Program 3: Car Share Fleet Operations
Instructional Modules
40 hours

Recommended Reading Level: ABE 4 or above

Module #1 Introduction to Car Share Operations			
Objective: Overview of what car sharing is, careers associated with car sharing, and the various responsibilities/skills required.			
Instructional Materials: YouTube video, online articles			
Lesson Plan			**Standards/ Aligned Text**
Week 2, Day 1 2.5 Hours	**Introduction**	Overview of car share models and their operational requirements	
	Activities	**Introduction: What is Car Sharing?** Start with a class discussion. Ask students: What do you know about car sharing? How does it differ from traditional car rentals or owning a vehicle? How does the nonprofit model differ from private sector firms? Show one or more of the following videos to highlight car share programs: - Grand Rapids launches new EV car share program $5 Per Hour EV Car Share Program in Michigan - Michigan CarShare, short-term EV car rental option, comes to Detroit - What does it Mean to be a Nonprofit? After the videos, discuss: - Why is car sharing becoming popular? - How does it benefit users and communities? **Research Activity: Exploring Car Share Programs (focus on non-profit)** Assign students to pairs or have them work individually, depending on class size. Distribute the guiding document with research prompts, such as:	

		- How does the program operate (e.g., reservation system, vehicle availability)? - Who is the target audience (e.g., commuters, low-income families, eco-conscious individuals)? - What is the program's impact on transportation trends (e.g., reduced emissions, increased accessibility)? Each pair is assigned one program to research: - Miocar - FORTH Community Carsharing - Envoy Electric Car Sharing Service - Evie Car Share - Zoom EV **Digital Literacy:** Students use program websites and resources to gather information. Each pair/student presents their findings to the class, addressing the guiding document prompts. After each presentation, ask: What did you find interesting about this program? How does this program compare to the others we've learned about?	
	Assessment	**Assessment:** Use rubric to evaluate presentations based on: - Clarity and accuracy of information - Depth of analysis on the program's operations, target audience, and transportation impact Conclude by asking: - What do you think is the future of car sharing in your community? - How could car sharing programs be improved to serve more people?	
Week 2, Day 2 2.5 Hours	**Introduction:**	**Understanding user needs and expectations**	
	Activities	**Introduction**: Provide students with the reading, "Everything you need to know about car sharing." Display the reading on the board, and read aloud as a class. Have students identify information about: - Car sharing user demographics - Benefits of car sharing for different groups (e.g., cost savings, environmental impact) - Barriers and challenges (e.g., availability, costs, or accessibility)	

		As a class, compile findings on the board, categorizing insights into potential user types (e.g., urban professionals, students, families).	
		Activity: Divide students into pairs or small groups. Assign each group a user type (e.g., "Budget-conscious college student," or "Eco-conscious urban professional). Provide each group with a persona template. Have students fill out details such as: ● Name, age, location, occupation ● Transportation goals (e.g., saving money, reducing environmental impact) ● Pain points (e.g., limited car availability, app usability issues) ● Preferred features in a car sharing service Encourage groups to give their persona a personality by including hobbies, a daily schedule, and specific scenarios where car sharing would benefit them ● Each group presents their persona to the class, explaining: ● How they identified the persona's characteristics ● The persona's specific needs and how a car sharing service might meet them	
	Assessment	Evaluate participation during group discussions and presentations. Review the detail and creativity in each group's persona.	

Module #2 Fleet Management			
Objective: Understanding the basics of fleet management with a specific focus in EV fleet management.			
Instructional Materials: YouTube video, online articles			
Lesson Plan			**Standards/ Aligned Text**
Week 2, Day 1	**Introduction**	Key responsibilities in fleet management	

