2016 Transportation Academy

Transportation Trends & Technologies

Group Research Project

During this program you have learned about a variety of modes, career options, and cutting-edge technologies that are changing the landscape for transportation professionals of the future. This project will allow you to conduct research to learn more about one topic of interest and to further educate an audience of your peers. Your final product for this project will be a presentation by your group on Friday to an audience that will include other students, faculty, and parents. An independent panel of reviewers will score your presentation based on the rubric provided in this handout and this score will become part of your group’s total score for the week.

Project Requirements:

1. Choose **one** of the following transportation trends/technologies for your research project:
   1. Connected Vehicles
   2. Autonomous Vehicles
   3. Hyperloop
   4. Positive Train Control
   5. Biologistics (cold chain technologies, sensors, innovative packaging)
   6. ‘Uber’ for trucking
   7. Technological innovations in transportation for people with disabilities
   8. Alternative fuels/vehicles (ex. Innovations in diesel engines; hybrid technologies; etc.)
   9. Innovations in e-commerce
   10. Smart Cities
   11. Another topic of your choosing (must be approved by instructor)
2. Prepare a **5-7 minute** presentation that provides the following information about your topic and ‘sells’ the trend to your audience (why should they be excited about this?):
   1. A detailed description of the trend/technology so that someone completely unfamiliar with this topic will be able to understand
   2. Identify the advantages and disadvantages of this trend/technology from the following perspectives:
      1. posSafety
      2. Efficiency
      3. Environmental impact
      4. Cost
      5. Access/connectivity
   3. Explain any policy or regulatory requirements or considerations related to this trend/technology.
   4. Identify career pathways for someone interested in working in this area (i.e. what kinds of jobs are available, what kinds of skills are required, what kinds of professionals are needed?)
   5. Conclude with key challenges or areas of research that are currently being pursued for your trend/technology and how solving these problems might impact our society in the future. (and why transportation professionals are so important!)

A rubric that will be used to score the project presentations (and should be used to develop your presentation) is provided on the following page.

Additional Resources:

Associate of American Railroads Positive Train Control: <https://www.aar.org/policy/positive-train-control>

United States Department of Transportation Intelligent Transportation Systems: <http://www.its.dot.gov>

Hyperloop Transportation Technologies: <http://hyperlooptransp.com/#!/>

Presentation Rubric

|  |  |  |  |
| --- | --- | --- | --- |
| **Professionalism** | Excellent (5) | Good (3) | Needs Improvement (1) |
| Team Composure | All team members make eye contact with audience, avoid unnecessary movement, speak clearly and project voices | Most team members make eye contact with audience, avoid unnecessary movement, speak clearly and project voices | Many team members avoid eye contact with audience, are distracting with movements, and it is difficult to hear them when they speak |
| Slide Presentation | All slides are clear and easy to read- contrasting colors are used, font is legible, text on each slide is limited, pictures are used where appropriate | Most slides are clear and easy to read- contrasting colors are used, font is legible, text on each slide is limited, pictures are used where appropriate | Slides are difficult to read because of lack of contrasting colors, illegible fonts, too much text on a slide, pictures that do not support statements |
| **Technical Content** |  |  |  |
| Detailed description of the trend/technology provided | Presented so that a person with no knowledge of this topic can easily understand | Presented so that a person with some knowledge of this topic can easily understand | Presentation required audience to have detailed knowledge of this topic to understand |
| Advantages and disadvantages presented | Advantages/disadvantages related to all of the following areas were presented:  Safety  Efficiency  Environmental impact  Cost  Access/connectivity | Advantages/disadvantages related to 4 of the following areas were presented:  Safety  Efficiency  Environmental impact  Cost  Access/connectivity | Advantages/disadvantages related to 3 or fewer of the following areas were presented:  Safety  Efficiency  Environmental impact  Cost  Access/connectivity |
| Policy | Policy or regulatory requirements were addressed |  | Policy or regulatory requirements were not addressed |
| Link to career | Team identified all required career linkages (job opportunities, skills required, and types of professionals employed) | Team identified only 2 of the career linkages | Team identified only 1 of the required career linkages |
| Conclusion | Team concluded with key challenges and impact on society | Team concluded with key challenges or impact on society | Team did not present either key challenges or impact on society |
| Knowledge of Topic | All team members respond appropriately to questions and appear to have fully participated in the group project | Most team members respond appropriately to questions and appear to have fully participated in the group project | It appears that only one of the team members may have conducted the work; team is unable to respond appropriately to questions |