Project Title:	**Mini Baja 2003-2004** **Frame, Roll cage, and Cockpit**
Client:	ONU Engineering Department
School Year:	2003-2004
Students:	John Evans and Joel Greer
Summary:	Jon Evans and Joel Greer were selected to design this year's Mini Baja frame and roll cage. One major goal that we wanted to incorporate into this year's design was the performance of finite element analysis over the design of the frame. We wanted to compare this year's design to last year's design so we would have a quantitative analysis of whether or not our designs were improving or not. We also wanted to explore the option of using a different material from last year. After several calculations we determined that we would continue to use 4130 chromoly. The design began to go through various stages and modifications. Throughout the design stages we worked with our team leader to coordinate the acquisition of equipment and tools that would be necessary for final construction. Initially the frame was very basic in design with no complex geometry. After several discussions with other team members the frame began to change shape. The initial ideas and concepts for the steering, suspension, and drive train led us into a design that was very different from last year. After several team meetings we identified the necessary requirements from the other sub-teams that are imperative to the design of the frame and roll cage. Once a final design was chosen we performed FEA analysis to verify that the frame would not undergo excessive stress at any one location from common forces that it would experience during the competition. Upon receiving the raw material for the final construction of the frame we began to make plans and drawings for the final construction. After the initial construction site was prepared we along with other team members began construction for the final design. Ted Walker, Ryan Walker, and Kevin Hughes have been performing most of the welding necessary for construction. Currently we are still in constructions stages and we hope to finalize construction and conduct preliminary tests before the competition so that we will be able to participate.