San José State University
Lucas Graduate School of Business
Master of Science in Transportation Management
MTM 250: Sustainable and Resilient Transportation
Fall-A 2022

Course and Instructor Contact Information

Instructor:	David Abraham, PhD
Telephone:	On request
Email:	david.abraham@sjsu.edu (preferred method of contact)
Office Hours:	Tuesdays 3:30-5:00 PM or by appointment
Class Day/Time:	Mondays 5:30-9:30 PM, on 7/25, 8/1, 8/8, 8/15, 8/22, 8/29, 9/12, 9/19, 9/26, 10/3
Classroom:	Online (Zoom)
Course website:	Canvas (http://sjsu.instructure.com)

Course Format

Students must have regular access to email and the internet in order to communicate with the instructor, submit assignments, and engage in other class activities.

Students attend class sessions online using Zoom, SJSU's online meeting application. During classes, students should:

- Be in a quiet room without distractions (e.g., no family members or colleagues walking through or asking questions)
- Have stable internet access
- Use a video camera and good quality microphone so that you are seen as well as heard
- Follow good "meeting etiquette" principles (one such list: https://blog.gotomeeting.com/7-rules-virtual-meeting-etiquette-every-professional-know/)

Plan to join at least ten minutes before 5:30 pm, to make sure you are ready when class begins. (The very first time you join from a computer or device, allow extra time for set-up.)

The university has many useful tutorials on how to use Zoom here: How to access Zoom for students | Learn Anywhere (sjsu.edu)

For more information, contact the MSTM Program Coordinator, Amir Gillani, at Amir.Gillani@sjsu.edu.

Course Description

Analysis of the multidimensional relationship between transportation systems and major environmental problems such as climate change, air pollution, noise, diminished water and soil quality, and decreased biodiversity. Exploration of innovative strategies to achieve sustainable and resilient transportation systems, such as zero-emission and other new vehicle technologies, climate resilience and adaptation plans, habitat conservation plans, principles of climate justice, and environmental impact assessment and monitoring. Case studies from across the globe that examine the interplay between sustainable management practices and technological, political, and societal factors.

MSTM Program Learning Goals:

(*Note:* Not all program learning goals are covered in every course)

Goal 1: **Transportation Systems and Society:** Craft management decisions that integrate knowledge of multi-modal transportation, social, and, environmental systems

Goal 2: **Innovation:** Develop innovative solutions to transportation management challenges

Goal 3: **Leadership:** Develop high-impact leadership styles and competencies (traits, skills, behaviors)

Goal 4: **Communications:** Communicate effectively with a diverse workforce and citizenry

Goal 5: **Analytical skills:** Identify and evaluate transportation management issues using appropriate data and methods

Course Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Describe the multi-dimensional relationships between transportation, sustainability, resilience and the environment.
2. Understand the environmental impacts of transportation modes, the infrastructure over which they operate and the social, economic and environmental impacts.
3. Describe the interplay between technological, political, economic and societal factors impacting the location and function of transportation.
4. Analyze and/or develop policy and programmatic interventions to address opportunities and constraints of transportation functions (e.g. air pollution, greenhouse gas emissions, noise, diminished water and soil quality, decreased biodiversity, land take, etc.)
5. Collect, analyze and describe data from various sources to develop and assess sustainable transportation solutions.
6. Develop a context-sensitive plan for implementation, monitoring and evaluation of sustainable transportation management solutions.
7. Communicate sustainable transportation planning and management strategies with the help of clear, accurate and compelling text and graphics in documents and oral presentations.
8. Develop and utilize leadership and teamwork skills by effective participation in group assignments and activities.

Required Texts/Readings

Textbooks

Course readings include several chapters from the following two books:

Required:
1) Tumlin, Jeffrey. 2012. *Sustainable Transportation Planning: Tools for Creating Vibrant, Healthy, and Resilient Communities.* New York: John Wiley & Sons, Incorporated. (ISBN 1-118-12762-5. SJSU Library offers online access to this book for free).

2) Rodrigue, Jean-Paul. *The Geography of Transport Systems, 5th Edition.* Routledge. 2020. (ISBN 978-0-367-36463-2. (The full text is available online for free - https://transportgeography.org/contents/)

Additional readings from academic journals, agency reports and other sources may also be used to supplement the course books. Further details will be communicated with the students through e-mail and/or Canvas.

