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	OM03 - Normal Driving	OS04 - Highway	EN06 - Rain (slippery road)	SD02 - High speed		IU01 - 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	DV04 - Actor effect is too much	The Lane Departure Warning function applies an oscillating torque with very high torque (above limit.)	EV00 - Collition with other vehicle.	High haptic feedback can affect driver's ability to steer as intented. The driver loose control and could collide with another vehicle or side of the road.	The Lane Departure Warning function applies an oscillating torque with very high torque (above limit.)	E3 - Medium probability	Driving on a highway with rain could happen between 1% and 10% of the time operating the vehicle.	S3 - Life-threatening or fatal injuries	Colitions at high speed could cause fatal injuries.	C3 - Difficult to control or uncontrollable	It is difficult to stay calm and react properly when the steering well is moving too much.	C	The oscillating steering torque from the Lane Departure Warning function shall be limited.
HA-002	OM03 - Normal Driving	OS03 - Country Road	EN01 - Normal conditions	SD02 - High speed		IU02 - Incorrectly used	Normal driving on a country road during normal conditions with high speed and incorrectly used sysatm.	Lane Keeping Assistance (LKA) function shall apply the steering torque when active in order to stay in ego lane	DV03 - Function is always activated	Lane Keeping function is always activated	EV00 - Collition with other vehicle.	Driver use the function as if the car was a self-driving car and loose driving attention.	The driver do not use the function properly.	E2 - Low probability	The corvialation beween driving at a country road and misuing system should not happen oftern. Less than 1% of the time operating the vehicle.	S3 - Life-threatening or fatal injuries	Colitions at high speed could cause fatal injuries.	C3 - Difficult to control or uncontrollable	When the driver loose focus on driving, it is difficult to re-focus in the case of imminent colition.	B	The Lane Keeping Assistance function shall be time limited, and additional steering torque shall end after a given time interval so the driver cannot misuse the system for autonomous driving.
HA-003	OM03 - Normal Driving	OS03 - Country Road	EN01 - Normal conditions	SD01 - Low speed		IU01 - Correctly used	Normal driving on country road during normal conditions with low speed and correctly used system	Lane Departure Warning (LDW) function shall apply an oscillating steering torque to provide the	DV19 - Sensor detection is wrong	Torque is applied suddenly	EV04 - Car comes off the road	Driver overturns steering wheel leading the vehicle to go out of control	Vehicle moves out of the road and its tyres get stucked in mud.	E2 - Low probab	This shouldnot happen too often with most drivers. More common with beginner level and unexperienced drivers.	S1 - Light and moderate	On a country road driving at a low speed with relatively less traffic, the impact of this will be quite low..	C2 - Normally controllable	Normally a driver can take control.	QM	A sudden strong torque shall be avoided
HA-003	OM03 - Normal Driving	OS04 - Highway	EN03 - Fog (degraded view)	SD02 - High speed		IU01 - Correctly used	Normal driving on highway during foggy weather with high-speed and correctly used system	Lane Keeping Assistance (LKA) function shall apply the steering torque when active in order to stay in ego lane	DV13 - Sensor sensitivity is too low	Road lane cannot be detected due to fog	EN03 - Front collision	Due to wrong detection on a curvy road in a foggy weather the vehicle cannot follow the road lane.	car moves out of the lane and crashes into an oncoming vehicle.	E4 – High probability	Happens quite often in foggy weather conditions on highways.	S3 - Life-threatening or fatal injuries	On highways with high speed, the impact of the crash is huge	C3 - Difficult to control or uncontrollable	Difficult to avoid collision when the visibility due to fog is too low.	D	The lane detection should be disabled if the detection for a certain environment is not reliable