CEPA MOBILITY

DELIVERING THE BEHIND THE WHEEL – BTW COURSE

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The time has come to go into how you should deliver the BTW course, which means BEHIND THE WHEEL. This is the course that CEPA Mobility has long offered to many drivers around the world.

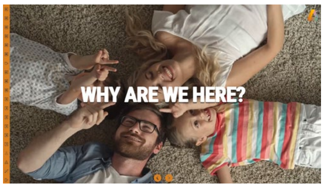
This module is an audiovisual guide where we explore slide by slide and explain what are the objectives, arguments and questions you need to ask to effectively convey the messages that the course intends to convey. It is very important to mention that in this module we will simply focus on a description of what you will have to teach, the instructional, pedagogical and andragogical elements were already reviewed in the module where we talk about CEPA's service and communication strategy, besides we count on the great support that you will offer according to your experience in the subject and in the teaching of courses related to road safety.

As you can see, this course offers a high visual quality, because it is made with Unity, a software used to make video games, so it is essential for us to make the most of the teaching resource, for this we ask that before teaching your first course practice navigation through the menu and know 100% the order of the slides and the existing tools to offer a very dynamic, interactive and above all interesting course for students.

Before starting to review each of the slides, it is very important that you know that transmitting the way a course should be taught through a video is highly complicated, so we ask you to also consult the reference and support material, which we make available in this module, which will deepen some points or concepts for you to run the course successfully, review the theoretical content and better understand this video.

This is our kick-off slide and its purpose is simply to introduce yourself and the company you are representing: CEPA Mobility. For these purposes, you can use the information where we talk about CEPA's Overview.

Offer a warm welcome to the group and create an atmosphere of trust and respect.
Make the rules of the course explicit so that the group is aware of the structure, timing and their responsibilities in relation to the course.



Through this question the instructor seeks the reflection of the participants on the different problems that exist today in terms of traffic, mobility and driving, and how these problems affect individual and collective well-being.

In this slide it is VERY IMPORTANT to make explicit the objective of the course:

To professionalize the task of driving, offering better knowledge, techniques and above all reflecting on the behaviors that the driver has in traffic.

Obviously, this slide is the link and gateway to the justification of the course, i.e.

What does the course solve?

In this set of slides, I reviewed the traffic situation as a public health problem, from the general to the particular, ie:

- Global level.
- Country level, for this the instructor should know the figures according to the country in which he/she is teaching the course.
- If there is no slide for this, verbalize the information or use a blackboard.
- Company. Before giving the course, it is important to know the accident levels of the organization to which the training is being offered.
- Personnel. Focus on the consequences at a personal level, this level is vital because we know that numbers are cold, but behind each number there is a face and a series of effects that impact people's lives.

During the justification of the training I reinforced the idea that attending the course represents part of a solution to this problem that we have been talking about, and that throughout the training we will seek to generate in the participant, the greatest space for introspection, analysis, reflection and conclusions to achieve openness and produce significant changes in their vision of traffic,

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mobility, coexistence and safety, practicing preventive behavior for their own benefit and for the benefit of others.
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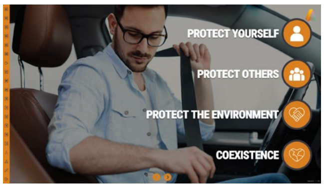

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Highlight and expose the variables that point out the act of driving as a complex activity, which requires much more than skill and dexterity, allowing to work on the Competencies that every driver must develop and master, from an integral vision.
And it is precisely from this integral vision that the course focuses the attention and work on the role of the driver as an integral figure, driver-citizen, looking for:

Self-care and care for others.
Care for the planet
Skills for coexistence

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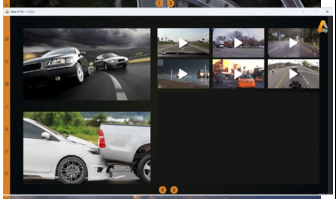
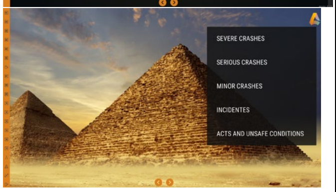

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Provide a view of the traffic accident as a process.
This process points out that accidents are usually the result of a series of factors and situations that develop over time and culminate in the final event.
Use one or two videos from the software to explain how a traffic accident originates, focusing first on risk conditions and unsafe acts as a gateway to the gestation of incidents, understood as near misses or critical situations that are very close to becoming accidents.
At the end, the participant should leave the course with a clear understanding that the course is totally focused on the importance of identifying and recognizing risk conditions, both those pre-existing before driving and those occurring during driving, in order to produce preventive mechanisms or techniques that keep the driver at the base of the pyramid, which is represented by our last slide.
On the pyramid slide, reinforce the preventive vision of training. Focus on the importance of decision making before and during driving and above all seek the awareness of the audience towards the prevention of incidents or critical situations.
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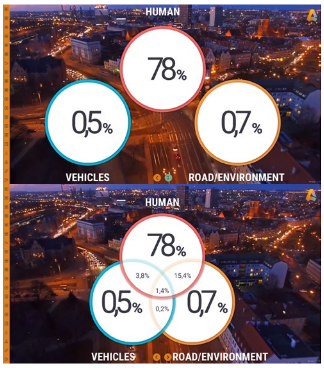
Before moving on to the next slide, ask the group:

What are the factors that make up transit?
The idea is to get the following factors as answers:
Human, Mechanical and Environment.
Now ask:

If you had to distribute 100% in relation to the influence of each factor in traffic accidents, how would you do it?

Use the whiteboard to write down the 3 factors and the percentages.

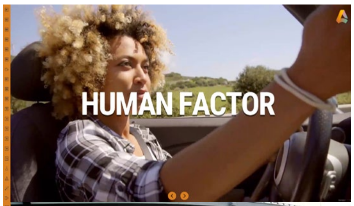
Now it is time to put up the next slide.

