

Project Title:	2003-2004 T.O.M.B. Suspension and Steering
Client:	ONU Engineering Department
School Year:	2003-2004
Students:	Adam Lane and Dave Anderson
Summary:	Our problem for the duration of the project is to adequately support and maneuver the Mini-Baja with a total weight of 350 to 400 lbs. We began by researching potential steering and suspension designs with emphasis to factors such as stiffness, damping, cost, response, sensitivity, innovation, and integration in order to obtain our functional requirements. After we completed research, we analyzed different alternatives for the steering and suspension systems using Pro-Mechanica, MatLAB, and Working Model. From there, we chose a design that fell in line with our functional requirements, and we chose to implement it. The suspension system consists of independent front and rear suspensions that use a combination of double A-arms, air springs, and traditional shocks. The steering system consists of a rack and pinion and minimized bump steer. Fabrication consists of integrating steering and suspension components with the frame design, power train, and braking systems. Testing will occur in the last phase of the project, which will include minor adjustments to shock and spring stiffness, wheel toe in and toe out, and tire inflation pressure.