2.5 Hours	Activities	**Introduction: What is Fleet Management? (1 hour)**	
		Begin with a discussion question: What comes to mind when you hear "fleet management"?	
		Write down students' ideas to connect their existing knowledge with the lesson objectives	
		Define fleet management and its importance in the car sharing industry	
		Activity:	
		Use slides to outline the key responsibilities of fleet managers:	
		● **Vehicle Maintenance**: Ensuring vehicles are in good working condition to prevent downtime	
		● **Scheduling and Dispatching**: Allocating vehicles efficiently to meet demand	
		● **Tracking and Data Analysis**: Using software to monitor vehicle performance and usage	
		● **Communication and Coordination**: Collaborating with drivers, users, and service teams	
		● **Compliance and Safety**: Adhering to legal regulations and safety standards	
		Group Activity: (1 hour)	
		In pairs, ask students to read the "What is Fleet Management?" article taking notes in the following format:	
		On the left, notes based on the article. On the right, brainstorm what might be different for an EV car sharing program? What may be different when you don't see your customers before each use? What isn't included in this article that you feel would be important for an EV fleet?	
		Presentation & Discussion: (30 mins)	
		Students will report their findings. Discuss the differences, looking up any questions or details online, demonstrating critical thinking and digital literacy.	
	Assessment	Observation of group work and evaluation of the students' understanding of EV fleets.	
Week 2, Day 2 2.5 Hours	Introduction:	**Continued with warm up to fleet maintenance**	
	Activities	**Group Activity (1 hour 30 mins)**	
		Divide students into small groups	
		Assign each group one of the responsibilities (e.g., maintenance, scheduling, tracking). Ask them to brainstorm examples of tasks that might fall under their assigned responsibility and why those	

		tasks are important. Groups share their brainstormed ideas with the class.	
		Closing: (45 mins) Highlight how all responsibilities are interconnected to ensure efficient fleet operations.	
	Assessment	**Evaluation (15 mins)** Evaluate participation in group brainstorming and discussions. Ask students to write down one takeaway from the lesson on a 3x5 card and turn it in as they leave the class.	

Module #3 Fleet Logistics and Redeployment			
Objective: Building on the knowledge of fleets, students will gain the ability to redeploy vehicles.			
Instructional Materials: YouTube video, online articles			
Lesson Plan			**Standards/ Aligned Text**
Week 2, Day 1 2.5 Hours	**Introduction**	Routine vehicle inspections (battery levels, cleanliness, and mechanical checks)	
	Activities	**Class Discussion (30 mins)** ● Why are routine vehicle inspections critical in fleet operations? ● What consequences could arise from skipping inspections? ● Use slides to outline the key purposes of vehicle inspections: ● Ensuring safety for drivers and passengers. ● Minimizing vehicle downtime. ● Identifying and addressing issues early to reduce repair costs. **Activity (1 hour)** ● Distribute the inspection checklist to students and explain its purpose.	

		● Divide students into small groups. Assign each group to a vehicle (or have them take turns if there is only one vehicle). ● Students use the checklist to perform a routine inspection. **Presentation & Discussion (30 mins)** Groups present their findings, discuss any problems they identified, and suggest potential next steps for addressing those issues.	
	Assessment	**Evaluation: (30 mins)** Evaluate participation during group discussions and presentations. Review the details in their inspection checklist, providing details during activity.	
Week 2, Day 2 2.5 Hours	**Introduction:**	Preparing vehicles for user deployment	
	Activities	**Reading Comprehension**: (15 min) Provide students with the reading, "How to Clean Your Car Interior Like a Pro". Display the reading on the board, and read aloud as a class. Have students identify information about: Cleaning chemicals, cleaning equipment, and steps. Discuss as a class the customer service implications of fleet cleanliness. **Experiential Learning Activity - Vehicle Report (1 hour 45 mins)** **Step 1:** Form pairs or small groups (3-4 students). Each group will select or be assigned a fleet vehicle to inspect. **Step 2: Create the Vehicle Report** Interior Detailing Needs: Identify at least three items that require cleaning, restoration, or detailing inside the vehicle. For example, you could note dirty upholstery, dust buildup on vents, or sticky dashboard surfaces. Exterior Detailing Needs: Identify at least three items on the exterior that require attention, such as dirt buildup on the body, bird droppings, worn-out tires, or dirty windows. Damage or Issues Beyond Detailing: Identify at least one issue that falls outside of detailing (e.g., a dent, scratch, broken facia, cracked windshield, or malfunctioning part). For each item listed, provide a description of the damage or issue. **Step 3: Detailing and Repair Plans** For each item listed in your report, explain how it would be cleaned or detailed: What tools, products, or techniques would you use to clean or restore the item?	