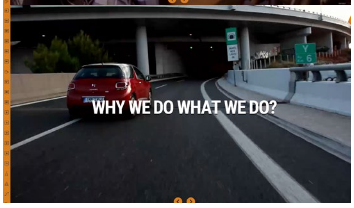


First use the spheres individually, the objective is to understand and consider the incidence of each group of factors in the occurrence of traffic accidents, and then explain that these factors CANNOT ACT INDEPENDENTLY.

Click on the graph and now project the graphs together, and discuss the multifactorial nature of the traffic accident and the interaction of all the factors.

Emphasize the importance of the human factor in the construction of the traffic accident and the importance of knowing this factor more closely, so as to introduce the next topic where it will be reviewed in depth: The Human Factor.





It's time to enter the Human Factor. Click on the image of the driver and you will be asked the following question:

Why do we do what we do?

This question is very powerful and is the starting point to talk about behavior. Obviously relate this question to driving and road safety.

Let the participants express their opinions on what they think human behavior is and the factors that condition it.

The answers will contribute to the development of the topic.

The human being as a biopsychosocial unit.

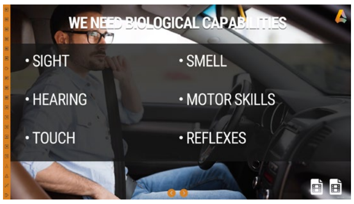
This topic aims to generate a reflection on the complexity of human behavior in general and specifically on the behavior in transit, so participants will conclude that human behavior is constructed and suffers influences from the three levels:

- Biological
- Psychological
- Social

The idea is to manifest and highlight the capabilities and skills necessary to carry out, within each sphere of behavior, conditions and circumstances that may be compromised.

The instructor should, through his arguments and examples, describe the complexity of the task of driving a vehicle. It should lead to reflection on the social role and responsibility of all those who share public spaces.

Although these three elements always operate together, i.e. as a UNIT, in this case for didactic purposes, the course will explain each one individually.



Biological aspects

These are all the motivations and factors influencing human behavior that originate in the individual's body, organs, muscles, glands and cells.

Examples of biological aspects:

Physiological needs such as hunger, sleep; or the degree of health such as physical well-being, stress and the influence of substances in the body such as alcohol or other drug.

A simple question can help relate these biological elements to road safety.

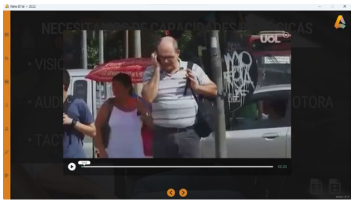
For example:

Can being hungry influence driver decisions?

Listen to people's responses and demonstrate how these biological capabilities when compromised can affect driver behavior and decisions.

This will help lead into the first video on **DISTRACTORS.**

VIDEO 1



Distractors

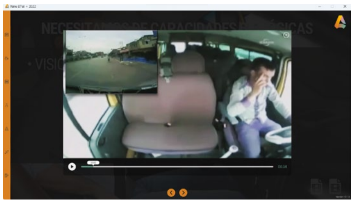
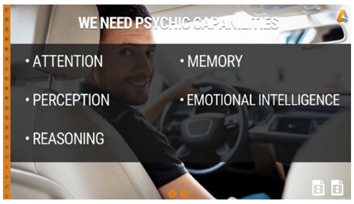
Use the cell phone video to explain the effect of distractors on the driver's biological capabilities. Also take the opportunity to elaborate on the different types of distractors:

- Visual
- Auditory
- Cognitive
- Physical

Reinforce the topic by offering an example where you combine the Distractor topic with the Speed topic with the intention that drivers can evidence the great amount of distance they travel in just a few seconds.

For example:

Carry out some exercise where you represent the different distances a vehicle can travel in a 3-second distraction, which could occur when trying to answer a message on a cell phone.

	Perform the exercise at different speeds so that people can rationalize the long distances traveled while driving completely blind.
VIDEO 2 	**Fatigue** Use the second video to discuss the topic of fatigue. As in the previous topic on distractors, explain how fatigue impacts a driver's biological capabilities. Offer specific recommendations on preventive measures to take to avoid fatigue, for example: ● Ideal sleep hours ● Circadian cycle ● Sleep cycles ● Trip planning ● Breaks during the trip
	**Psychological Aspects** These refer to the cognitive, intellectual and emotional functions that influence people's decisions. Examples of psychological aspects are: Emotions, thought processes, perception, beliefs and values. Examples of questions you can ask to trigger participation and introspection: If you have an argument with a family member, what effects might this have on your driving? Develop psychological skills. Demonstrate the importance of these skills and reflect with the group on the circumstances that may be compromised. Focus on the topics of stress, anxiety and aggression.
	VIDEO 1 Use the first video to develop possible strategies for managing stress, anxiety and aggression. Talk about emotional intelligence applied to driving.

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VIDEO 2

Use the second video to introduce the topic of alcohol and its consequences on driving ability.

Specifically talk about:

- Affects on eyesight.
- Effects on motor skills.
- Behavioral impairments.

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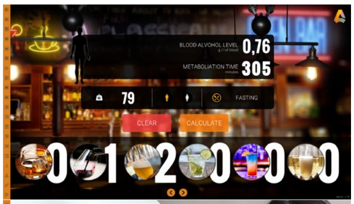
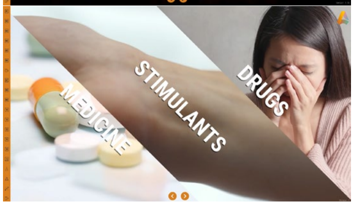
<tr><td>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Use the virtual breathalyzer to demonstrate your arguments and interact with the group, remember that this is a moment that gives dynamism to the training, take advantage of it!

Remember the importance for the driver to always **consider 0% alcohol consumption before and during driving.**

Conclude the topic by talking about the effects and impacts of self-medication and other drugs on driving.

