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	OS02 - City Road	EN02 - Sun blares (degraded view)	SD02 - High speed	Not Applicable	IU01 - Correctly used	Normal driving on a city road, with sunblares, high speed and correctly used system	Lane Departure Warning (LDW) function shall apply an oscillating steering torque to provide the driver with haptic feedback	DV04 - Actor effect is too much	The Lane Departure Warning(LDW) function applies an oscillating torque with very high torque which is above the limit.	EV00 - Collision with other vehicle	With the high haptic feedback the driver might loose control over the vehicle and collide with other vehicles or other infrastructure on the road	The LDW applies the oscillating torque higher than desired	E3 - Medium probability	Driving in a rainy condition on a highway can happen 1 % to 10 % of average operating time	S3 - Life-threatening or fatal injuries	Collision with other vehicles or objects could be fatal	C3 - Difficult to control or uncontrollable	It is difficult to control when the vehicle oversteers at high speed	C	The oscillating steering toque from the Lane Departure warning should be limited
HA-002	OM03 - Normal driving	OS04 - Highway	EN06 - Rain (slippery road)	SD02 - High speed	Not Applicable	IU02 - Incorrectly used	Normal driving on a highway, slippery road, 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	DV03 - Function always activated	Lane Keeping Assistance (LKA) function is always activated	EV00 - Collision with other vehicle	The driver treats the function as if it was meant for autonomous driving and eventually does not react when required	The Lane keeping assitance is always activated and the driver stops focusing on the moving car	E3 - Medium probability	Driving in a rainy condition on a highway can happen 1 % to 10 % of average operating time	S3 - Life-threatening or fatal injuries	Collision with other vehicles or objects could be fatal	C3 - Difficult to control or uncontrollable	It is difficult to control when the vehicle oversteers at high speed	C	The Lane Keeping Assistance to be time limited and the additional torque to end after a specific time interval so that the driver does not miviuse the system for autonomous driving
HA-003	OM03 - Normal driving	OS09 - Road tunnel	EN01 - Normal conditions	SD02 - High speed	Not Applicable	IU02 - Incorrectly used	Normal driving in a road tunnel, normal conditions, 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	DV06 - Actor action too early	Lane Keeping Assistance (LKA) function applies the steering torque too early in time	EV00 - Collision with other vehicle	With the Lane keeping assistance applying the steering torque too early might lead to confusion in the tunnel and the driver might loose control over the vehicle	The Lane keeping assitance applies the steering torque causing the driver to loose control of the vehicle	E3 - Medium probability	Driving in normal condition in a road tunnel can happen 1 % to 10 % of average operating time	S3 - Life-threatening or fatal injuries	Collision with other vehicles or objects could be fatal	C3 - Difficult to control or uncontrollable	It is difficult to control when the vehicle oversteers at high speed	C	Lane Keeping Assistance (LKA) function to ensible the steering torque based on the maximum distance from the center of the lane and minimum distance from edge of the road
HA-004	OM04 - Backward driving	OS10 - Road with construction site	EN01 - Normal conditions	SD01 - Low speed	Not Applicable	IU02 - Incorrectly used	Backward driving on a road with construction site, normal conditions, low speed and incorrectly used system	Lane Departure Warning (LDW) function shall apply an oscillating steering torque to provide the driver with haptic feedback	DV01 - Function not activated	The Lane Departure Warning does not provide the driver with haptic feedback	EV00 - Collision with other vehicle	With out the Lane Departure warning providing haptic feedback, the driver might potentially oversteer the vehicle when the Lane Keeping Assistance applies the steering torque in order to keep the vehicle in the ego lane	The driver oversteers the vehicle due to a false negative input from the Lane departure warning system	E2 - Low probability	Driving backward on a road with construction site can happen <1 % of average operating time	S1 - Light and moderate injuries	Low speed collision with other vehicles or objects could cause minor injuries	C1 - Simply controllable	It is managable when the vehicle oversteers on low speed	QM	Whan the Lane Departure Warning (LDW) fails the Lane Keeping Assistance should be de-activated