| | | Include any special instructions or steps to ensure proper care (e.g., "Use leather conditioner to treat the upholstery"). For the damage or issues that require repair (outside of detailing): Explain how you would refer this issue to a qualified technician. For example, "The dent on the rear bumper will need to be referred to our body shop for a professional repair." Be specific about the steps or processes you would follow to escalate this issue.

Step 4: Customer Communication
Imagine that a customer has called and expressed concern about the issues you've identified. In teams, students will role-play a phone conversation where they explain how each issue will be handled:
● What would you say to reassure the customer that their concerns are being taken seriously?
● How will you explain the detailing process for each of the interior and exterior items?
● How will you explain the non-detailing issues (such as the dent or scratch) and let the customer know that they will be referred to the appropriate technician?

Step 5: Presentation (Flipped Classroom)
Students present their findings to the class:
● Share your vehicle report, detailing the interior and exterior needs, as well as the damage.
● Explain your plans for detailing the items and referring any non-detailing issues to a technician.
● Role-play the customer call, demonstrating how you would communicate effectively and professionally with a customer. | |
| | **Assessment** | **Application of Workplace Knowledge: (15 mins)**
Completeness of Report: Did you identify at least three interior and three exterior detailing needs? Did you include one non-detailing issue?

Detailing Plan: Are the steps for cleaning or detailing the items well-explained and realistic?

Repair Referral: Is the referral process for non-detailing issues clear and professional?

Customer Communication: Is the role-play of the customer call professional, empathetic, and clear? | |

Module #4 Battery & Repair			
Objective: Safely completely small repairs of vehicle systems or assess the fleet vehicles for redeployment.			
Instructional Materials: YouTube video, online articles			
Lesson Plan			**Standards/ Aligned Text**
Week 2, Day 1 2.5 Hours	**Introduction**	Battery Swapping	
	Activities	**12V Batteries & EV's:** Reflect on prior experience and watch video about traditional 12V batteries **(30 mins)**	

Under Activities:

12V Batteries & EV's: Reflect on prior experience and watch video about traditional 12V batteries **(30 mins)**

> **Reflection Question:** What experience do you have with car batteries, changing batteries, etc?
> **Watch Video:** "How a Car Battery Works - Basic Working Principle"
> **Discussion:** Did the video confirm or deny your prior experience and knowledge?

Active Reading Activity (30 mins)
Read "Why Do Electric Cars Still Use 12-Volt Batteries?" for understanding by using Cornell note taking strategies to identify unknown vocabulary on the left and notes on the right. As a class, review the unknown vocabulary and clarify for understanding:

> Electrons
> Volts
> PHEV
> Propulsion
> Circuit
> Powertrain
> ECU
> Internal-combustion
> EPA
> Cargo
> Traction

Active Reading: (30 mins)
As a class read "How to Disconnect a Car Battery". Taking notes, discuss the steps as they are completed.