Library Liaison

The Library Liaison for the Lucas Graduate School of Business is Christa Bailey (christa.bailey@sjsu.edu).

Course Requirements and Assignments

This course involves three major types of graded activities:

A) the group term paper that is developed through several steps during the semester (including project proposal, exploring and analyzing relevant data, and developing a sustainable transportation plan and management strategies)

B) the global case studies that involve selection of one or more city/region(s) with innovative sustainable transportation programs or policies, writing a summary report, and presenting findings in class; and

C) online class and discussion participation and engagement that requires you to respond to questions about reading materials and/or ask thoughtful questions. Your grade for the course will be based on the following assignments and other graded activities:

Assignments and Other Graded Activities	Due Date(s)	Percent of Course Grade	Course Learning Objectives Covered
Quiz: Sustainability Development	August 1	10%	1,3
Assignment 1: Paper – Sustainability and Sustainable Transportation	August 8	10%	1,3
Assignment 2: Sustainability impact assessment scoping	August 29	10%	1,2, 3
Assignment 3: Project Proposal and scoping for impact assessment	September 8	5%	1,2,3,6
Assignment 4: Global Best Practices paper	September 8	15%	2,3,4,5
Assignment 5: Active Transportation Planning paper	September 12	10%	2,4,6
Assignment 6: Integrated Transportation paper	September 26	15%	2,4,6
Assignment 7: Sustainable Transportation Plans and Management Strategies (Report Submission and Presentation)	October 3	25%	1, 2, 3, 4, 5, 6, 7, 8

Additional details on each assignment will be communicated with the students through Canvas, and/or e-mail.

Grading Information

The course grade consists of seven items (i.e. assignments and graded activities) as listed in the table above. For example, "Assignment 2 – Sustainability impact assessment" is 5% of the final grade, and "Global best practices paper" is 15% of the final grade. This means that "Assignment 2" is worth 5 points toward your final grade, and "Global best practices paper" is worth 15 points. I add the points for each assignment or graded activity to arrive at the final score for the course. For Quiz 1, I convert the number of items to a 10-point scale. Then, I use the following grading scheme to convert the final total score into a letter grade:

A+ (96 and above); A (93 to 95); A- (90 to 92); B+ (87 to 89); B (84 to 86); B- (81 to 83); C+ (78 to 80); C (75 to 77); C- (72 to 74); D+ (69 to 71); D (66 to 68); D- (63 to 65); F (below 63)

Other Grading and Assignment Issues

Students are expected to submit all assignments on the specified due dates by email (David.Abraham@sjsu.edu). Late assignments will be accepted but the score will be reduced 10% for missing the due date, and 5% for each day delayed afterwards. Missed assignments will result in a score of zero. Students who turn assignments in on time will normally receive comments from me and (if applicable) their peers within 7-10 days. For late papers, the turnaround time may well take fourteen or more business days, and these students may lose the opportunity to receive feedback from their peers.

Classroom Protocol for the Lucas College Graduate School of Business

http://www.sjsu.edu/cob/Students/policies/index.html

Other Classroom Rules

Students are expected to attend every Zoom meeting with their cameras turned on unless necessary based on individual discretion. Students have a responsibility to show respect to fellow classmates during the Zoom meetings and group assignments. To do so, please:

- Avoid interrupting other speakers and listen to the ideas of others with respect during class and group activities.
- Do not use electronic devices for purposes not relevant to the class and/or when it is distracting to others or keeps you from being engaged in class.
- Balance the workload among team members equitably in a way that allows the team to effectively utilize the strengths of each team member.
- Develop a common understanding of goals and steps required to achieve those goals for group activities.
- Develop effective communication and time management strategies suitable for your group assignments.

Class and Online Discussion Participation Guidelines

You are expected to have carefully read and thoroughly thought about the assigned readings BEFORE each class session and/or BEFORE responding to relevant discussion board activities. Failure to read the assigned chapter(s) and/or article(s) will seriously hinder your ability to engage in class or online discussions and/or activities impacting your participation points and final grade. I encourage you to take notes while reading assigned materials.