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Social Skills

The human being is a social being by nature and therefore influences and is influenced by the groups in which he operates, directly or indirectly. That is to say that in addition to his behavior being influenced by family, work or friends, he is also influenced by a broader social context, i.e. the culture of a region, which also includes traffic.

It is precisely in this slide where you will have to demonstrate the importance of these social skills and generate reflection on traffic and citizenship.

Exemplify some situations where the relationship between these two concepts can be established. For example:

- Yielding the right of way to a pedestrian.
- Facilitating another driver's maneuver.
- Respecting the distance to a cyclist.

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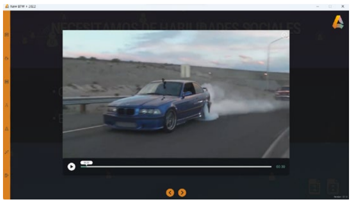
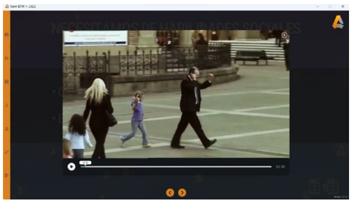


VIDEO 1

Use the video to explain how socio-cultural aspects affect or impact drivers' behaviors and decision-making.

For example, talk about the meaning that is socially attributed to speed, i.e. how there is an idea that whoever drives faster drives better, or in some cultures speed may be associated with greater masculinity, or talk about how the mass media through movies or television programs may offer a conception of speed that is not necessarily one of safety, but of competition or aggressiveness.

Talk about how this can influence drivers and accident rates.



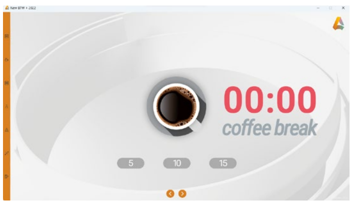
VIDEO 2

This video closes the first part of the course, so after screening it, you need to make a solid and affective argument that contributes to close this stage.

The idea is that people have a moment of introspection where the group of drivers reflect on the impact of their actions on society.

What kind of drivers-citizens are we being? What am I transmitting to my family and my environment?

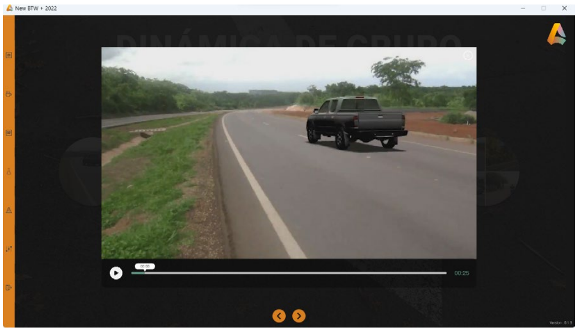
Reinforce the idea that the road is a shared space, where every action, every decision of a driver or road user can affect the rest.

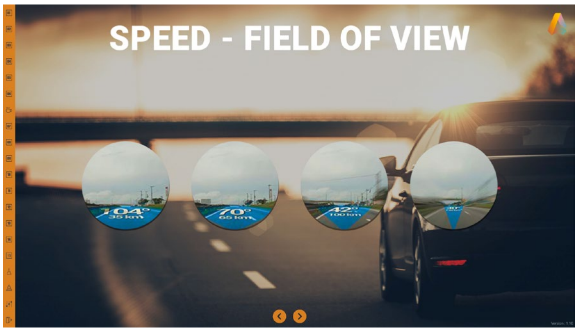


Offer a break time according to their progress in the course.

As you could observe, in all this first part of the course we have not yet touched on specific preventive driving techniques, but rather everything has revolved around the behavioral and psycho-physical elements related to road safety, which is necessary because as we all know traffic accidents are strongly linked to the behaviors and decisions taken on the road.

Next we will review the second part of the course, where we will talk about some of the main risks in traffic and the preventive techniques to be applied to anticipate them:

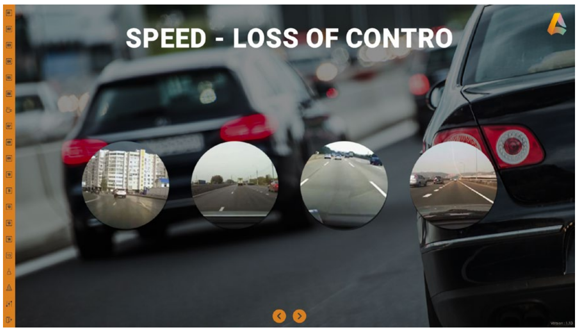
	To address the topics of this second part of the course, some of the reconstructions of traffic accidents that CEPA Mobility's Accident Investigation Department has carried out will be used. This will help to give a good level of dynamism to the course and will motivate the participation of the group. Let's start with the first video.
	**Reconstruction Number 1** Allow people to participate in the analysis of the video, offering their opinions as to what could have caused the accident. You moderate the comments and write down their arguments in a way that leads the group to analyze the central theme:
	**Speed as a Determining Factor** In this case use any of the videos to explain a fundamental element: Speed as a decisive factor in the consequence of the traffic accident. That is to say, the higher the speed: 1. It facilitates the occurrence of the accident. **2. The consequences will be greater.** **It is not necessary to reproduce the two videos, since both lead to the same conclusion**. Advise drivers that one of the fundamental elements to improve or make driving safer is the adequacy of speed.



SPEED AND FIELD OF VISION

Expose the effects that the physical phenomenon of speed has on the driver's perception capacity.

Explore some of the videos which seek to convey this loss in the capacity of perception when the vehicle moves at different speeds.