		Discussion: Logging and tracking battery performance for replacements (30 mins)
		Present slide deck on the importance of tracking battery performance in a fleet of vehicles. Include the safety concerns, OSHA requirements, and the various systems that can be used to track the data on each vehicle. Include examples of the inspection report.
		Contextualized Learning: (30 mins) In pairs, students will first observe the instructor safely removing a battery on a lab-based EV or trainer. Then, the students will take turns removing and replacing the car's battery. Students will also test the batteries and input the batteries in the inspection report.
	Assessment	Evaluate participation during group discussions and presentations. Review the student's completion of the inspection report.
Week 2, Day 2 2.5 Hours	**Introduction:**	**Organizing Repairs**
	Activities	**Inquiry-based learning: "What's Next" Activity (1 hour)** Group students into small groups. Using vehicles or trainers in the lab, each group will complete the Routine Vehicle Inspection activity included. Instructor's should assist students, walking them through how to complete an inspection. After the inspections are complete, the students should assess and note what repairs should be completed and complete the discussion questions: - What repairs can be completed by your group? - What repairs should be completed by a licensed technician or by a licensed shop? - What steps will you follow in order to refer the vehicle for repairs? **Active Reading: (1 hour)** Provide students with the readings "How to Change a Flat Tire" or "Tire Safety and Maintenance" to read in pairs. Students will take notes on the steps for changing a flat tire or tire safety. After reading, each group will find another group that read the other article and will teach them the steps learned from each. **Experiential Activity - Contextualization of Workplace readiness skills:** After sharing with the groups, all students will observe the instructor changing a tire and checking for any codes that need to be reset in the sample EV fleet vehicle.

| | | After observing, the students will work in teams to practice changing a tire following all required safety standards.

Computational Thinking Activity: Troubleshooting Map (1 hour)
On their own, students will use their prior knowledge to create a troubleshooting flowchart that leads to two outcomes:
      Fleet maintenance or referral for a more comprehensive repair.
      Tire change or allowable repair is completed.
Digital Literacy: Students can use Microsoft Word, Exel, or PowerPoint to design a troubleshooting map.
Materials needed: Computer or device equipped with Microsoft Office or Google Suite. Sufficient time for students to access programs and receive assistance.
Simplified lesson: Studentsdesign a map using paper, pens, markers, etc. | |
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| | **Assessment** | **Discussion: (10 mins)**
As a class, reflect on the readings and experience. Was there any new terminology? What do you think are additional concerns or issues that may arise from EV fleet vehicles in a car sharing program? | |

Module #5 Strategic Redeployment

Objective: Students will understand the use of data to manage a fleet of vehicles.

Instructional Materials: YouTube video, online articles

Lesson Plan			Standards/ Aligned Text
Week 2, Day 1
2.5 Hours	**Introduction**	Data-driven vehicle relocation to meet demand	
	Activities	**Understanding Data Analysis (2 hours, 30 mins)**
Complete the Data Analysis Skills on Demand lessons on PBS.org lesson plan and activities.
Refer to resources provided by PBS. org on this lesson:
COMPLETING THE LESSONS	

		Before the Lesson	
		Use these tips to help you become familiar with the lessons and adapt them, as necessary, for the needs of your students.	
		Go through each page, including all of the interactive tools, so that you can experience ahead of time what students will be doing. As you go through each page, jot down your own expectations for students' responses.	
		After you have reviewed the lesson, decide whether you will need to provide additional background information for students so that they can better understand the context of the lesson.	
		Review common note-taking techniques with students. As you may have already discussed in class, notes can be words, phrases, or sentences and should represent what students think are the most important aspects of what they see and hear.	
		Determine if students will be working individually, in pairs, or in groups, or if you will be presenting all or parts of the lesson to the whole class at once.	
		Decide whether you want to expand the lesson to include class discussion, debate, or other whole-group activities. If so, determine where students should pause their independent work so that everyone is at the same place for the discussion or activity.	
		The text contains definitions for terms and words relevant to the content. However, for general vocabulary, and especially for primary source materials, you may want to preview additional words and/or concepts that students could find unfamiliar or challenging.	
		Explain to students the timeline for completing the lesson. Mention the different types of activities they will encounter and let them know how you expect them to submit their work. You may want to provide an outline of this information on a chart, chalkboard, or whiteboard, or as a handout.	
		Remind students that they can watch the videos as many times as they choose.	
		Application of Knowledge: Now that students have a deeper understand of data analysis, ask these discussion questions: What type of data points do we see in car sharing fleet management? How might these data points change over time?	

