**ELG4139** Journaling the Design/Build Project

Based on **CDIO(R)**

Conceive-Design-Implement-Operate-**Recreate**

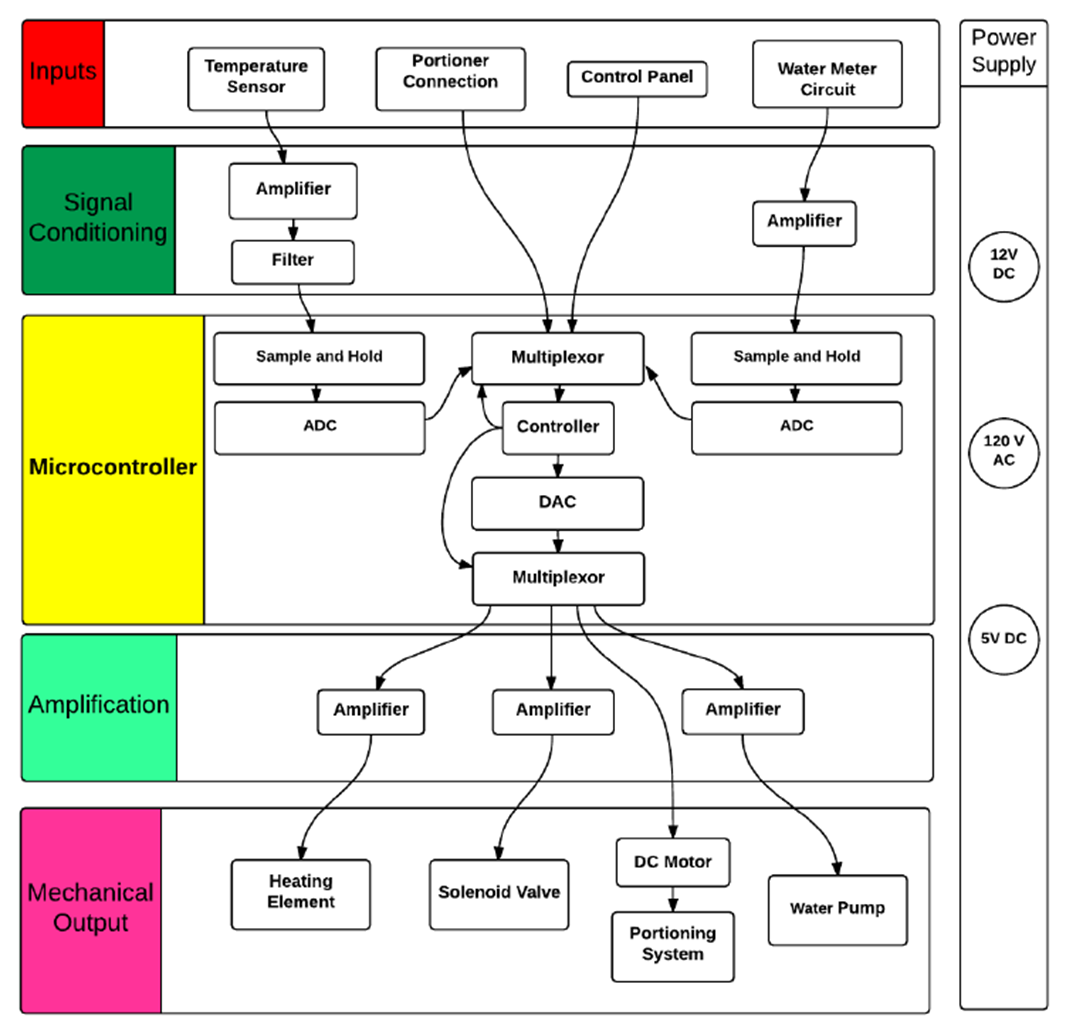
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| --- | --- |
| Student 1 Name/Number |  |
| Student 2 Name/Number |  |

**TA:**

This journaling document contains several tasks related to the ELG3336 project. Each task will be submitted and graded individually and according to the dates indicated. You may include figures, pictures, graphs, simulation work, BUT minimum text.

**A Typical “Whole” Mechatronics System**

This block diagram describes the building blocks of a particular project therefore; it should be used as a guide only when you draw the block diagram of your project



**Project Proposal Submission 1: Conceive (5 marks)**

**(October 1, 2019)**

**Proposed Title of the Project:**

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**Mechanical Engineering Team:**

|  |  |
| --- | --- |
| **Name** | **Email** |
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**TA Supervisor:**

|  |  |
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| **Name** | **Email** |
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Engineering design is the application of math, science and engineering principles to the creation and development of systems components and processes.

**Project Details and Brief Design**

**Problem Statement**

Clearly and concisely identify the problem.

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**Design Build Statement**

The design statement is challenging; it is about taking action to address the need and to solve the problem. It must specify the degree to which you will carry out the solution. The design statement may also contain an underlying theme or very important constraint.

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**Constraints**

These are guidelines that must be followed. Examples include time, budget, aesthetics, codes, safety, and physical attributes.

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| 5 |  |
| 6 |  |
| 7 |  |

**Generated Concept**

Brainstorming and preliminary sketches

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| --- | --- |
| **Item** | **YES or NO** |
| Prototype |  |
| Presentation |  |
| Demonstration of Prototype |  |
| Video |  |

**Required Facilities**

|  |  |
| --- | --- |
| **1** |  |
| **2** |  |
| **3** |  |
| **4** |  |

**Knowledge Areas and Simulation Tools Needed for Project**

|  |  |
| --- | --- |
| **1** |  |
| **2** |  |
| **3** |  |
| **4** |  |

**Estimated Budget**

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| --- | --- |
| **Item** | **Cost** |
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**Submission 2: Design (5 marks)**

**(November 1, 2019)**

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| Write a brief statement that describes your project.  Draw a block diagram that clearly describes the project you are building.  Write the specifications of the sensor(s) and microcontroller used in the project.  Design suitable amplifier, filter, multiplexer, analog to digital converter although these circuits may exist in the Arduino. Determine the design criteria and draw the corresponding circuits.  **Design Criteria:**   * **What** exactly is the context and scale of the problem? * **How** to solve the problem? * **Why** your approach is the right one? * Always pay attention to the **Quality** of presentation in terms of effectiveness, tools, and questions answered. |

**Demonstration and Submission 3: Implement (5 marks)**

**(December 1, 2019)**

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**Exhibition and Submission 4: Operate (5 marks)**

**(December 15, 2019)**

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**Exhibition and Submission 5: Recreate (10 marks)**

**(December 15, 2019)**

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