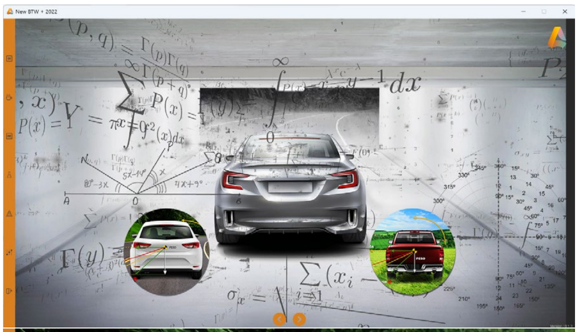


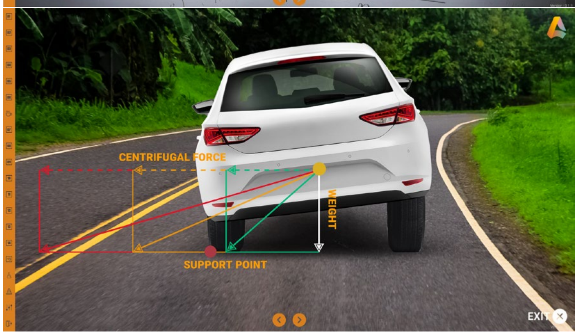
SPEED AND LOSS OF CONTROL

Reflect with participants on the impact of speed and vehicle control.

Discuss the limitations that any vehicle and driver have when faced with the physical phenomenon of speed.

Play several of the videos, in which speed is the common denominator that causes the accident.





INFLUENCE OF SPEED IN TURNS AND CURVES

Lead drivers to reflect on how inadequate speeds affect the stability of the vehicle during a curve or turn due to centrifugal force, weight transfer and the possibility of loss of adhesion.

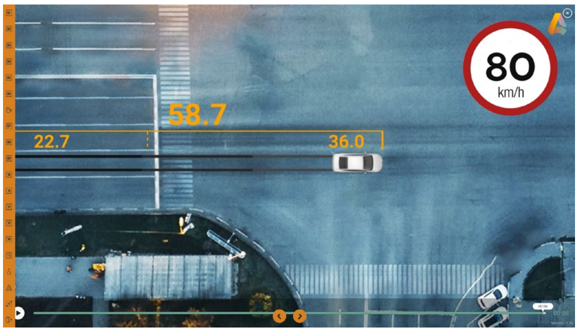
In the software select the type of vehicle depending on the type of cars used by the group you are teaching the course to.

Click several times on the screen on the vehicle for the animation to proceed.

Total Stopping Distance

The Total Stopping Distance, a more than fundamental concept of road safety.

Explain this concept in detail with the help of existing animations.



Remember that the objective of this concept is not only for drivers to understand what perception-reaction time and braking distance are, but above all for them to reflect on how difficult it is to stop a vehicle:

How difficult it is to stop a vehicle and therefore apply a preventive driving model based on:

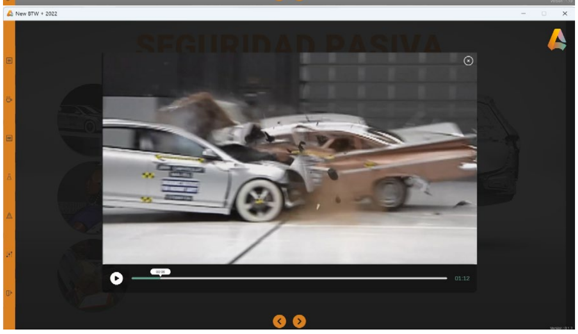
Observation - Identification and Anticipation.

Speed Vs Effectiveness of Passive Safety Systems.

Use one of the videos to explain that the higher the speed driven during the accident, the less effective the passive safety systems will be.

Discuss the great capacity to do harm to oneself and others when driving a vehicle.

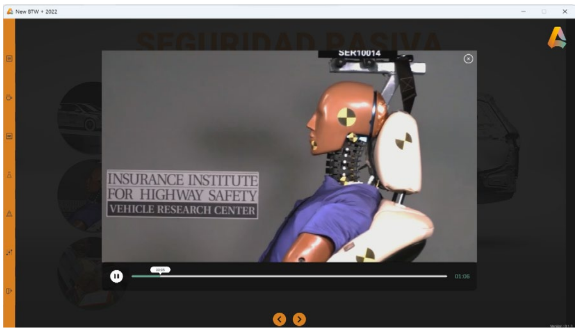
Discuss the fragility of the human body and how we are not biologically built to withstand the decelerations that occur in accidents.



Now explore together with the group the different passive safety systems that exist and take advantage of the videos to explain each of them in more depth.

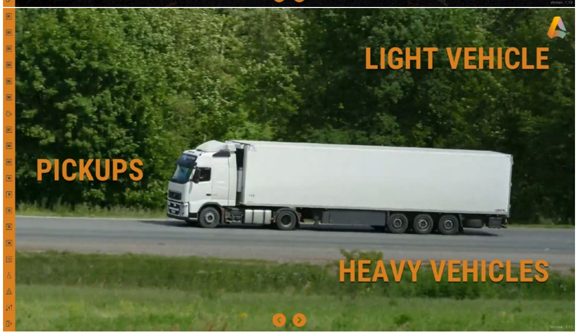
Pay special attention to the correct way to use restraint systems such as seat belts.

Offer tips related to the posture in front of the steering wheel and pedal board, as well as the correct way to hold and turn the steering wheel to avoid injuries in case the airbag comes out.



To close the topic of speed as a risk factor, make a synthesis and summary of all those elements where speed has an impact:

1. Facilitates loss of control of the vehicle.
2. Increases the consequences of the accident
3. Increases centrifugal force
4. Decreases perception capacity
5. Increases the distance traveled during the perception-reaction time.
6. Increases braking distance
7. Decreases the effectiveness of passive safety systems.



