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 (Included)	Situation Description	Function	Deviation	Deviation Details	Hazardous Event (including actor)	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	OMS3 - Normal Driving	OS02 - Highway	ON06 - Rain (slippery road)	OD03 - High speed		UD1 - Correctly used	Normal driving on 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	DV01 - Actor effect is too much	Lane Departure Warning (LDW) function applies an oscillating steering torque with very high torque (above limit)	HV03 - 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 collid with another vehicle or with road infrastructure	Lane Departure Warning (LDW) function applies too high an oscillating steering torque to the steering wheel (above limit)	E2 - Medium probability	Driving on highway with Rain (slippery road), could occurer 1 % to 10 % of average operating time	S3 - Life-threatening or fatal injuries	On driving on highway, speed is expected to be high and collision on high way may cause life-threatening or fatal injuries	C3 - Difficult to control or uncontrollable	High haptic feedback can affect driver's ability to steer as intended. Most drivers would have difficult controlling the vehicle	C	Lane Departure Warning (LDW) function shall apply a limited, oscillating steering torque to provide the driver with haptic feedback
HA-002	OMS3 - Normal Driving	OS02 - Country Road	ON01 - Normal conditions	OD03 - High speed		UD1 - Incorrectly used (the driver is misusing the lane keeping assistence function as an autonomous function)	Normal driving on country road during normal conditions with high speed and incorrectly used system	Lane Keeping Assistance (LKA) function shall apply the steering torque when active in order to stay in ego lane	DV03 - Function always activated	Lane Keeping Assistance (LKA) function is always activated	HV09 - Collision with other vehicle	The driver is misusing the lane keeping assistence function as an autonomous function and loose attention to the road	Lane Keeping Assistance (LKA) function is always activated, and the driver treats the function as if it were meant for fully autonomous driving	E2 - Low probability	Driving on country road with normal condition, could occurer 1 % to 10 % of average operating time	S3 - Life-threatening or fatal injuries	On driving on highway, speed is expected to be high and collision on high way may cause life-threatening or fatal injuries	C3 - Difficult to control or uncontrollable	The driver could misuse the Lane Keeping Assistance (LKA) function by taking both hands off the wheel at high speed, then the vehicle would not be controllable	B	The Lane Keeping Assistance (LKA) function shall be time limited and the additional steering torque shall only be applied after a given time interval so that the driver can not misuse the system for autonomous driving
HA-003	OMS3 - Normal Driving	OS02 - Highway	ON01 - Normal conditions	OD03 - High speed		UD1 - Correctly used	Normal driving on highway during normal conditions 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	DV01 - Actor effect is too much	Lane Keeping Assistance (LKA) function applies a steering torque with very high torque (above limit)	HV03 - Car spins out of control	The too much steering torque can affect driver's ability to steer as intended. The vehicle could spin out of control and collid with another vehicle or with road infrastructure	Lane Keeping Assistance (LKA) function applies too high steering torque to the steering wheel (above limit)	E2 - Medium probability	Driving on highway with normal condition, could occurer 1 % to 10 % of average operating time	S3 - Life-threatening or fatal injuries	On driving on highway, speed is expected to be high and collision on high way may cause life-threatening or fatal injuries	C3 - Difficult to control or uncontrollable	The too much steering torque can affect driver's ability to steer as intended. Most drivers would have difficult controlling the vehicle	C	Lane Keeping Assistance (LKA) function shall apply a limited steering torque when active in order to stay in ego lane
HA-004	OMS3 - Normal Driving	OS03 - Highway	ON01 - Normal conditions	OD03 - High speed		UD1 - Correctly used	Normal driving on highway during normal conditions 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	DV10 - Actor effect is reverse	Lane Keeping Assistance (LKA) function applies the steering torque in the reverse direction when active	SV04 - Car comes off the road	The reverse steering torque can affect driver's ability to steer as intended. The vicle could come off the road or collid with another vehicle or with road infrastructure	Lane Keeping Assistance (LKA) function applies the steering torque in the reverse direction when active	E3 - Medium probability	Driving on highway with normal condition, could occurer 1 % to 10 % of average operating time	S3 - Life-threatening or fatal injuries	On driving on highway, speed is expected to be high and collision on high way may cause life-threatening or fatal injuries	C3 - Difficult to control or uncontrollable	The reverse steering torque can affect driver's ability to steer as intended. Most drivers would have difficult controlling the vehicle	C	Lane Keeping Assistance (LKA) function shall apply the steering torque in the correct direction when active in order to stay in ego lane