

# MOBILITIES, TECHNOLOGIES AND SUSTAINABLE DEVELOPMENT

## Spring 2022

<b>Course Code:</b>	<b>ANTH – 528</b>
<b>Course ID:</b>	<b>5544</b>
<b>Course Instructor:</b>	<b>Dr. Kubatbek Muktarbek uulu</b>
<b>Enrollment Key</b>	<b>ANTH528</b>
<b>Course Duration:</b>	<b>18 Weeks</b>
<b>No. of Credit Units:</b>	<b>6.0</b>
<b>Class meeting/Time:</b>	<b>Wednesday 17:00-18:15; 18:25-19:40</b>
<b>Mode:</b>	<b>ONLINE</b>
<b>Office Hours</b>	<b>By appointment</b>

### Course Description

Transportation plays a substantial role in the modern world; it provides tremendous benefits to society, but it also imposes significant economic, social and environmental costs. Sustainable transport planning requires integrating environmental, social, and economic factors in order to develop optimal solutions to our many pressing issues, especially carbon emissions and climate change.

In this course students will learn reflects a new sustainable transportation planning paradigm. It explores the concepts of sustainable development and sustainable transportation, describes practical techniques for comprehensive evaluation, provides tools for multi-modal transport planning, and presents innovative mobility management solutions to transportation problems. This text reflects a fundamental change in transportation decision making. It focuses on accessibility rather than mobility, emphasizes the need to expand the range of options and impacts considered in analysis, and provides practical tools to allow planners, policy makers and the general public to determine the best solution to the transportation problems facing a community.

Featuring extensive international examples and case-studies, textboxes, graphics, recommended reading and end of chapter questions, the authors draw on considerable teaching and researching experience to present an essential, ground-breaking and authoritative text on sustainable transport.

Students of various disciplines, will find many of its provocative ideas and approaches of considerable value as they engage in the processes of understanding and changing transportation towards greater sustainability.

### Learning Objectives/Outcomes:

In this course, students are expected to:

- explore and understand issues, principles, current policies and practices regarding fundamentals of Mobilities and technologies;
- demonstrate analysis, knowledge and understanding of the need to create more advanced sustainable technology in transportation in society;
- develop frameworks of approaches and analyses toward better urban mobility technologies and sustainability that will help societies to minimize or limit the negative impact to the environment and wealth.

**Readings, Supplementary Materials & Assignments** - To be posted on the e-course

1. Preston L. Schiller, Eric C. Bruun and Jeffrey R. Kenworthy, *An Introduction to Sustainable Transportation*. Earthscan LLC 2010.
2. Cordelia Friesendorf, Luca Uedelhoven, *Mobility in Germany Digital Transformation, Megatrends and the Evolution of New Business Models*. Springer 2012.
3. HiTrans best practice guide 2. Hestholms Trykkeri AS 2005.
4. HiTrans best practice guide 5. Hestholms Trykkeri AS 2005.
5. Elżbieta Macioszek, Nan Kang, Grzegorz Sierpiński, *Nodes in Transport Networks – Research, Data Analysis and Modelling* Springer 2020.
6. Elżbieta Macioszek, Rahmi Akçelik, Grzegorz Sierpiński., *Roundabouts as Safe and Modern Solutions in Transport Networks and Systems*. Springer 2019

### Course Requirements and their weight in the final grade:

Attendance/Participation	15%
Presentations on readings (in class)	20%
Midterm Exam	30%
Final Exam	35%
<b>Total:</b>	100%

### General Course Outline and Schedule

(subject to change at instructor's discretion)

Week	Topic	Assignments
Week 1	<b>Introduction to Mobilities, Technologies and Sustainable Development</b> History of Motion	Introduction to the course and requirements; Readings & Discussion
Weeks 2-4	<b>A Highly Mobile Planet and Its Challenges.</b> Sustainable transportation. Unsustainable transportation.	Readings & Discussion Schiller P., <i>An Introduction to Sustainable Transportation</i> . 2010.  Student presentations
Weeks 5-6	<b>Mobilities (German Experience).</b> Macro-Environment of Mobility. Traditional Mobility Models.	Readings & Discussion Friesendorf K. <i>Mobility in Germany</i> . 2012  Student presentations

Weeks 7-9	<b>Public Transport.</b> Traveling as fast as possible. Citizens' requirements.	Readings & Discussion Schiller P., <i>An Introduction to Sustainable Transportation</i> . 2010. HiTrans best practice guide 2; 5. 2005.  Student presentations
Week 10	<b>Mobility Challenges in Developing Countries</b>	Students Presentations
Weeks 11-14	<b>Traffic Planning and Safety.</b> Intersections as Bottlenecks of Transport Networks. Improving the capacity of signalized intersection. Roundabouts as safe and modern solutions.  <b>Mid-Term Exam</b>	Readings & Discussion Macioszek E. <i>Nodes in Transport Networks – Research, Data Analysis and Modelling 2020</i> . Macioszek E. <i>Roundabouts as Safe and Modern Solutions in Transport Networks and Systems 2019</i>  Student presentations
Weeks 15-16	<b>Future of Electric Vehicle Technology.</b> Battery Electric Vehicles	Readings & Discussion Larminie J. <i>Electric Vehicle Technology Explained 2012</i>  Student presentations
Week 17	<b>Summary and Conclusion</b>	
	<b>Final Exam</b>	