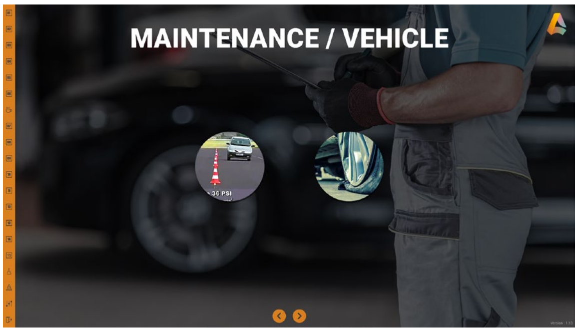
Pre-checks

In this second accident reconstruction you will need to address the issue of vehicle pre-checks.

I posed a model based on:

1. 360 degree turn
2. Engine compartment
3. Cabin and dashboard.

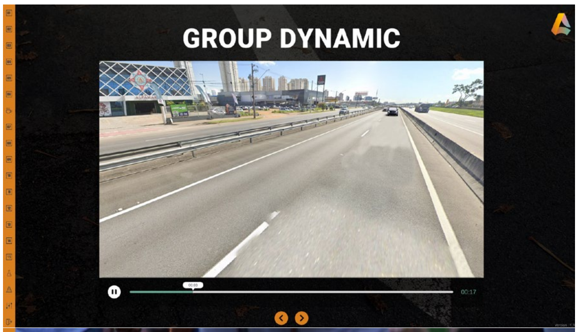
It is important to mention that the course does not specialize in automotive maintenance, but the idea of this topic is to reflect on the importance of the driver in the verification of the physical and mechanical conditions of the car, since it is a very relevant element for his safety and that of all the people who live with him inside or outside the vehicle.

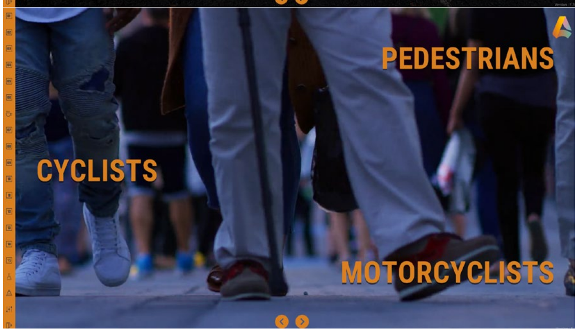


Emphasize preventive measures in relation to tire maintenance.

Explore with the group concepts such as wear and pressure.

Make recommendations to the group to offer tips that will help them in their daily lives.





A relevant topic today is that of vulnerable road users, especially when almost half of those killed in traffic accidents are pedestrians, cyclists and motorcyclists.

As in the two previous accident reconstructions, use the video to listen to the participation of drivers and offer preventive techniques that will help to anticipate accidents with these users.

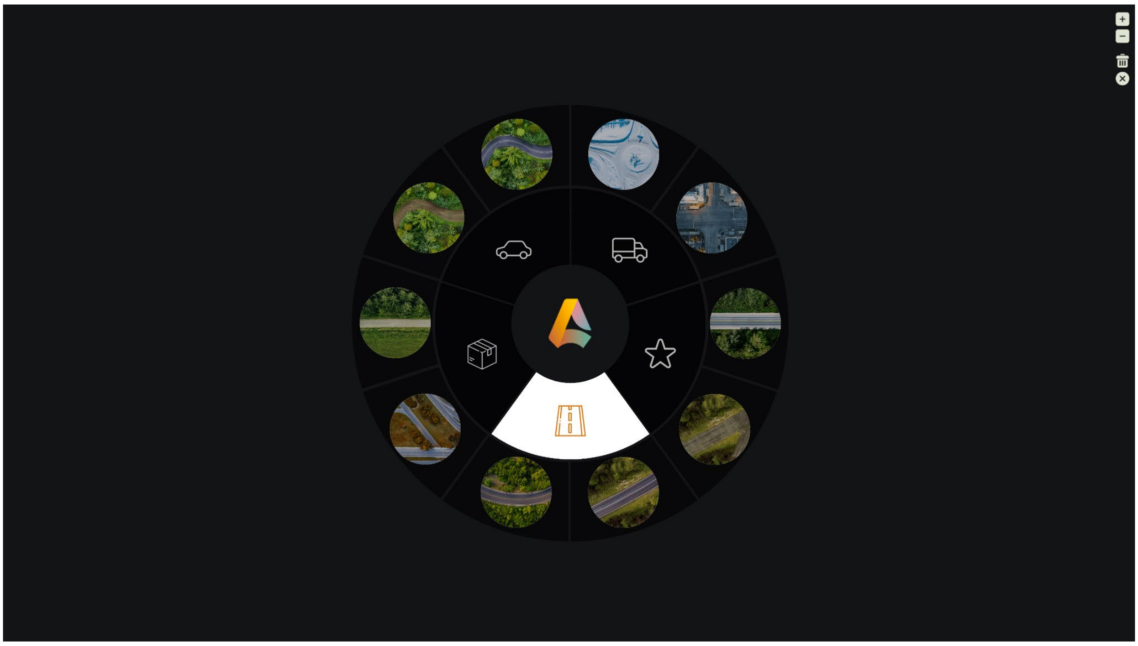
To develop this topic, we recommend that you use the workshop or laboratory to simulate some specific situations with pedestrians, cyclists and motorcyclists.

