Collection of First-order logic rule formalization of traffic rule. Exampleindicates rule and output indicates its first-order formal output.

Example*: You MUST stop behind the line at a junction with a 'Stop' sign and a solid white line across the road. Wait for a safe gap in the traffic before you move off.*
Output*:* $\exists X\ isJunction(X) \wedge stopSign(X) \rightarrow stop(driver)$

Example*: Give way to anyone still crossing after the signal for vehicles has changed to green. This advice applies to all crossings.*
Output*:* $trafficLight(X, green) \wedge on(X, pedestrian) \rightarrow stop(driver)$

Example*: In slow-moving and queuing traffic you should keep crossings completely clear, as blocking these makes it difficult and dangerous for pedestrians to cross. You should not enter a pedestrian crossing if you are unable to completely clear the crossing. Nor should you block advanced stop lines for cycles.*
Output*:* $isCrossing(X) \wedge slowTraffic(X) \wedge cantCross(X, driver) \rightarrow \neg driveTo(X, driver)$

Example*: Before moving off you should -use all mirrors to check the road is clear -look round to check the blind spots (the areas you are unable to see in the mirrors) -signal if necessary before moving out -look around for a final check.*
Output*:* $\forall Z\ roadSegment(X, Z, W) \wedge free(W) \wedge signal(driver) \rightarrow startDriving(driver)$

Example*: The approach to a junction may have a 'Give Way' sign or a triangle marked on the road. You MUST give way to traffic on the main road when emerging from a junction with broken white lines across the road.*
Output*:* $isJunction(X) \wedge on(X, driver) \wedge (\ giveWaySign(X) \vee triangleOn(X)\ ) \rightarrow \neg\ rightOfWay(driver)$

Example*: Before moving off you should -use all mirrors to check the road is clear -look round to check the blind spots (the areas you are unable to see in the mirrors) -signal if necessary before moving out -look around for a final check.*
Output*:* $\forall Z\ roadSegment(X, Z, W) \wedge free(W) \wedge signal(driver) \rightarrow startDriving(driver)$

Example*: Before overtaking you should make sure -the road is sufficiently clear ahead -road users are not beginning to overtake you -there is a suitable gap in front of the road user you plan to overtake.*
Output*:* $\exists Z\ \forall X\ \forall Y\ \neg\ obstacles(X) \wedge \neg\ overtake(Y, driver) \wedge (roadSegment(X, Z, gap) \wedge gap > 50m\ ) \wedge \neg\ overtake(Y, Z) \rightarrow overtake(driver, Z)$

Example*: All passengers are required to fasten their seatbelts.*

Output*:* $\exists X \exists Y\ passenger(X) \wedge seatbelt(Y) \rightarrow fasten(X, Y)$

Example*: You MUST stop behind the line at a junction with a 'Stop' sign and a solid white line across the road. Wait for a safe gap in the traffic before you move off.*
Output*:* $\exists X\ isJunction(X) \wedge stopSign(X) \rightarrow stop(driver)$

Example*: Give way to anyone still crossing after the signal for vehicles has changed to green. This advice applies to all crossings.*
Output*:* $trafficLight(X, green) \wedge on(X, pedestrian) \rightarrow stop(driver)$

Example*: In slow-moving and queuing traffic you should keep crossings completely clear, as blocking these makes it difficult and dangerous for pedestrians to cross. You should not enter a pedestrian crossing if you are unable to completely clear the crossing. Nor should you block advanced stop lines for cycles.*
Output*:* $isCrossing(X) \wedge slowTraffic(X) \wedge cantCross(X, driver) \rightarrow \neg driveTo(X, driver)$

Example*: Before moving off you should -use all mirrors to check the road is clear -look round to check the blind spots (the areas you are unable to see in the mirrors) -signal if necessary before moving out -look around for a final check.*
Output*:* $\forall Z\ roadSegment(X, Z, W) \wedge free(W) \wedge signal(driver) \rightarrow startDriving(driver)$

Example*: The approach to a junction may have a 'Give Way' sign or a triangle marked on the road. You MUST give way to traffic on the main road when emerging from a junction with broken white lines across the road.*

***Output**: isJunction*$(X) \wedge$ *on*$(X , driver) \wedge ($ *giveWaySign*$(X) \vee$ *triangleOn*$(X)) \rightarrow \neg$ *rightOfWay*$(driver)$
***Example**: Before moving off you should -use all mirrors to check the road is clear -look round to check the blind spots (the areas you are unable to see in the mirrors) -signal if necessary before moving out -look around for a final check.*
***Output**:* $\forall Z$ *roadSegment*$(X , Z , W) \wedge$ *free*$(W) \wedge$ *signal*$(driver) \rightarrow$ *startDriving*$(driver)$

***Example**: All passengers are required to fasten their seatbelts.*
***Output**:* $\exists X \exists Y$ *passenger*$(X) \wedge$ *seatbelt*$(Y) \rightarrow$ *fasten*(X , Y)