		Materials Needed: Students will need computers, iPads, or tablets that can access Smartsheets. If a more detailed, proprietary SmartSheet is available, offer it to students as an example.	
	Assessment	Evaluation of open discussion, reading comprehension, and communication style. What type of data points do we see in car sharing fleet management? How might these data points change over time?	
Week 2, Day 2 2.5 Hours	Introduction:	Data-driven vehicle relocation to meet demand (Continued)	
	Activities	**Introduction: What is data-driven vehicle relocation? (1 hour)** Begin with a discussion question: What comes to mind when you hear "data-driven vehicle relocation"? Write down students' ideas to connect their existing knowledge with the lesson objectives Define fleet management and data, and its importance in the car sharing industry **Activity**: Use slides to outline the key responsibilities of fleet managers: ● **Vehicle relocation**: Ensuring vehicles are centrally located in the service area. ● **Scheduling and Dispatching**: Allocating vehicles efficiently to meet demand ● **Tracking and Data Analysis**: Using software to monitor vehicle performance and usage ● **Communication and Coordination**: Collaborating with drivers, users, and service teams ● **Compliance and Safety**: Adhering to legal regulations and safety standards **Managing fleet availability during peak hours (1 hour 30 mins)** In pairs, students will discuss peak traffic hours for travel in their area. What do they theorize are the complications of EV fleet vehicles in their area during this time? **Presentation:** Present a slide deck on the various needs, complications, and required data in order to best serve EV car sharing customers during peak travel hours.	
	Assessment	**Exit Ticket: (10 mins)** On a 3x5 card, as the students write down one thing they learned about EV fleet maintenance and redeployment and one	

		question they have about this subject.	

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<tr><td colspan="4">Module #6 Car Share Software Management</td></tr>
<tr><td colspan="4">Objective: Students will learn about the various software management tools used in car sharing programs.</td></tr>
<tr><td colspan="4">Instructional Materials: YouTube video, online articles</td></tr>
<tr><td colspan="3" align="center">Lesson Plan</td><td align="center">Standards/ Aligned Text</td></tr>
<tr>
<td>Week 2, Day 1
2.5 Hours</td>
<td>Introduction</td>
<td>Car Share Software Management</td>
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<td>Activities</td>
<td>Tracking and Scheduling Tools: Using Smartsheet (2.5 hours)
Students will create a smartsheets account and walk through how to use it while watching the how-to videos on the SmartSheets website:
https://help.smartsheet.com/video_tutorials

Building a Smartsheets:
Students will use prior knowledge of EV car sharing needs and management to create a Smartsheet that includes the following:
Inspection completed
Small repairs needed
Schedule repairs (with details)
Track vehicle statuses
Monitor operations

Materials:
Students will need computers, iPads, or tablets that can access Smartsheets. If a more detailed, proprietary SmartSheet is available, offer it to students as an example.</td>
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<td>Assessment</td>
<td>On a 3x5 card, students share their progress using smart sheets and detail their next steps for the following class.</td>
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<td>Week 2, Day 2
2.5 Hours</td>
<td>Introduction:</td>
<td>Car Share Management Software continued</td>
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<td>Activities</td>
<td>Car Share Management Software (continued)</td>
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		Slide Deck (45 mins)	
		Present a slide deck that discusses the different programs and needs required to manage reservations, scheduling, payments, and vehicle status.	
		Pre-work Discussion (15 mins) What would be some complications of	
		SmartSheets Continued (1 hour 30 mins) Students will continue working on building a car share SmartSheets. After today's presentation, they should now include methods for managing reservations, scheduling, payments, and tracking vehicle status.	
	Assessment	Students will email the SmartSheets link to their instructor for grading. Instructors should review it for completeness, organization, understanding of EV fleet needs, etc.	

Module #7 Customer Service Skills for Car Share Users

Objective: Students will learn key skills to communicate with customers, practicing the skills they learn.

Instructional Materials: YouTube video, online articles

Lesson Plan			Standards/ Aligned Text
Week 2, Day 1 2.5 Hours	**Introduction**	Empathy and Communication	
	Activities	**Discussion: (30 mins)** **As a class, discuss using the following questions:** What is empathy? How does empathy help us when working with customers? What type of customer issues or concerns do you think you might experience working for an EV car sharing company? **Active Reading: (30 mins)** In pairs, assign the Harvard Business Review article "4 Ways to Communicate with more Empathy". **Key Terms from the Article:**	

		● **Empathy**: The ability to understand and share the feelings of another person, particularly important for leaders in building trust and fostering team cohesion.	