Below we explain how to open and use the workshop:

1. Go to the menu on the side of the software and click on the icon marked below:

2. Once inside the workshop, the black screen with the CEPA Mobility logo will be displayed, now simply press the space bar on your keyboard:

3. Use the mouse to select the different types of roads, vehicles, and any other resource offered by this workshop.
4.



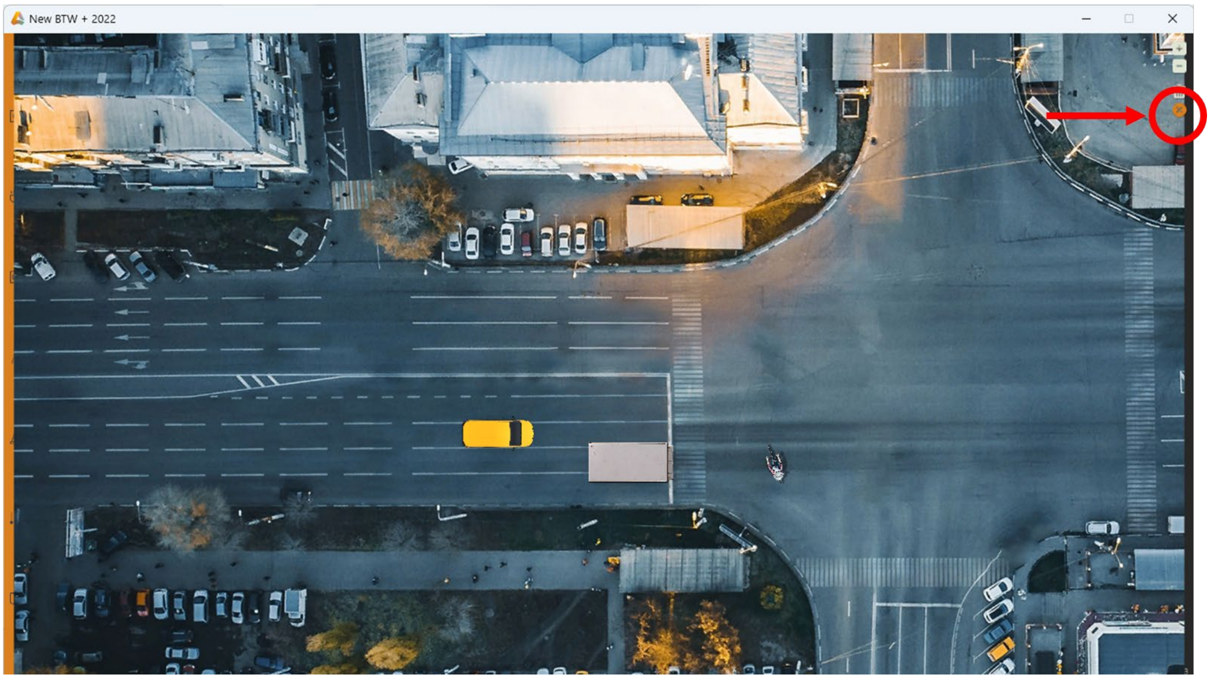
5. For this Vulnerable Users topic, use the resources to simulate the risk conditions that best represent your city, country or region.

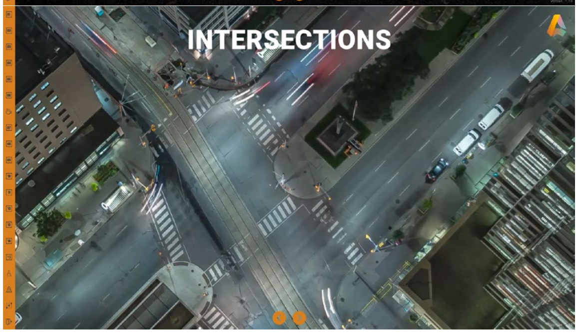
Some concepts to work on in this topic:

Types of pedestrians:

- Characteristics of children, older adults, and pedestrians not driving a vehicle.
- Blind areas
- Bicycle lanes.

6. To close the workshop simply click on the cross below:





Intersections as a point of conflict.

This is the last topic of the course, so you will need to develop the topic of how to drive preventively regulated and unregulated intersections, as well as preventive mechanisms

Talk about:

- Wide-angle approach and vision.
- Identification of the type of regulated or unregulated intersection.
- Adequacy of speed.
- Application of the technique: Foot on the brake.
- Progressive and early stopping.
- Crossing
- Turns.

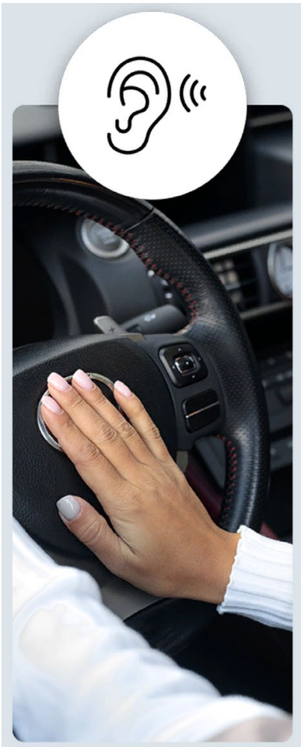
Through this slide the instructor will develop the Ecodriving topic,

The objective of this topic is to transmit that as drivers and inhabitants of this planet it is our responsibility to be aware of the polluting emissions that arise from the automobile, therefore during the development of this topic we seek to offer recommendations that help to generate changes in our way of driving in a way that promotes a lower impact on the environment.

Images appear on the screen that seek to represent the benefits that can be obtained by applying ECODRIVING techniques, for example:

Vehicles produce harmful particles that generate toxic emissions and pollutants, these remain suspended in our atmosphere affecting the quality of the air we breathe leading to numerous respiratory diseases and certain types of cancer.

Therefore, making use of Ecodriving will benefit in a lower production of polluting gasses.

