traduzca las siguientes oraciones

1. Failures due to rapid wear can substantially be reduced by specifying appropriate lubricants. These create interfacial incompressible films that keep the surfaces from contacting.
2. Known as the ZNK95 (above), the truck features a fully cab-less design – meaning there isn't even a place for an operator to sit, let alone operate.
3. Entanglement is a quantum property which links two different particles so that if you measure one, you automatically and instantly know the state of the other – no matter how far apart they are.
4. Chromatography is a lab technique which enables scientists to separate the components of a mixture.
5. Within the pharmaceutical industry, semi-autonomous machines are widely used. Normally these are loaded and unloaded by an employee. However, it is also possible to have this task done by a robot.
6. There are passive, active, or even ultra-intelligent smart clothing, i.e., that adapts to the environment as if it were an organism.
7. The new measure is expected to include several provisions to prevent Chinese firms from accessing restricted hardware such as GPUs through intermediary countries, which remains a significant means of circumventing US export controls.
8. Forest have recommended walking up and down the aisles of an airplane (when the "Wear Seatbelt" sign is off) to get your blood flowing.
9. Eugene Houdry had developed a catalytic process in the late 1930s to make high-octane fuel, which can withstand higher compression and allows engines to deliver more power
10. Because a cobot is so easy to program, it can be quickly implemented in a process and it is even possible to have it perform different tasks.
11. It is thus essential that the built environment supports the leveraging of such advanced technology in smart campuses and smart cities.
12. Where the true difficulty lies, perhaps, is in how to reconcile quantum physics with our intuitive reality. Not having all the answers won't stop us from making further progress with quantum technology.
13. Until and few years ago, it took a lot of customization and complex programming to get machines and robots to communicate with each other.

14. These are turbulent times for many companies in the manufacturing sector. With rising prices and a global labor shortage, it is essential for companies to look at how to stay competitive and continue to grow.
15. The insertion of ALD layers whatever the architecture or the material is, promotes the hydrophobicity of the coating. (ALD: Atomic Layer Deposition)
16. The University of Illinois microreactor will be built next to the Abbott coal plant. It could take a few years to get construction permits approved, but Grunloh's hopeful the nuclear reactor in Champaign could be up and running by 2030.
17. To produce the thin films, the researchers used a process called physical vapor deposition (PVD), which involved heating thorium fluoride in a chamber until it vaporized.
18. In order for humans to reap the full benefits of utilising service robots, it is vital to consider and ensure the safety of these service robots.
19. Volvo will reveal another new addition to its HDEV line-up. None of them are likely to show up with a practical battery-swap EV solution that's ready to deploy, today.
20. Consultants had earlier found that the building's glass could not withstand thermal stress, which occurs when a warm area of glass expands against a cooler area, creating pressure that can cause it to crack.
21. As for vacuum grippers, it is wise to use a gripper that does not require an external air supply.

HAVE

1. TENER, COMER, BEBER, TOMAR

- Small robots with the corresponding small grippers have a pneumatic drive.
  Los robots pequeños con sus pinzas/agaraderas pequeñas tienen un traccionamiento, transmisión neumática.
- Astronauts could have coffee in Mars.
  Los astronautas podrían tomar/beber café en Marte.
- Workers have breakfast in the Company.
  Los trabajadores toman el desayuno en la Compañía.
- Our mind-set determines what vegetables we will have.
  Nuestra mentalidad/actitud determina qué vegetales comeremos.

2. + PARTICIPIO PASADO (-ED/3RA. COLUMNA): HABER

- Japanese developers have been working on an artificial muscle consisting of a rubber hose, tension-proof fibers, and a protective collar.
  Los desarrolladores japoneses han estado trabajando es un músculo artificial consistente en en una manguera de goma, fibras a prueb de tensión y un collarín protector.

3. SEGUIDO DE *TO*: TENER QUE

- This means that each pizza doesn't have to be prepared from scratch.
  Esto significa que cada pizza no tiene que ser preparada desde cero/desde el principio.

