**SENIOR DESIGN – 2018-19**

**Project Qualification Form**

**The following students:**

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| --- | --- | --- | --- |
| **Member Name and email[[1]](#footnote-2)** | **Program[[2]](#footnote-3)** | **Student ID** | **Signature (real in ink, digital, Acrobat, or attached email are all acceptable)** |
| Steven Ngan, sjn36@drexel.edu | ECE, Electrical Engineering | 13589910 |  |
| Yoshin Govender, yg353@drexel.edu | ECE, Electrical Engineering | 13634935 |  |
| Anthony Santoro, acs385@drexel.edu | ECE,  Electrical Engineering | 13058573 |  |
| MIchael Barnes  Mrb372@drexel.edu | ECE, Electrical Engineering | 13520499 |  |

**Request approval of a Senior Design Project entitled:**

|  |
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| **Self-Automated Violin Tuner** |

**Advisors**

|  |  |  |  |
| --- | --- | --- | --- |
| **Primary Advisor and email** | **Affiliation** | **Signature** | **Date** |
|  |  |  |  |
| **Co-Advisors** | **Affiliation** | **Signature** | **Date** |
|  |  |  |  |
|  |  |  |  |

1. **Description of the proposed project (one paragraph):**

The project will be a self-automated violin fine tuner that will tune each string of a violin to its intended pitch more quickly and more accurately than a human can. This tuner will recognize the intended note (via frequency in Hz) one is trying to tune to, and physically move the fine-tuners that are located on its tailpiece to the appropriate positions.

**2. List the following (bullet points for each):**

1. **Objectives**

* To design and create a self-automated violin fine tuner that is projected towards younger beginner violinists or other string musicians.
* This tuner will be simple for younger students to use. It will be a handheld device that will be used across different stringed instruments. (Violin, Viola, Cello)

**B) Design Elements**

* Lightweight
* Different tuning profiles to suit multiple stringed instruments. (Strings: G, D, A, E for Violins and C, G, D, A for Viola, Cello, Bass instruments, etc.)
* Can work accurately in a loud environment
* Will cease adjustments if the tuner screw is used up via torque control
* Delicate to all violins so no potential scratching

**C) Measures of Success**

* Speed
* Accuracy
* Usability and convenience

**D) Deliverables – (all possible technical for this project)**

* The device itself
* A full, technical evaluation of its capabilities
* A field test and demonstration
* A review of the prototyping stages

**3. What is your decision methodology (one paragraph)?**

The device will be designed through a requirements-forward methodology. We will start by determining the end-product features that we want and rank them by importance. Then, we will develop a task tree for each to figure out which are needed, and which can be done in the time frame that we have.

**4. Funding**

**A) How much do you estimate the project will cost?**

* $500.00

1. **Do you have any sources of funding already lined up? (for example, faculty advisor research funding, or company sponsorship)**

No.

1. Groups requesting to have more than 4 members must supply a written letter of justification signed by their advisor [↑](#footnote-ref-2)
2. Here “Program” refers to EE, CE, MEM, etc. [↑](#footnote-ref-3)