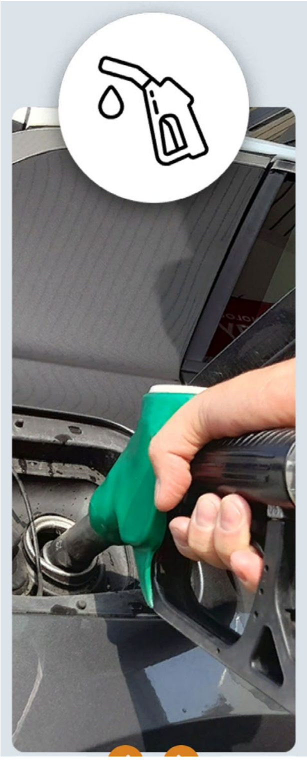
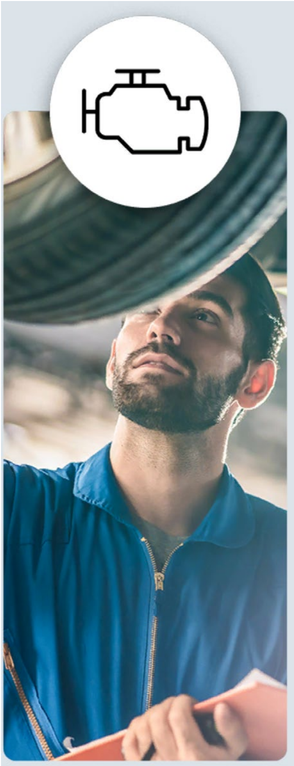


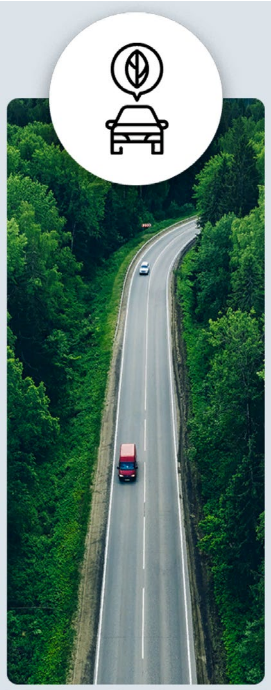
Noise in vehicles is produced by the engine and the friction caused by the contact of the vehicle with the ground and the air; or even by the use of the horn.

Excessive and constant noise, beyond the logical negative effects on hearing, can cause other problems in human health, such as:

A. Episodes of stress, fatigue, depression, anxiety or hysteria in both humans and animals.
B. Noise above 45 decibels prevents from falling asleep or sleeping properly, which can influence behavior causing episodes of aggressiveness or irritability.

Undoubtedly, the practice of eco-driving contributes to the reduction of noise produced by vehicles.

	Reduced fuel consumption. Some studies show that the practice of eco-driving can help drivers save between 10 and 25% of their regular fuel costs.
	Another benefit, without a doubt, is the reduction of tire, brake and engine wear.



And of course, applying economical and ecological driving techniques will also result in a reduction of the risk exposure in road accidents, even achieving a more comfortable and safe driving, by using with sensitivity the commands such as the accelerator, gearbox and brake.

After describing the benefits that result from the application of Ecodriving, you as the instructor will develop and explain some of the main techniques.

So then the course will develop nine specific techniques, in the first slide you will be able to observe the first four. Explain each of them.

Of course, the first recommendation to be made is to use the vehicle as little as possible, preferring more environmentally friendly means of transportation.

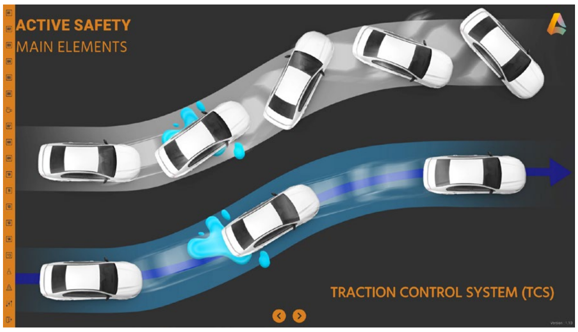
Recommend to the course participants not to press the accelerator when the engine is started. It is enough to turn the key or press the ignition button. Explain that once the engine is started, the vehicle should be placed in gear.

Explain the importance of avoiding overheating the engine. And comment that an engine running and not moving will increase fuel consumption.

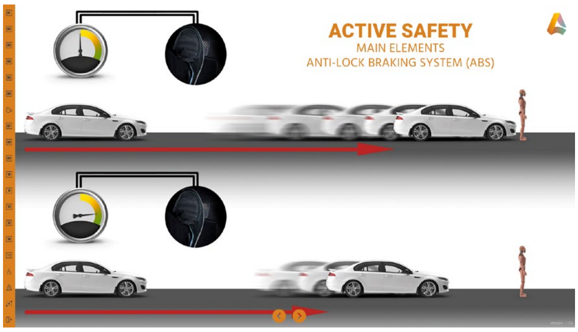
	As an example, in neutral/neutral, a car consumes approximately 0.5 liters per hour. Develop the topic looking for the drivers to keep the Engine Revolutions per Minute low. Motivate them to drive, if possible, in high gears: fourth, fifth, sixth, but at low revolutions, between one thousand and two thousand five hundred revolutions per minute. Explain the importance of maintaining a continuous and constant speed. And emphasize the fact that driving in high gears does not mean to exceed speeds, but to manage the engine power properly. Invite the driver to get to know his vehicle and use the technology related to Eco-Driving, such as: Cruise Control, Start Stop System, Economic Driving System, among others.
	Continuing with the Ecodriving techniques, we will explain 5 more techniques. Promote the execution of progressive acceleration and braking, avoiding abrupt actions. Discuss with the group that, as an example, when the driver accelerates on the straights and brakes hard when approaching traffic lights or intersections, what happens is that kinetic energy is wasted, consuming more fuel and causing the brakes to do unnecessary work and wear out. Rough or aggressive driving can increase fuel consumption by up to 40%. Explain how useful it is for the driver to make a wide-ranging observation so that he can

	anticipate situations, and seek to make the most of the vehicle's momentum. Establish as necessary, the moderate use of air conditioning and with criterion. Guide the development of the subject according to the following criteria: If driving below 60 kilometers per hour or 40 miles per hour and the external climate allows it, avoiding the use of air conditioning could be a good idea. Obviously this will depend a lot on both external weather or even personal safety, so we appeal to your knowledge as an instructor about the city, country or region where you are teaching this course. Above 60 kilometers per hour or 40 miles per hour it is not advisable to keep the windows of your vehicle open. Recommend drivers to check and control the air pressure of the tires or rims on a weekly basis, because an inadequate pressure will have an impact not only on safety, but also on fuel consumption and of course on the impact on the environment. Finally, talk to the group about how useful it is for ecodriving to avoid overloading the vehicle, since the resistance to movement is determined by the weight of the car and the tire pressure. Advise the drivers to distribute the load well.
	To develop this new topic: Active Safety, the instructor will have two slides at his disposal. In the first one, the instructor will develop the most common Active Safety Systems, and in the second one, he will explain some of the newest systems that, although several vehicle manufacturers already incorporate them in some of their models, it is possible that the participants' vehicles do not have these systems. For this, it is essential that you