4. SEGUIDO DE FRASE NOMINAL + PARTICIPIO PASADO/INFINITIVO: HACER QUE

- Robots, especially cobots, are very easy to program. This makes it possible to have them perform different tasks in a short period of time.
  Los robots, especialmente los cobots, son muy fáciles de programar. Esto posibilita hacer que desempeñen diferentes tareas en un período corto de tiempo.
- The motors spinning the opposite direction have their speeds increased.
  Los motores que giran en la dirección opuesta hacen que su velocidad se incremente.

AL PRINCIPIO DE LA ORACIÓN.

5. HAD AL PRINCIPIO DE UNA ORACIÓN NO INTERROGATIVA, SEGUIDO DE FRASE NOMINAL PARTICIPIO PASADO + : SI … HUBIERA

- Had the nucleus had a positive charge, the result would have been different.
  Si el núcleo hubiera/hubiese tenido carga positive, el resultado habría sido diferente.

6. PREGUNTA: HABER

- Had Quaise Energy hoped to convert an old coal power plant into a geothermal plant?
  ¿Había Quaise Energy esperado (deseado) convertir una planta de energía de carbón/a base de carbón en una planta geotérmica?

Quaise Energy, una empresa derivada del MIT, está trabajando para crear pozos geotérmicos a partir de los agujeros más profundos del mundo.

B. Traduzca la oraciones apropiadamente según el contexto y función.

1. Scientists at the German Aerospace Center have integrated a robotic gripper arm in an autonomous helicopter.
2. One possibility is growing food inside of protected enclosures. Such enclosures would have to mimic conditions here on Earth, of course.
3. The quarks have positive or negative charges.
4. Had cryolite waste been well-researched in terms of recycling some of its waste products?
5. To have coffee Coffee Could Lower Your Risk of Heart Disease.
6. Considering the rapid developments of the past years, robotics will have a lasting influence and will shape the future for humans.
7. Researchers at Arizona State University in the US have developed nanorobots that can search for tumors in the body on their own.
8. By law we have to keep basic information about our customers.

9. You could have the Panda do the same thing every day.

10. Had he not seen it with his own eyes, he would not have believed it.

Enable (permitir)	**enable + persona gramatical + to inf (permitir que)**
It enables quick decision making Permite tomar decisiones rápidamente	It enables those involved to keep organized Permite ue aquellos involucrados se mantengan organizados.
Allow (permitir)	**allow + persona gramatical + to inf (permitir que)**
They will not allow the internal suboperations. No permitirán las suboperaciones internas	Predetermined time systems allow the analyst to visualize the work. Sistemas de tiempo predeterminados permiten que los analistas visualicen el trabajo.
keep	**Keep … from + ing (evitar que)**
It is important to keep the quality at the specified level. Es importante mantener la calidad al nivel especificado.	The mud cleaner screen keeps larger particles from entering the system. La pantalla/rejilla limpiadora de barro evita que las partículas grandes entren al sistema.
prevent	**prevent … from + ing (evitar que)**
This device will prevent the shaft movement. Este dispositivo prevendrá/evitará el movimiento del eje.	This device will prevent the shaft from moving. Este dispositivo evitará que el eje se mueva.
restrict	**restrict … from + ing (evitar que)**
He restricted his work to that of observing. (Él) restringió su trabajo a la observación/a aquél de observar.	They restricted the fluid from spilling. (Ellos) evitaron que el fluido se derramara.
stop (parar, detener)	**stop … from + ing (evitar que)**
They stopped the production of that product. (Ellos) pararon la producción deese producto.	We cannot stop workers from thinking. No podemos evitar que los trabajadores pienen.
cause (causar)	**cause + persona gramatical + to inf (Hacer que)**
The failure of a single component (even minor) can cause shutdown of the module or entire system. La falla de un solo/único componente (aún sea el menor) puede causar el cierre del módulo o del sistema completo.	The design of the machines caused ergonomic problems to occur. El diseño de las máquinas/la maquinaria hizo que ocurriera el problema ergnómico.

