Course Information	Course Title	**Autonomous Driving Engineering**	Course ID	**EEE3018**
			(Course Type)	Major Elective
	(Credit/ hours per week)	3/3	Version (date)	2022
Instructor	Prof. Won, Jonghoon & Prof. Kim, Kwangki			

Course Learning Objective

	Course Objectives	Relation with Program Outcomes
1	an ability to design systems, components and processes within realistic constraints	PO 5
2	an ability to understanding the influence of engineering solutions on healthcare/safety/economics/environment/sustainability	PO 8

Course Description

1. Intro to autonomous vehicles - ADAS sensor fusion techniques based on GNSS/Camera/Lidar/Radar/Map/V2X
2. Autonomous driving and control system ? modeling, dynamic model, predictive control , etc.

Course Outcomes

NO	Details
1	Understanding basic concepts and technologies of smart vehicle
2	Understanding fundamental technologies for realization of autonomous driving system & electric vehicle: GNSS/Vision/LIDAR/RADAR/ITS Infra & communication, etc.

(Prerequisites)	N/A
(Recommended Courses after This Course)	N/A
Course Software or Tool	N/A

Textbook / references

	Title	Authors	Publisher	Place	Year	ISBN
Textbook	N/A					
references	N/A					

Lecture type	Lecture on Theory
(Notes)	

(Evaluation Criteria)

(Evaluation Criteria)	(Attendance)	10%	(Quiz)	0%	(Lab Assignment)	0%	Report	20%
	(Mid-term Exam)	30%	(Final Exam)	30%	(Total)		100 %	

(Methods of Evaluation)	Mid-term/Final Exam; Report; Presentation/Discussion

Weekly Topical Outline of Course		
(1st Week)	**Topic**	Introduction to Autonomous Driving Vehicle
	Contents	
	Assignment	
(2nd Week)	**Topic**	Basis of ADAS
	Contents	
	Assignment	
(3rd Week)	**Topic**	Recognition & Control of Environment
	Contents	
	Assignment	
(4th Week)	**Topic**	Driving Simulator Technologies
	Contents	
	Assignment	
(5th Week)	**Topic**	Navigation System (1)
	Contents	
	Assignment	
(6th Week)	**Topic**	Navigation System (2)
	Contents	
	Assignment	
(7th Week)	**Topic**	Mid-term Exam & Report
	Contents	
	Assignment	Mid-term Exam & Report
(8th Week)	**Topic**	Electrified Powertrain Modeling and Simulation [1/3]
	Contents	
	Assignment	

(9th Week)	**Topic**	Electrified Powertrain Modeling and Simulation [2/3]
	Contents	
	Assignment	
(10th Week)	**Topic**	Electrified Powertrain Modeling and Simulation [3/3]
	Contents	
	Assignment	
(11th Week)	**Topic**	Eco-driving CAV(Connected and Autonomous Vehicle) [1/3]
	Contents	
	Assignment	
(12th Week)	**Topic**	Eco-driving CAV(Connected and Autonomous Vehicle) [2/3]
	Contents	
	Assignment	
(13th Week)	**Topic**	Eco-driving CAV(Connected and Autonomous Vehicle) [3/3]
	Contents	
	Assignment	
(14th Week)	**Topic**	Torque-Vectoring Control of In-wheel based Electric Vehicle
	Contents	
	Assignment	
(15th Week)	**Topic**	Final Exam
	Contents	
	Assignment	
(16th Week)	Topic	Supplementary Lecture
	Contents	
	Assignment	