Please note that you may be randomly selected to answer a question about the readings or apply your knowledge gained through readings to a group activity or an in-class exercise. Your presence means that you are ready to engage in these class activities.

University Policies

Per University Policy S16-9, relevant university policy concerning all courses, such as student responsibilities, academic integrity, accommodations, dropping and adding, consent for recording of class, etc. and available student services (e.g. learning assistance, counseling, and other resources) are listed on this Syllabus Information web page. Make sure to visit this page to review and be aware of these university policies and resources.

Course Schedule

Note: This schedule is subject to change with fair notice. Check your email and Canvas frequently for any changes to this schedule.

Week	Date	Subject	Readings	Assignments
Part I: Understanding Sustainable Development, Transportation impacts to the environment and Climate				
1	July. 25	***Introduction, Sustainable Development Synergies*** Pt.1,2 – Introductions and Sustainable development professional discipline specific Opportunities & Constraints Pt.3 – Course Overview Pt.4 – Exercise	- Course Syllabus - Steady State Economy; Our Common Future (PDF handouts)	Quiz 1
2	Aug. 01	***Sustainable Development Foundations*** Pt.1 – Where are we? Pt.2 - What is Sustainable Development? Pt.3 – Discussion: What does it mean. Pt.4 – Group Exercise	- Steady State Economy; Our Common Future (PDF handouts) - Tumlin Chpt 1	
3	Aug. 08	***Sustainable Development/ Sustainable Transportation*** Pt.1 – Where are we? Pt.2 - What is Sustainable Transportation? Pt.3 – Discussion: What does it mean. Pt.4 – Group Exercise	- Tumlin Chpt 2 - Video - https://www.youtube.com/watch?v=A9iRBVEU72c - GSDR Report 2019 Pp 1-24 - Litman 2022, Pp. 1-12	**Assignment 1** - Sustainability and Sustainable Transportation
4	Aug. 15	***Transportation Impacts: Health/ Environment/ Climate/ Resilience/ Sustainability Futures/ Smart Vehicles/ Policy*** Pt.1 – Impacts Review Pt.2 – Future Technologies Pt.3 – Discussion: Impacts/ Technology/ Public Policy Pt.4 – Group Exercise	- Tumlin Chpts 3, 4 - Rodrigue Chpt 4 -	***Assignment2*** - Sustainability Impact Assessment
Part II: Transportation systems & modes				
5	Aug. 22	***Streets/ Resilience; Parking/ Climate*** Pt.1 – Streets/ Resilience Pt.2 – Parking/ Climate Pt.3 – Discussion: Economics vs Environment Pt.4 – Exercise	- Tumlin Chpt 5,10 - Rodrigue Chpt 4.4 - Case Studies: TxDOT REAL; FSX; Hyperloop; Autonomous Vehicles	***Assignment 3*** – Visioning Sustainability Futures and Public Policy **Assignment 4** – Global Case studies

6	Aug. 29	***Pedestrians/ Bicycles*** Pt.1 – Pedestrians Pt.2 – Bicycles Pt.3 - What does it mean. Pt.4 – Group Exercise	-	Tumlin Chpt 6,7	Assignment 5 – Active Transportation Planning
7	Sept. 05	***Labor Day (No Class)***	No Readings		
8	Sept. 12	***Transit/ Motor Vehicles*** Pt.1 – Transit Modes/ Planning Pt.2 – Motor Vehicles Pt.3 – Discussion: Performance Measurement Pt.4 – Group Exercise	-	Tumlin Chpt 8,9	Group Exercise: Plan structure to synthesize/ finalize term report
9	Sept. 19	***Sustainable Transportation Planning & Management*** Pt.1 – Station & Station Areas/ TDM Pt.2 – Performance Measurement Pt.3 – Discussion: Sustainability Systems Pt.4 – Group Exercise	- ,	Tumlin Chpt 12,13,14	Assignment 6 – Integrated Transportation Solutions
Part III: Developing and Implementing Sustainable Transportation Solutions					
10	Sept. 26	***NO CLASS/ Group Workshops***			Assignment 7 – Final Report and Presentation
11	Oct. 3	***Student Presentations***			