1. Additionally, the use of multiple lasers and advanced algorithms allows for higher resolution and improved accuracy.
2. There was a hardware error that prevented the FCB from calculating the altitude at which the UAV was flying.
3. Regular maintenance is essential to keep iron gates and railings in good repair.
4. Nevertheless, all will benefit from integrated digitalization to enable them to be more responsive to their customers in order to produce timely products with reliable high quality.
5. The hydrophobicity caused the decrease of the corrosion current density
6. The microscale allows us to combine the excellent properties of the different materials in a composite
7. Several factors have caused the packaging industry to become more complex.

8. Within the construction and manufacturing industries, lidar enables accurate and efficient surveying, planning, and quality control.
9. The roof had been designed to release rainwater slowly to keep from inundating the nearby West Bottoms area. Sadly, this unfortunate design allowed rainwater to collect and pool on the roof.
10. The temptation to feel how rough the surfaces are should also be avoided to prevent abrasion and contamination by grease

D. Lea el texto que está a continuación. Tradúzcalo

Arquitectura y Civil	By Hayden Horner on January 14th, 2025 **Trends to Watch in 2025 and Beyond** As we look ahead to 2025 and beyond, the engineering sector is poised for a period of remarkable transformation. From the rise of renewable energy to advancements in artificial intelligence (AI), robotics, and cybersecurity, engineers will play a pivotal role in shaping the future of our world. Technological innovations and societal shifts are driving these changes, and both professionals and companies in the engineering field need to stay agile and forward-thinking to thrive in this dynamic environment. The Engineering Institute of Technology (EIT), believes that staying ahead of the curve is essential for success. Their courses are designed to ensure that students are equipped with the skills and knowledge needed to lead in these areas, preparing them for the evolving landscape of engineering. **The Rise of Renewable Energy and Sustainability** The global push toward sustainability has never been more urgent. With net-zero targets becoming a key priority for governments, organizations, and individuals, the demand for renewable energy sources such as wind, solar, and green hydrogen is skyrocketing. In addition to energy production, industries such as manufacturing, construction, and transportation are being redefined by energy-efficient design and green technologies. **Implications for Engineers:** Engineers with expertise in sustainable energy, environmental impact assessments, and green technologies are in high demand. The future of engineering will require professionals who can innovate and design systems that minimize environmental harm while maximizing efficiency. **How EIT Prepares Engineers for Sustainability:** EIT offers specialized programs in sustainable engineering that equip students with the skills to design and implement energy-efficient systems and renewable energy solutions. Courses focusing on sustainable energy technologies and environmental engineering ensure that graduates are prepared to meet the growing demand for green technologies and contribute to global sustainability efforts. **Implications for Companies:** For companies looking to position themselves as leaders in sustainability, hiring engineers with expertise in renewable energy technologies and environmental sustainability will be key. Embracing green practices not only helps businesses meet regulatory standards but also appeals to eco-conscious customers and stakeholders. Organizations that invest in sustainable solutions will set themselves apart in an increasingly environmentally aware market.

