

## CoE491(B) Smart Mobility for Sustainable Society

Instructors	Hwaso Yeo, Jinwoo Lee, Hana Kim,
Grading	S,U Grading will be based on the Project, discussion and class participation,
Overview	This course is an introductory and fusion course for the new emerging smart mobility from the perspectives of human-society system. It deals with the trips generating from social-activity system, the mobility system, modeling AI-based methods and social issues, and future mobility technologies for sustainability. This course will be operated based on the discussion-based lectures and projects.

### Class Schedule

Period (week)	Lectern Session	Group/Project Session
1	[Mobility] Introduction to Mobility: Human, Vehicles, and Socio-Economic System	Class Term Project Session 1>> Introduction Topic: Concept Design of Future Mobility System with AI
2	[Mobility] Travel Patterns and Mobility Data Management	Class Term Project Session 2>>
3	[Mobility] Autonomous Mobility and Intelligent Systems/Mobility as a Service(MaaS)	Group Session 1>>Ethics Guideline for AV
4	Class Term Project Session 3>> proposal presentation	
5	[Modeling] Introduction to Mobility modeling, a general model of demand-responsive mobility services	MATSim Tutorial 1 >>
6	[Modeling] Individual shared mobility: Vehicle sharing, Personal Mobility (PM), Autonomous Mobility on Demand (AMoD), Urban Air Mobility (UAM)	MATSim Tutorial 2 >>
7	Interim Presentation	
8	Mid-term week: Interim Report	
9	[Modeling] Collective shared mobility: Ride sharing (ride-matching and carpooling) and Demand Responsive Transit (DRT)	Group Work Session 2-1>> Demand-responsive mobility system simulation (MATSim)

10	[Modeling] Multi-purpose mobility services: Food delivery, logistics, omni-purpose autonomous vehicle (module system)	Group Work Session 2-2>> Demand-responsive mobility system simulation (MATSim)
11	Class Term Project Session 4>> Progress presentation and discussion	
12	[Sustainability] Sustainability issues - climate change and air pollution	Group Discussion Session 1: Mobility-interlinked SDGs
13	[Sustainability] Energy and infrastructure/Advanced vehicles and fuels	Group Discussion Session 2: Future energy for mobility and mobility for future energy system
14	[Sustainability] Mobility for special population, social equity	Group Discussion Session 3: Affordability and accessibility
15	Class Term Project Session 5>> Final presentation	
16	Final Week: Final Report	