













ME496: Senior Design Project
Final Presentations (Part 1 of 2)
Tuesday, December 3, 2024
Room: EMS E250

AGENDA		
Time	Project & Team Members	Sponsor
2:15 PM - 2:30 PM	 COFFEE & SWEETS	
2:30 PM - 3:00 PM	<p>NOISE (DB) REDUCTION OF MAIN GRINDER AREA</p> <p><i>Reduce the main grinder area's noise levels to keep the operator's 8-hour Time Weighted Average below OSHA's 90 dB limit, without affecting throughput. This will improve working conditions in Hampel's thermoforming process.</i></p> <p>SIMON DIFFENBAUGH, XENG LOR, DELVIN THAO, ALEXANDER WIGGINS</p>	<p>HAMPEL CORP.</p> 
3:00 PM - 3:30 PM	<p>ENGINE HOSE SIMULATOR</p> <p><i>Develop test equipment to simulate real-world conditions by adjusting the temperature and pressure of fluids flowing through engine hoses. This will allow accurate testing of HellermannTyton mechanical mounts used in vehicle engine hose systems.</i></p> <p>ALEKSANDAR ANDRIC, JOVICA KOJIC, SCOTT LAMOTHE, JD PETERSON</p>	<p>HELLERMANN TYTON NORTH AMERICA</p> 
3:30 PM - 4:00 PM	<p>UNIVERSAL EPOXY DISPENSER</p> <p><i>Automate the potting process for AC and DC industrial brakes to reduce cycle time from 95 to 75 seconds and ensure consistent epoxy distribution according to specifications. The solution must meet safety, ergonomic requirements, and stay within prototype budget.</i></p> <p>LUCAS GOELZER, DYLAN HOVEY, JACOB PAVLETICH, NICHOLAS THAMMAVONGSA</p>	<p>REGAL REXNORD</p> 
4:00 PM - 4:30 PM	<p>TRADE SHOW MECHANICAL PUZZLE BOX</p> <p><i>Design an eye-catching mechanical puzzle box for trade shows using additive manufacturing. The box will feature locks, compartments, and interactive puzzles based on mechanical principles like hinges, levers, and gears, showcasing the benefits of 3D printing and design for additive manufacturing.</i></p> <p>LILLY HERBST, JOE KEBIS, KENJEE LUANGKHOT, AMAN MALKANI</p>	<p>3D PARTS UNLIMITED</p> 
4:30 PM - 5:00 PM	<p>AIRCRAFT OIL TANK</p> <p><i>Design a lightweight, efficient oil tank for Deltahawk's diesel aircraft engines that meets FAA requirements, separates air from aerated oil, holds 6 quarts, and withstands 9g forward and 6g downward forces, while adhering to budget limits.</i></p> <p>GILES GROWS, MATTHEW MEDEMA, JOHN PEMBROKE, MICHAEL SERRA</p>	<p>DELTAHAWK ENGINES</p> 
5:00 PM - 5:30 PM	 PIZZA	

ME496: Senior Design Project
Final Presentations (Part 2 of 2)
Thursday, December 5, 2024
Room: EMS E250

AGENDA		
Time	Project & Team Members	Sponsor
2:15 PM - 2:30 PM	 COFFEE & SWEETS	
2:30 PM - 3:00 PM	<p>SHEETER SYSTEM FOR MACHINE 8</p> <p><i>Evaluate alternative systems for sheet alignment in Hampel's heavy gauge thermoforming process. The current loading system fails to accommodate variations in sheet sizes, leading to scrap parts and fire hazards. This project aims to account for variations in sheet sizes during the loading process.</i></p> <p>DAVID ADEGBAMI, DYLAN HALL, TRI NGUYEN</p>	<p>HAMPEL CORP.</p> 
3:00 PM - 3:30 PM	<p>SOCCER GOALS FIXED AND CASTER WHEEL MOUNT HOUSING</p> <p><i>Redesign the mount housing for caster wheels on soccer goal backbars to enhance user safety. The current design requires a pad to prevent injuries, but the goal is to create a common housing that eliminates the need for this pad. This redesign will improve safety and simplify the assembly process.</i></p> <p>NICHOLAS KLENNER, JACK MIRALRIO, JARRED NELSON, JAY PUROHIT</p>	<p>KEEPER GOALS</p> 
3:30 PM - 4:00 PM	<p>DEMOLDING FIXTURE REDESIGN</p> <p><i>Design a fixture for separating mold halves used in casting polyurethane industrial couplings. The current process, which uses a rotating fixture and hydraulic lift table, poses safety risks and can lead to operator fatigue. The new fixture will improve safety, ergonomics, ease of use, and reliability.</i></p> <p>DYLAN ENGELBRIGHT, ADRIAN SANCHEZ, VINCE SWARTZ, JOSIAH WELCH</p>	<p>REGAL REXNORD</p> 
4:00 PM - 4:30 PM	 PIZZA	