Mecatrónica y Petróleos	**Artificial Intelligence (AI) and Robotics in Engineering** AI and robotics are rapidly changing the landscape of engineering. Automation, data analysis, and AI-driven design are becoming integral to a range of engineering disciplines, including civil, mechanical, and electrical engineering. From autonomous robots in construction sites to AI systems that optimize design processes, these technologies are making engineering more efficient and precise. **Implications for Engineers:** Engineers who understand AI, machine learning, and robotics will be in high demand. As AI technologies evolve, the need for professionals who can design, implement, and maintain these systems will only grow. Engineers must embrace continuous learning to stay at the forefront of these technologies and adapt to their integration into engineering practices. **How EIT Prepares Engineers for AI and Robotics:** EIT's courses in mechatronics, robotics, and artificial intelligence are tailored to prepare students for the rapidly evolving intersection of engineering and technology. Students gain hands-on experience with AI algorithms, machine learning, and robotics systems, positioning them to implement cutting-edge solutions in their careers. EIT's focus on practical, real-world applications ensures that graduates are ready to meet the growing demand for skilled engineers in these fields. **Implications for Companies:** Implementing AI and robotics into engineering practices can greatly enhance productivity and reduce human error. For companies, this means improved cost-efficiency and the ability to tackle more complex projects. However, adopting these technologies requires skilled professionals capable of ensuring smooth integration and optimizing these systems for long-term success. **Remote Engineering and Virtual Collaboration** The COVID-19 pandemic accelerated the adoption of remote work, and this shift is becoming permanent in many sectors, including engineering. Remote engineering is now commonplace, especially in fields such as software development, project management, and civil engineering. Virtual collaboration tools allow engineers to work from anywhere, opening up a global talent pool for companies and enabling professionals to manage projects remotely. Implications for Engineers: The ability to work remotely is a valuable skill for engineers, as it allows them to engage in projects without geographical constraints. Proficiency in virtual collaboration tools, such as project management platforms, video conferencing software, and cloud-based design tools, will be essential for engineers to stay competitive in the global job market. **How EIT Prepares Engineers for Remote Work:** At EIT, we embrace the future of remote engineering by providing courses that incorporate virtual collaboration tools and project management techniques. Through online and hybrid learning formats, students gain the flexibility to work and communicate remotely, simulating real-world engineering environments. This approach ensures that EIT graduates are well-equipped to manage projects and collaborate with global teams in diverse, remote settings. **Implications for Companies:** Embracing remote work enables companies to hire the best talent regardless of location, creating more diverse and inclusive teams. However, remote work requires companies to invest in secure, efficient digital tools to maintain smooth communication, project tracking, and collaboration across global teams. The engineering firms that excel at virtual collaboration will be able to attract top-tier engineers and respond to global demands more swiftly.

LCC e Industrial	**Cybersecurity in Industrial Systems** With the increasing digitalization of industries, cybersecurity has become a critical focus. From smart cities to industrial control systems, the need to safeguard infrastructure from cyber threats is more urgent than ever. Engineers working in fields such as energy, manufacturing, and construction must design secure systems capable of withstanding evolving cyber threats. **Implications for Engineers:** Engineers with a background in cybersecurity, particularly those working with IoT devices, digital control systems, and industrial automation, will be in high demand. The future of industrial engineering will require professionals who can identify vulnerabilities, design secure networks, and implement robust cybersecurity measures to protect critical infrastructure. **Implications for Companies:** As industries become more connected, companies must prioritize cybersecurity to prevent data breaches, system failures, and operational disruptions. Firms that invest in skilled cybersecurity professionals will not only protect their systems but also build trust with clients and stakeholders who depend on secure, reliable engineering solutions. **Emphasis on Workforce Diversity and Inclusion** Diversity and inclusion are central to the future of engineering. Traditionally, engineering has been a male-dominated field, but in recent years, there has been a concerted effort to create more inclusive workplaces. Diverse teams bring varied perspectives, fostering creativity and improving problem-solving. This is essential in a field like engineering, where innovation is key to addressing complex global challenges. **Implications for Engineers:** Engineers from diverse backgrounds are encouraged to pursue careers in the field, bringing their unique insights and experiences to the table. Companies that prioritize diversity will benefit from a broader range of ideas, leading to better solutions for clients and communities. **How EIT Fosters Diversity and Inclusion:** EIT is committed to creating a diverse and inclusive learning environment. They encourage students from all backgrounds to join their programs, where they will find a supportive community that values diverse perspectives. By providing equal opportunities for all, they aim to shape the future of engineering with teams that are not only highly skilled but also represent a wide range of viewpoints and experiences. The institution's international staff compliment, learning platform and approach to pricing gives students access to education – further fostering diversity and inclusion. **Implications for Companies:** Emphasizing diversity is not just a matter of ethics; it's a business strategy. Organizations that foster inclusive workplaces can attract top talent, improve team performance, and enhance their reputation. By prioritizing diversity in recruitment, training, and leadership, companies will position themselves as forward-thinking and adaptable in a competitive market. **Looking Forward: Embracing Change** Whether it's in renewable energy, AI, cybersecurity, or remote collaboration, the opportunities are vast—and the future is bright.

