



Company Information

Company Name	<i>Electrolux</i>	Date Submitted	<i>9/8/2023</i>
Project Title	<i>Innovating Graywater Composition Methodologies for Dishwashers (ELEC_GRAY)</i>	Planned Starting Semester	<i>Spring 2024</i>

Senior Design Project Description

Personnel

Typical teams will have 4-6 students, with engineering disciplines assigned based on the anticipated Scope of the Project.

Please provide your estimate of staffing in the below table. The Senior Design Committee will adjust as appropriate based on scope and discipline skills.

Discipline	Number	Discipline	Number
Mechanical	3	Electrical	1
Computer	1	Systems	

Company and Project Overview:

Electrolux shapes living for the better by reinventing taste, care, and wellbeing experiences, making life more enjoyable and sustainable for millions of people. As a leading global appliance company, we place the consumer at the heart of everything we do. Through our brands, including Electrolux, AEG, Anova, Frigidaire, Westinghouse and Zanussi, we sell more than 60 million household and professional products in more than 150 markets every year. Electrolux has been doing business since 1919. The global headquarter is in Stockholm, Sweden and its North American headquarter is in Charlotte, NC. The following products are sold in North America under the Electrolux and Frigidaire brand.



Project Requirements:

This project will focus on designing a methodology for analyzing the makeup of graywater from a dishwasher. Graywater is the effluent stream leaving the dishwasher after a cleaning cycle. Having a better understanding of the graywater effluent could help engineers design more effective dishwasher products. Currently there is no method for optimizing cycles for specific soils within the dishwasher. The aim of this project is to develop a test apparatus that can isolate certain particulates (fats, starches, etc.) within the graywater and then classifying them as such. The apparatus would have to accommodate various types of graywater streams and identify the contents of each stream. This information would then be utilized in the future to develop custom wash cycle configurations to optimize results.

Expected Deliverables/Results:

Design Requirements:

- Develop test fixture for analyzing various graywater streams. Apparatus to:
 - o Determine common particulates in dishwasher wastewater (fats, starches, etc.)
 - o Develop a methodology for identifying the particulates, consider size of particulates
 - o Classify particulates based on physical properties (e.g., wavelengths)
- Provide accurate repeatability of the methodology and classification.
- Provide operations and maintenance manual for apparatus

Disposition of Deliverables at the End of the Project:

Students are graded based on their display and presentation of their team's work product. It is mandatory that they exhibit at the Expo, so if the work product was tested at the supporter's location, it must be returned to campus for the Expo. After the expo, the team and supporter should arrange the handover of the work product to the industry supporter. This handover must be concluded within 7 days of the Expo.



List here any specific skills, requirements, specific courses, knowledge needed or suggested (if none please state none):

- Travel to Electrolux test center in Charlotte as required