INSTRUCTIONS:
Fill out the hazard analysis and risk assessment below.
HA-001 should be for the lane departure warning function as discussed in the lecture.
HA-002 should be for the lane keeping assistance function as discussed in the lecture.
Then come up with your own situations and hazards for the lane assistance system. Fill in the HA-003 and HA-004 rows.
When finished, export your spreadsheet as a pdf file so that a reviewer can easily see your work.

Hazard ID	Situational Analysis							Hazard Identification						Hazardous Event Classification						Determination of ASIL and Safety Goals	
	Operational Mode	Operational Scenario	Environmental Details	Situation Details	Other Details (optional)	Item Usage (function)	Situation Description	Function	Deviation	Deviation Details	Hazardous Event (resulting effect)	Event Details	Hazardous Event Description	Exposure (of situation)	Rationale (for exposure)	Severity (of potential harm)	Rationale (for severity)	Controllability (of hazardous event)	Rationale (for controllability)	ASIL Determination	Safety Goal
HA-001	Normal Driving	Highway	Rain (slippery road)	High speed		Correctly used	Normal driving on a highway during rain (slippery road) with high speed and correctly used system	Lane Departure Warning (LDW) function shall apply an oscillating steering torque to provide the driver with haptic feedback	Actor effect is too much	The LDW function applies an oscillating torque with very high torque (above limit).	Collision with other vehicle	High haptic feedback can affect driver's ability to steer as intended. The driver could lose control of the vehicle and collide with another vehicle or with road infrastructure.	The LDW function applies too high an oscillating torque to the steering wheel (above limit)	E3	Driving on a wet road on a highway is possible to happen for more than once a month for an average driver	S3	The situation assumes the driver is driving at high speed.	C3	The driver will find it difficult to control or find it uncontrollable if the steering wheel starts vibrating excessively	ASIL C	The oscillating steering torque from the lane departure warning function shall be limited.
HA-002	Normal Driving	Country Road	Normal conditions	High speed		Incorrectly Used	Normal driving on country roads during normal conditions with high speed	Lane Keeping Assistance (LKA) function shall apply the steering torque when active in order to stay in ego lane	Function always activated	The LKA function will always be activated, increasing the risk of the driver incorrectly treating the vehicle as fully autonomous.	Collision with other vehicle	The driver is relying on the Lane Keeping Assistance function only to keep the car in the correct lane, and does not observe other traffic, which can result in the vehicle colliding with another vehicle	The LKA function is always activated and the driver treats the vehicle as it were autonomous	E4	Driving on normal conditions on a country road occurs almost every driver on average.	S3	The situation assumes the driver is driving at high speed.	C3	Because the hands are not on the wheel, and the vehicle is driving at high speed, the accident will not be controllable	ASIL D	The lane keeping assistance function shall be time limited and the additional steering torque shall end after a given time interval so that the driver cannot misuse the system for autonomous driving.
HA-003	Towing(passive)	Country Road	Normal conditions	Low speed		Correctly used	Car being towed by another car on a country road with normal driving conditions at low speed	Lane Keeping Assistance (LKA) function shall apply the steering torque when active in order to stay in ego lane	Function always activated	The LKA function will always be activated, increasing the risk of the vehicle resisting being towed	Collision with other vehicle	The Lane Keeping Assistance function interferes with the car it is being towed by, which can result in the vehicle or the towing vehicle colliding with another vehicle	The LKA function is always activated and interfers with the lane changes of the car it is being towed by.	E1	Being towed is usually rare	S1	The situation assumes the driver is driving at low speed.	C2	Because the hands are on the wheel, and the vehicle is driving at low speed, the accident will be controllable	ASIL QM	The lane keeping assistance function shall be time limited and the additional steering torque shall end after a given time interval so that the car is controllable.
HA-004	Backward Driving	City Road	Fog(degraded view)	Low Speed		Correctly used	Driving in reverse on a city road during fog with low speed and correctly used system	Lane Keeping Assistance (LKA) function shall apply the steering torque when active in order to stay in ego lane	Function unexpectedly activated	The LKA function is unexpectedly activated, thereby activing against the driver's attempt to reverse park the vehicle.	Rear collision with trailing traffic	The Lane Keeping Assistance function interferes with the drivers attempt to reverse the vehicle, which can result in the vehicle colliding with another vehicle	The LKA function is unexpectedly activated and interfers with the lane changes carried out by the driver.	E4	Reversing on a city road at low speed is a common situation	S1	The situation assumes the driver is driving at low speed.	C2	Because the hands are on the wheel, and the vehicle is driving at low speed, the driver will be able to override the LKA and the accident will be controllable	ASIL QM	The lane keeping assistance function shall be time limited and the additional steering torque shall end after a given time interval so that the car is controllable.