PARTE B: Clase virtual asincrónica:

Comprensión de textos: Aviso de ofrecimiento de empleo 4.

En el Aula Virtual lea el texto y realice las actividades propuestas, recuerde que dispone de un tiempo limitado para realizarlas.

TRABAJO PRÁCTICO N° 8

PARTE A: estructuras y vocabulario.

- **Comparación de adjetivos y adverbios:** comunes, irregulares, comparativos especiales.
- **Verbos con partícula:** Verbos + preposición, verbos + partícula adverbial, verbos de movimiento +partícula adverbial.

A. Traduzca las siguientes oraciones

1. For pipe bending, it is not the larger the relative bending radius and relative thickness value the greater the deformation.
2. The cobot industry is expected to grow to $2.2 billion by 2026, with which we are also expected to see more and more modular robotic work cells
3. Pneumatic grippers are suitable for less complex tasks and are operated with compressed air. They are often somewhat easier to use, cheaper to buy, have a high gripping force and are lighter than other grippers.
4. There are three ways to make AutoCAD quicker and easier to use. First and foremost, is using blocks and layers to automate your work flow.
5. And when it comes to ROI, provide evidence to back it up. The clearer and more concise your ROI message is, the better the chance to win or sustain business. (ROI: Return on Invesment)
6. One alternative which at least negates the need for electricity is known as photochromic.
7. We worked for months to get the equations cleaner and cleaner, until we got to the point where we could describe the connection between the output light and the input correlations with just one compact equation.
8. In hot riveting, the diameter of the rivet hole should be slightly larger than the diameter of the rivet rod due to thermal expansion and thickening.
9. The remaining solids are filtered and the water is boiled down until it thickens. The thicker the solution, the faster it will dry.
10. In the absence of a magnetic field, the resistance of purple bronze was highly dependent on the direction in which the electrical current is introduced. Its temperature dependence was also rather more complicated.
11. On a large scale, this has consequences for the competitive position of the Netherlands. It also has consequences for the people on the work floor. Naturally, things are getting busier and busier and this causes stress.
12. The good news is that recycling or donating anything with plugs, batteries, or cables has never been simpler or more accessible. So get to your nearest recycling location available here and make the most out of your unused FastTech items.
13. However, research shows that the more cobot and human work together (and are interdependent), the more they benefit from each other's qualities.

14. Industrial automation and IT are two different things, but current technological developments are bringing these two fields closer and closer together
15. Called the UR20, the cobot features an entirely new joint design that will allow for even faster
16. Nanoparticles (nano-composite) are being used for the purposes of manufacturing gold clubs. By replacing the former material with nano-composite, it has become possible to not only make the clubs lighter, but also stronger.
17. In general, the longer the occupation of a specific space, the more enduring its effects tend to be.
18. The process of adjustment of our economy shall require a series of changes. First of all, changes in public sector policies, technological innovation and last but not least, these will have to come together with changes in market sentiment of investors as well as of consumers.
19. With lidar, solutions for blind spot monitoring, lane centering, and automatic parking assistance are becoming more and more accessible for businesses.
20. Pulling ideas from materials such as bird skulls, polar bear fur, and mimosa leaves, it created a design with far lower projected energy consumption.

VERBOS CON PARTÍCULA.

