Guitar Support

Overview
A Senior Capstone Design group was paired with Dr. Jonathan Gangi, Director of Arts Entrepreneurship in the Penn State College of Arts and Architecture, to provide him with a new guitar support. Specific to playing a classical guitar, the problem Dr. Gangi faces is where to place his guitar while he plays to obtain proper and comfortable support, while also maintaining a secure and safe hold on his guitar. Students were to design a more ergonomic guitar support that fit Dr. Gangi while keeping the support as minimalistic as possible.

Objectives
Design a guitar support that is both ergonomic and minimalistic that fits the needs of a classical guitarist by allowing the upper bough of the guitar to be supported.

Approach
- Met with Dr. Gangi to learn about the project and what he was looking for
- Came up with four different design potentials for Dr. Gangi to choose from in CAD
- Once Dr. Gangi chose a design to move forward with, adjustments were made on the design
- Measurements were taken to accurately build model in CAD
- First prototype was built out of cardboard to show initial design
- Modifications to prototype were reflected in CAD
- First metal support was prototyped by outsourcing
- Measurements were tweaked on CAD file to properly fit Dr. Gangi
- A guitar cushion was purchased to be fit for the top of the support where guitar would rest
- Final prototype was outsourced and built at Engineering Services
- Cushion was sized down to match guitar bough shape and fit neatly under guitar
- Guitar support was painted
- Cushion was attached to the guitar support

Outcomes
Final prototype was formally presented to Dr. Gangi at Engineering Showcase. The final design and prototype features:
- Minimalistic and ergonomic design; both feet of guitarist stay on the ground, back is not twisted
- Curved neck which fits around guitarist’s thigh so stand is mostly hidden
- Non-slip cushion that will not harm guitar’s finish
- Steel frame
- Four legs for support
- Adjustability modifications and suggestions in final CAD model