	previously know the types of vehicles that the drivers you are training have. For a correct development of this topic it is FUNDAMENTAL that you as instructor make the participants see that these active safety systems are in the end an auxiliary of the drivers, but that the prevention falls entirely on the driver, even lead the group to reflect on the following idea: The main element of active safety is the driver!!! Once this is understood, the instructor will start with the explanation of the functioning of each of the systems. If you do not have enough time, select some of the systems and explain them, the idea is to motivate people to recognize them and know that these systems will help you in critical situations, which must be avoided at all costs through the elements of preventive driving seen throughout the course.
	Anti-lock braking system (ABS): Prevents the tires from locking during hard braking, allowing the driver to maintain mainly maneuverability (steering).
	Stability control (ESP): Constantly monitors the vehicle's trajectory and helps correct skidding or sliding by applying the brakes on the necessary wheels individually while adjusting engine power.

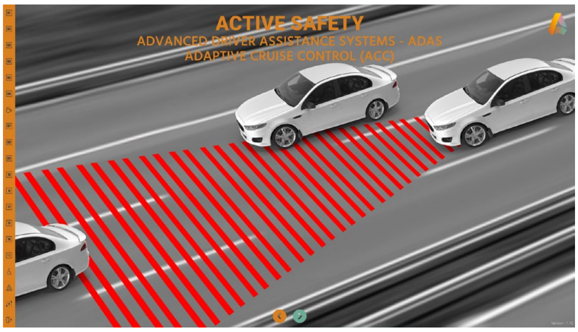


Traction Control (TCS): Prevents wheel slippage during excessive acceleration, improving traction and vehicle control, especially on low-grip surfaces.

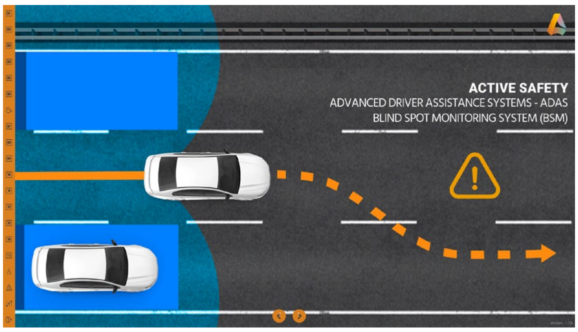


Emergency Brake Assist (EBA or BAS): Provides increased braking pressure in sudden braking situations to reduce stopping distance. Supports the driver in the braking technique with power.

Lane Departure Warning System (LDW): Detects lane lines and warns the driver if he unintentionally deviates from his lane, helping him to stay on the correct path.



Adaptive Cruise Control (ACC): Maintains a constant speed and a safe distance from the vehicle in front (Following Distance), automatically adjusting speed and braking according to traffic conditions.



Blind Spot Monitoring System (BSM): Detects the presence of vehicles in blind spots and alerts the driver with visual or audible signals to avoid collisions when changing lanes.

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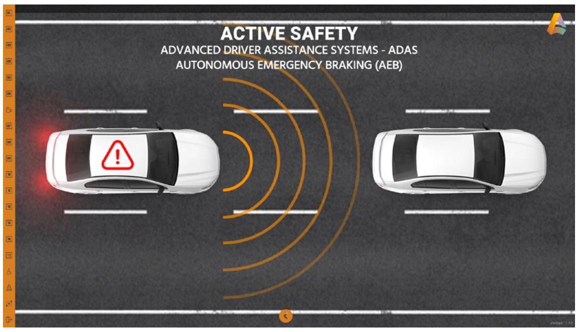
<td>
</td>
<td>Autonomous Emergency Braking (AEB): Detects obstacles or stopped vehicles and automatically activates the brakes to avoid a collision or reduce its severity.</td>
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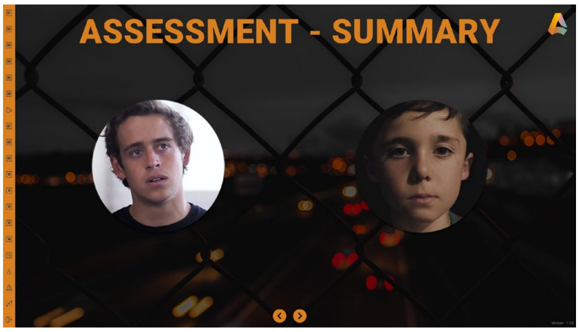
<td>
</td>
<td>It is time to conclude the course, so it is critical that you offer a thank you to the group for their time and attention to the training and make a powerful argument to close your training.

Reinforce the importance of the training to people's daily lives. Focus on the ultimate goal of the course: That people get home safely.

Use one of the available videos to close.</td>
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Remember to consult the support materials that we have made available in this module, this is necessary to deepen the information to be transmitted in the different topics.

As you could observe, this audiovisual guide is intended to guide you in the way the BTW course should be taught, however, we appeal to all your experience and knowledge in Road Safety, so that you can favorably guide drivers in the construction of significant learning that will really help them to produce changes in their habits and behaviors while driving.

After the theoretical course BTW, there is a practical training for each of the drivers, in following modules we will talk about this training, in the meantime we want to thank you very much for your time and attention in watching and listening to this video that we have made with great care for you to have the greatest success in your work as an instructor representing CEPA Mobility.

Until the next module!!!