Verbos de movimiento con partícula: su traducción

- Es frecuente que en inglés el verbo en sí mismo indique un tipo de movimiento determinado, y que la preposición muestre el camino o la dirección de ese movimiento.
- Estos verbos se traducen normalmente en español con un verbo que indica la dirección del movimiento. Un complemento circunstancial indica el tipo de movimiento.
- Algunos verbos de movimiento son: walk, step, go, run, hurry, speed, fly, slip, escape, creep, limp, etc.

- To creep out: escapar sigilosamente
- To march up: dirigirse hacia alguien con paso decidido
- To rush in: entrar apresuradamente, entrar a toda prisa
- To run away: alejarse corriendo

B. Traduzca las siguientes oraciones con verbos con partícula.

1. Researchers use bacteria to produce biodegradable plastic from renewable raw materials (and break down traditional plastic too)

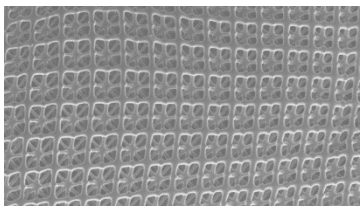
2. Renewable energy comes from naturally replenishing sources that do not run out.
3. When the fire alarm went off, everyone rushed out of the building
4. The protons and neutrons that make up an atom's nucleus, are so small that researchers have a difficult time measuring them directly.
5. Large icebergs float away as the sun rises near Kulusuk, Greenland,
6. Facilities teams often need months to create models that can interpret sensor data and adapt lights and heating to work around the ebb and flow of occupants. AI systems can figure out these patterns within days.
7. Chen proposed a mobile system called iBaby for monitoring and finding children who drift away from their parents using IoT devices (wearables) to actively detect if they are being led away by strangers.

C. Traduzca las oraciones marcadas.

New wonder material designed by AI is as light as foam but as strong as steel

By Ben Turner
published January 31, 2025

The new technique could produce materials for use in helicopters, airplanes and spacecraft.



An image of the new nanomaterial. (Image credit: Peter Serles/University of Toronto Engineering)

Scientists have used artificial intelligence (AI) to design never-before-seen nanomaterials with the strength of carbon steel and the lightness of styrofoam.

The new nanomaterials, made using machine learning and a 3D printer, more than doubled the strength of existing designs. The scientists behind the new study said they could be used in stronger, lighter and more fuel-efficient components for airplanes and cars. They published their findings Jan. 23 in the journal Advanced Materials.

"We hope that these new material designs will eventually lead to ultra-light weight components in aerospace applications, such as planes, helicopters and spacecraft that can reduce fuel demands during flight while maintaining safety and performance," co-author Tobin Filleter, a professor of engineering at the University of Toronto, said in a statement. "This can ultimately help reduce the high carbon footprint of flying."

In many materials, strength and toughness can often be at odds. Take a ceramic dinner plate, for example: while plates are usually strong and can carry heavy loads, their strength comes at the cost of toughness — it doesn't take much energy to make them shatter.

The same problem applies to nano-architectured materials, whose construction from multitudes of tiny, repeating building blocks 1/100th the thickness of a human hair makes them strong and stiff for their weight, but can also cause stress concentrations that lead to sudden breakages. So far, this tendency to shatter has limited the materials' applications.

"As I thought about this challenge, I realized that it is a perfect problem for machine learning to tackle," first-author Peter Serles, an engineering researcher at Caltech, said in the statement.

To search for better ways to design nanomaterials, the researchers simulated possible geometries for their design before passing them through a machine learning algorithm. By learning from the designs they had generated, the algorithm was able to predict the best shapes that would evenly distribute applied stresses while also carrying a heavy load.

With these shapes in hand, the researchers used a 3D printer to create their new nanolattices, finding that they could withstand a stress of 2.03 megapascals for every cubic meter per kilogram — a strength five times higher than titanium.