● **Empathy**: The ability to understand and share the feelings of another person, particularly important for leaders in building trust and fostering team cohesion.

● **Empathic Communication**: The practice of conveying understanding, care, and action in response to others' challenges, helping to build emotional connections in leadership.

● **Listening**: Actively paying attention to what others are saying, demonstrating an openness to understanding their concerns without interruption.

● **Acknowledgment**: Recognizing the existence and impact of challenges or distress, showing that the leader is aware of the situation.

● **Care:** Demonstrating genuine concern for the well-being of others, moving beyond acknowledgment to express emotional support.

● **Action**: Taking steps to address issues or alleviate distress, showing that the leader is committed to resolving challenges.

● **Transparency**: Being clear and honest, especially in difficult or uncertain times, to maintain trust and avoid misunderstandings.

● **Authenticity**: Ensuring that communication sounds genuine and not scripted, making it easier for teams to feel emotionally connected to the message.

● **Resilience**: The ability to cope with challenges and bounce back from setbacks, often encouraged through messages of support and encouragement from leaders.

● **Corporate Stewardship**: The responsibility of leaders to guide their organizations with integrity and care, focusing on the well-being of the team as well as the long-term health of the company.

● **Emotional Intelligence (EQ):** The ability to recognize and manage one's emotions and the emotions of others, an essential skill for effective empathic communication.

Group Activity (1 hour 30 mins)
Divide participants into small groups.
Assign each group a different scenario related to a car share challenge (e.g., such as late returns, app navigation, and technical errors).
Ask each group to draft a message from a leader to their customer using the four empathic communication touchpoints:

		Listening: How will the leader show they understand the situation? Acknowledgment: What words or phrases will they use to show they recognize the challenge? Care: How will the leader express concern? Action: What concrete steps will the leader mention to address the situation **Role-play (30 minutes):** Each group will choose one person to present their message in the form of a role-play, where they act as the leader delivering the message to the team. After the role-play, other groups provide feedback on how well empathy was conveyed in the communication. Gather everyone together and discuss what went well and what could be improved in the communication of empathy. Highlight the dos and don'ts from the article, especially focusing on authenticity and not overemphasizing the leader's perspective.	
	Assessment	Exit Ticket: On a 3x5 card, ask students to write down how effective it is to use empathy when communicating with customers.	
Week 2, Day 2 2.5 Hours	**Introduction:**	**Conflict Resolution**	
	Activities	**Active Reading: (1 hour, 15 mins)** De-escalation techniques and managing disputes professionally As a class, read the article "13 De-escalation Techniques for Customer Service Professionals". In pairs, discuss the different techniques from the article, selecting 3-4 that they would like to practice. Workplace Skills: Practice real-world customer interactions(1 hour) In small groups of 3-4 students, each student will take a turn acting as the angry customer. The other groups members will use the de-escalation techniques to resolve the solution. **Short writing: (45 mins)** What was your experience working with an angry customer? Which de-escalation technique was the most effective at resolving the customer complaint? What would you do differently in a real-world situation?	

	Assessment	**Writing Evaluation (15 mins)** Students will turn in their journal entries. As a class, each group will also share their experiences and their evaluation of their own effectiveness.	

Final Exam: Hands-On Practice and Applications (6 hours)	
Simulated Scenarios (4 hours): Using provided scenarios, students will complete inspection reports, repair referrals and use software to schedule repairs, redeploy vehicles, and manage reservations.	**Standards/ Aligned Text**
Team Collaboration (2 hours): Practicing Slack communication and Smartsheet tracking for daily fleet operations. Students will access their Slack and Smartsheets account to track the daily operations and complete a provided scenario. Evaluation will be based on a rubric.	