Western Engineering

MME 4499 – Mechanical Engineering Capstone Project Proposal Document

Name of Sponsor	Schaeffler Canada Inc.
Title of Project	
Size Sorting of Ball Bearings	
Brief Project Description	
Assembly process uses steel and ceramic balls to assemble deep groove ball bearings, with balls being sorted into 2um bins from a set nominal size (ex. 8mm with bins of -6, -4, -2, 0, +2, +4, and +6 um). During production, bearings may be disassembled for quality verification or process trials and can result in an assortment of balls with the same nominal size, but a mix of the micron bins. Project is to identify/ create a method to sort assorted balls back into 2um bins so that they may be reused in the assembly process. Solution may result in selection of a pre-existing machine/ system, or can be a team-designed solution, but must accommodate full range of nominal ball sizes (6mm-16mm).	
Desired Project Deliverables	
• Selection of method/ system to sort balls into 2um bins as per specified constraints and targets. • Report describing how selected method will meet specified constraints and targets. • QCD report of method with respects to functionality and budget. • Implementation plan for procurement/ fabrication of selected system, and any key information or contact details that would be relevant for Schaeffler Canada Inc. to order and install such system after completion of this capstone project. • If solution is team designed, a functional prototype with detailed description of how it will be scaled to full production and accommodate all nominal ball sizes.	