"This is the first time machine learning has been applied to optimize nano-architected materials, and we were shocked by the improvements," Serles said. "It didn't just replicate successful geometries from the training data; it learned from what changes to the shapes worked and what didn't, enabling it to predict entirely new lattice geometries."

The researchers said their next steps will center on scaling up the materials until they can be used to make bigger and bigger components, while also searching for even better designs using their process. The primary aim is to design much lighter and stronger components for vehicles in the future.

"For example, if you were to replace components made of titanium on a plane with this material, you would be looking at fuel savings of 80 litres per year for every kilogram of material you replace," Serles said.

PARTE B: Clase virtual asincrónica:

Comprensión de textos: Tipología de ejercicios de comprensión 5.

En el Aula Virtual lea el texto y realice las actividades propuestas, recuerde que dispone de un tiempo limitado para realizarlas.

TRABAJO PRÁCTICO N° 9

PARTE A: estructuras y vocabulario.

- **Expresiones críticas para la traducción.**

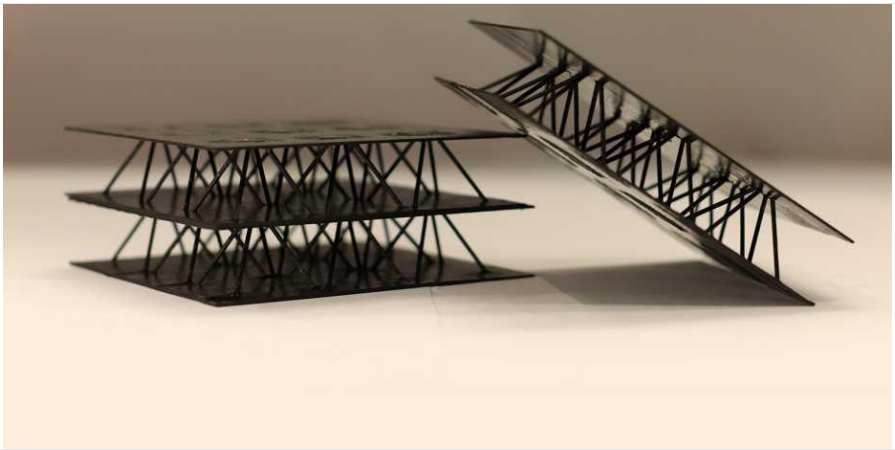
A. Traduzca las siguientes oraciones

1. These properties feature main floor amenities and apartments units on the upper floors. Similarly, other developments in this fashion can have office buildings mixed into residential areas in a “main street” configuration.
2. As a result, it was confirmed that the water treatment membrane coated with the oxidized polymer could purify phenolic contaminants through sunlight.
3. The OmniGrip robotic arm is a five-axis foldable mechanism housed within the vacuum’s compact 7.98 cm body.
4. Three cases of aircraft accidents are described that involved failure by fatigue. All of them relate to components, rather than to the main structure of the aircraft.
5. A robot will always perform a task in exactly the same way. Unlike a human, who loses concentration when faced with a boring, repetitive task and becomes sloppier as a result.
6. The new Panoramic iDrive system, powered by the BMW Operating System X, constitutes a bold new move for BMW. Any car using the system will no longer feature a traditional dash cluster.
7. The top 15 failures with the highest RPN values out of the total 65 failures are seen in Fig. 1
8. The way biological systems solve problems is pretty different from the way engineered systems solve problems.
9. Since the first planet orbiting a star other than the Sun was discovered in 1995, we have realised that planets and planetary systems are more diverse than we ever imagined.
10. Adaptive reuse is not only trendy, but it can also reduce waste by keeping buildings from being demolished. Moreover, it helps to bridge history with the future and make sure unique buildings and culturally significant spaces are carefully considered and maintained.
11. Due to a unique additive, the new concrete ConFlexPave has gained flexibility and strength that is up to 3 times higher than that of traditional concrete.
12. Nevertheless, titanium dioxide coatings are semiconductors and poor ion barriers, and thus they fail to provide long-term corrosion protection for the underlying metal substrates.
13. As a semiconductor, silicon conducts electricity better than materials such as ceramics and glass do, but not as well as metals. This in-between status makes it possible to control how electrons zip around a semiconductor.
14. Gypsum board is a panel made of gypsum plaster sandwiched between thick sheets of paper.
15. Graphene is approximately thirteen times (13x) more thermally-conductive than copper.

