Eco-Bot Project Proposal

**Objective:** For this competition, we will create a robot which can navigate an environment using on-board sensors. It will be able to collect garbage, differentiating between organic and inorganic material and storing them in separate containers.

**Time commitment:** The full group will meet in person once a week for 2-3 hours, and will participate in online meetings as needed. Group members will work alone or in small groups on the various sub-tasks.

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| **Project Timeline** | | |
| **September** | **October** | **November** |
| * Finish project proposal * Research and brainstorm ideas | * Draft 3D model * Electronic schematics * 1st prototype (chassis) * Decide upon organic-inorganic differentiation method | * Working mechanical prototype * Sensor testing with different materials |
| **December** | **January** | **February** |
| * Sensor implementation * System testing and improvement | * Systems finalization * Combine all systems into complete product * Integration testing | * Prepare for presentation * Troubleshooting and finalizing * Usability and user interface |

**Preliminary ideas for organic/inorganic differentiation**

1. Use machine learning to differentiate images of objects
2. Test object for conductivity
3. Test object for moisture

**Subsystems**

Mechanical - Chassis/Movement/Object Collection

Systems - Sensors/Sensor Control/Mechanical Control/Remote Communication

Software - Object Differentiation/Decision Making

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| **Team Roster** | | | | | |
| **Name** | **Student ID** | **Phone #** | **Program** | **SFU Email** | **Subsystem** |
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