

# Build-a-Bot 3.0

## PARSEC 6.0

24–25 January 2026

Indian Institute of Technology Dharwad

### Official Parts Catalogue, Virtual Costs, and Competition Guidelines

#### Purpose of this Document

This document provides the **official list of components**, their corresponding **virtual costs**, and the **mandatory rules** applicable to all teams participating in **Build-a-Bot 3.0** under **Techfest PARSEC 6.0**. All teams must strictly adhere to the items, pricing, and regulations stated herein.

#### 1 About the Event

Build-a-Bot 3.0 uses a virtual economy system to ensure fairness, creativity, and resource optimization during the build phase. Each team is provided with a fixed amount of virtual currency, termed **Galleons**, which they can spend at the event's **Item Shop**. The shop contains all approved electronic and mechanical components, each assigned a virtual cost. Teams must plan, budget, and purchase components strategically while staying within their allotted Galleons. The goal is to design an effective solution using limited resources, rewarding both engineering efficiency and cost-conscious design. Unspent Galleons contribute positively to the team's final score.

#### Team Budget

- **Starting Budget:** Each team begins with **25 Galleons**.
- **Unused Budget:** Any remaining Galleons at the end of the build phase will positively contribute to the team's final score.
- Teams are **NOT** allowed to expend more than 25 Galleons on parts, ie. No additional currency shall be provided

#### Parts and Virtual Cost List

##### Base Kit (Provided Once Per Team)

Item	Description	Cost (Galleons)
Base Kit	Foam board, jumper wires, breadboard, adhesive, basic cutting tools, and USB 5V breakout	0

## Common Extra Components

Item	Description	Cost (Galleons)
Foam Board (extra)	Single foam board sheet	2
Breadboard (extra)	Standard solderless breadboard	2
Jumper Wire Pack	Mixed jumper wires	1
Adhesive (extra)	Cyanoacrylate glue	1
Replacement Cutter Blade	Spare blade for cutting tools	1
USB 5V Breakout Board	Power breakout module	1

## Microcontrollers

Item	Description	Cost (Galleons)
Arduino Nano	Entry-level microcontroller suitable for simple logic control	4
ESP32	High-performance microcontroller with advanced I/O	7
ESP32-CAM (Junior PS only)	Camera-enabled module for vision-based tracking	0

## Motors and Actuators

Item	Description	Cost (Galleons)
BO DC Motor	Open-loop DC motor with uncontrolled rotation	2
SG90 Micro Servo	Low-cost positional servo	3
28BYJ-48 Stepper + ULN2003 Driver	Stepper motor bundled with its driver	4
MG995 Metal Gear Servo	High-torque metal-gear servo motor	7

## Mechanical Components

Item	Description	Cost (Galleons)
Wooden Scale / Strip	Structural guide element or support shaft	1
Thread / Fishing Line	Flexible transmission or actuation element	1
Large-Tooth 3D Printed Gear	Optional mechanical transmission component	2
Rubber Strip (raw)	High-friction strip for gripping or traction	1
Rubber Band	Compliance, tensioning, or spring element	1

## Consumables (Provided)

Item	Description	Cost (Galleons)
A5 Paper Sheet	Standard drawing or testing surface	0
Standard Pen	Pen for Senior PS drawing tasks	0

## Competition Guidelines and Rules

### Prerequisites

- All Teams must submit a detailed Bill of Materials (BOM) before commencing their build on this Form. Before 20th Jan, 2026 This is done for minimizing loss of time.  
<https://forms.gle/QpS1Tr8QVzmLfGNKA>
- All components intended for use must be listed clearly in the BOM.
- Teams **MUST** pay a upfront refundable security deposit of Rs 1300, after which they will be handed over components to start building. Damages may be deducted from this deposit; the remainder will be refunded post-event after returning and verification of parts.
- Teams may bring additional components, subject to compliance with the rules given below. To submit a custom part for approval, **it is mandatory** fill this Form. Deadline for it is 22nd January 2026.  
<https://forms.gle/2VHRk1xFEDCXUbY58>
- Only custom parts submitted through the above form will be considered for approval.

## 2 Bring Your Own Part(s) Rules

### Mechanical Rules

- Participants may bring **static, non-moving** mechanical components, subject to organizer approval. Any component that forms part of a moving mechanism, even if disassembled, is not permitted.
- **Preassembled or commercially built mechanisms are strictly prohibited.**
- Custom 3D printed parts are allowed given the part fits the criterias of rulebook.
- All mechanical assemblies must be constructed during the event using allowed components.
- Custom mechanical parts brought by teams are subject to approval from organizers.

### Electronics Rules

- External electronic parts are explicitly **NOT** allowed in any form or shape

### Safety and Authority

- Unsafe designs or implementations may be halted at any time by the organizers.
- The decision of the organizing committee shall be final and binding.

## **2.1 Contact Us**

- **Email:** *outreach.parsec@iitdh.ac.in*
- Note: Please mention Build-a-Bot 3.0 in subject line so email gets routed to concerned team.

*Issued by the Build-a-Bot 3.0 Organizing Committee  
Techfest PARSEC 6.0*