16. Schwartz, who chaired the jury, described the 15-Minute City concept as "a real step towards the future. (The jury for the Obel Award 2021 included landscape architect Martha Schwartz)
17. Over the course of a year, on average, there would only be interactions between one or two neutrinos out of the trillions that go through your body every second.
18. Experts explain how examples of biomimicry in architecture and engineering are fueled by the utility, efficiency, and beauty of nature.
19. Stories continue to live as long as they summon ambiguous emotions, as long as they resonate with real dilemmas and are good to think with.
20. They found that this amount could be reduced by as much as 71% if a variety of mitigation options were used around the world. (total global carbon dioxide (CO_2) emissions from the life cycle of gas-fired power is 3.6 billion tonnes each year)

B. Traduzca el siguiente texto.

Sandwich structures could deliver new materials for aerospace



Researchers at ETH Zurich in Switzerland are developing the composite materials of the future by optimising the core elements of sandwich structures.
The researchers say this will enable them to create materials that are incredibly light, robust and adaptable, and therefore ideal for aerospace applications.

More with less

Paolo Ermann, professor for Composite Materials and Adaptive Structures at ETH, says: “It is our philosophy to develop modern composite materials for adaptive systems and, while doing so, to optimise their structural efficiency – that is, obtaining the same performance with fewer resources or better functionality with the same amount of material.”
Sandwich structures typically consist of two thin, stiff cover layers and a low-density core material. “In our research, we develop high-performance sandwich composites made of carbon fibre-reinforced polymers, also known as CRP’s or simply carbon fibre. In this approach, the core consists of a truss structure of carbon fibre rods”, says Christoph Karl, a PhD student working on the project.
The mechanical properties of carbon fibre mean that these core structures can have greater stiffness and stability than conventional foam or honeycomb cores.
According to Karl, another significant advantage of the truss cores is the load-optimised design capability. He explains: “The mechanical properties of the sandwich composite depend strongly on

the core topology – in other words, on the arrangement and orientation of the rods inside the core. With the help of numerical optimisations, we can tailor the orientation of the rods to specific external loads and thus maximise the structural efficiency for a particular application."

Applications in aerospace

The core of a sandwich material constructed and optimised in this way weighs less than 30 kg per cubic metre (a cubic metre of steel weighs in at around 8,000 kg).

"This makes our materials particularly interesting for aerospace applications, where structural efficiency is of crucial importance," says Karl. "Moreover, it is possible to integrate additional features, such as vibration damping, directly into the core structure."

The team is investigating applications of the new sandwich structures through the EU project ALTAIR, led by the French aerospace lab Onera. Ermanni's research group is involved in the development of load-bearing structures of new deployment systems for small satellites.

Towards 4D printing

Spin-off company 9T Labs, co-founded by Ermanni's PhD student Martin Eichenhofer, is also developing a 3D-printing technology that can be used to produce high-quality carbon fibre components, such as the rods for sandwich structure cores.

"First and foremost, this is about expanding the range of application of such materials through novel production techniques, which will enable smaller companies to use them as well. This democratises lightweight construction technologies, as it were," says Eichenhofer.

"This procedure also opens up the possibility of integrating active elements directly into the printing process in the future, thus realising 4D-printing," Ermanni adds.

PARTE B: Clase virtual asincrónica:

Comprensión de textos: Aviso de ofrecimiento de empleo 5.

En el Aula Virtual lea el texto y realice las actividades propuestas, recuerde que dispone de un tiempo limitado para realizarlas.