|  |  |
| --- | --- |
|  | **Technological University of the Philippines**  **Taguig Campus**  Km. 14 East Service Rd. Western Bicutan, Taguig City    The Technological University of the Philippines shall be a premiere state university with recognized excellence in engineering and technology education at par with the leading universities in the ASEAN region. |

**TLE9-T: TEACHING COMMON COMPETENCIES IN AGRICULTURE AND FISHERIES ARTS**

*The main outcome of our course is to create and design and develop a project that conforms to our subject: TEACHING* COMMON COMPETENCIES IN AGRICULTURE AND FISHERIES ARTS

***AQUAPONICS***

**Project Title:** Aquality

**Project Description:**

Aquality is derived from the word aqua, which means water, and the word quality, which means a fine product. This project aims to produce high-quality fish and plants and our goal is to provide a sustainable source of product for small spaces that only uses the materials available.

The Aquaponics system is a farming method that which both plants and fish benefits each other. The purpose of the aquaponics system is to provide environmentally sustainable plant growth. All the advantages of the aquaponics system are received by the plants. Plants will filter the waste of the water that came from the fish to clean the water when it goes back to the fish tank.

The process of aquaponics is to supply fresh water to the fish and the waste produced by the fish will be the main source of nutrients for the plants then the plants will filter the nutrients from the water back to the fish. By the use of nitrification method, the waste of the fish transforms to give nutrients to the plants.

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DETAILED PRODUCT DESIGN:

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**Detailed Product Design:**

1. **Bill of Materials:**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **#** | **Material** | **Specification** | **Unit Cost** | **Quantity** | **Total Amount** |
| 1 | Aquarium set | Aquarium, pump, pebbles | 2500 |  | 2500 |
| 2 | Wood |  | 650 |  | 650 |
| 3 | Wood Screw |  | 100 | 1/4 | 100 |
| 4 | Nails |  | 100 | 1/4 | 100 |
| 5 | Wood glue |  | 100 |  | 100 |
| 6 | Koi |  | 150 | 4 pcs | 600 |
| 7 | Aquarium plant |  | 30 | 5 pcs | 150 |
| 8 | Pipe |  | 95 | 2 pcs | 190 |
| 9 | Adaptor | male | 50 | 2 pcs | 100 |
| 10 | Vulcaseal |  | 150 |  | 150 |
| 11 | Container |  | 300 |  | 300 |
| 12 | Gravel |  | 250 | 1/2 sack | 250 |
|  |  |  |  |  | **Total: 5190** |
| **5190/13 = 400 each** | | | | | |

1. **Project Production Process:**

Diagram

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1. **Tools and Equipment:**

* Saw
* Drill
* Nails
* Hammer