Baja SAE Design Team
Kody Willis (Team Lead), Austin Munz (Team Lead), Guillaume Austin, Christopher Bond, Brisa Garcia, Mya Longmire, Ian Roberson, Michael Narum, David Kunkel, Mateo Sanchez, Joseph Carrillo, Cole Dunning, Cory Jenkins, Ana Fuentes, Anastasia Western, Douglas MacNinch

Background
Baja SAE® is a series of international collegiate design competitions. Teams gain real-world engineering experience in automotive processes by designing and building a single seat off-road competition vehicle. Due to Covid the in-person competition has been canceled and the online events are scheduled tentatively for late June early July of 2020.

Competition Breakdown

<table>
<thead>
<tr>
<th>Dynamic Events</th>
<th>Points</th>
<th>Static Events</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acceleration</td>
<td>75</td>
<td>Design Evaluation</td>
<td>150</td>
</tr>
<tr>
<td>Traction</td>
<td>75</td>
<td>Cost Report</td>
<td>15</td>
</tr>
<tr>
<td>Maneuverability</td>
<td>75</td>
<td>Sales Presentation</td>
<td>50</td>
</tr>
<tr>
<td>Suspension</td>
<td>75</td>
<td>Prototype Cost</td>
<td>85</td>
</tr>
<tr>
<td>Endurance</td>
<td>400</td>
<td>Total Possible</td>
<td>1000</td>
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Driver Controls
- Redesigned in order to ease the process of machining the bracket.
- Redesign incorporates less angles and use of common fasteners.
- New design does not sacrifice the features of the first design.
- Appropriate brakes selected for front and rear.
- Steering assembly finalized.
- Completed machining of the steering bracket.

Frame
- Redesigned the rear end of the frame to save weight.
- Removed erroneous members and cleaned up surface.
- Redesigned engine envelope to accommodate other subgroups.

Suspension
- A-Arms Fabrication nearly completed.
- Bushings and hardware on hand.
- Ball joints on hand/ordered.
- Swing arms designed and ready to start.

Drive train
- Sealed CVT and mounted half shaft to gearbox.
- Redesigned gearbox mounts.
- Redesign will allow for a lower mounted gearbox which will allow for more suspension travel without CV shaft binding a problem previous cars faced.

Design Milestones
- A-Arm and Rear Swing arm design updated for available materials. (A-arms nearly completed, swing arms yet to be manufactured).
- Brake design finalized from available materials.
- Gearbox Mount design to lower Drivetrain components and increase performance.
- Update of body panel materials for increased rigidity.
- Update of Seat mount designs.

Sponsors:
New Mexico Tech, Thermal Transfer Products, NMT Student Government, Solidworks, NMT SGA, AND NMT Mechanical Engineering Department.

Project Advisor: Dr. Curtis O’Malley

The 2019-2020 Team

2019-2020 NMT Baja SAE® Design Team