



## **MEMORANDUM OF UNDERSTANDING**

**BETWEEN**

**JSPM's Rajarshi Shahu College of Engineering, Pune**

**And**

**IndiaFIRST® Robotics Innovation and Research LLP, Pune**

**For**

**Skill Development of Engineering Students for better employment opportunities**



### 1.1 Context

This **MEMORANDUM OF UNDERSTANDING** (MOU) is hereby entered into on date 1<sup>st</sup> December 2019 by and between **IndiaFIRST® ROBOTICS INNOVATION AND RESEARCH LLP, Pune**, Here in after referred to as **IndiaFIRST® ROBOTICS (IFR)**

and

**JSPM's Rajarshi Shahu College of Engineering, Pune, India**, Herein after referred to as **JSPM RSCOE** collectively all signatories of this MOU will be known as the cooperators.

### 1.2 Purpose

The purpose of this MOU is to formalize a relationship between the aforementioned institute, agencies and organizations for the purpose of cooperating in providing training and educational information and to facilitate the development of students towards Industry Readiness. Train them for participation in various competitions. Below are the activities to be included in this MOU:

- a. Robotics & Automation Courses
- b. Workshops/Seminars
- c. Robotics Competitions
- d. Setting Up Innovation Labs
- e. Professional Project Internship

### 1.3 Objective

The objective of this MOU is to deliver training to:

**JSPM's Rajarshi Shahu College of Engineering, Pune ,India**, on **Robotics & Automation** and conducting Trainings/Workshops/Seminars and Conducting Professional Project Internship Program throughout the year. This training program for **JSPM RSCOE** covers the topics finalized between the two organizations copy of which, with signatures of both parties is enclosed herewith as per **Annexure I**.



#### 1.4 IndiaFIRST® ROBOTICS and JSPM RSCOE agree to

1. **JSPM RSCOE** shall provide the students from Mechanical, ENTC, CS, IT & EE Department for undergoing training and infrastructure/material for delivering the classroom session and lab session.
2. IFR Shall set up a robotics, IOT & Embedded Systems Lab at its own cost at JSPM's RSCOE Mechanical Department, Tathwade as per the attended list in **Annexure II.**
3. **IndiaFIRST® ROBOTICS** shall provide competent trainers for conducting Training/ Workshops/Seminars.

##### 1.4.1 Commencement / Expiration / Termination

This MOU takes effect upon the signature of the Cooperators and shall remain in effect for this course from the date of execution. This MOU may be extended or amended upon written request of any of the Cooperators and subsequent written concurrence of the others. Any of the Cooperators may terminate this MOU with a 30 day written notice to the others.

Upon Termination of the said MOU, for any reasons,

1. IFR shall complete all the pending trainings / workshops / seminars / projects as agreed upon previously.
2. All the payments due to IFR shall be collected and accordingly the works shall be completed by IFR and both the parties shall cooperate with each other for smooth functioning and complete the pending works for the benefit of the students.
3. IFR shall take back their Lab equipments as invested by IFR without any hindrance and both the parties shall cooperate with each other for the same.

##### 1.4.2 Course Duration and Timeslot

Course/Workshops shall be conducted as per the attached **Annexure-I**, depending upon mutually agreed duration and fees per student.

IFR faculties shall conduct such training as per the timeslots agreed upon.

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### 1.4.3 Methodology

**IndiaFIRST® ROBOTICS** shall deploy its trainers to conduct Theory and Lab sessions.

JSPM's RSCOE shall cooperate to make the computer lab available for the training programs on various software's such as Tableau, Python, Image Processing, etc.

### Feedback

The training agency may take feedback of the participants as and when they feel necessary. **JSPM RSCOE** will take feedback from students on regular basis and will inform the trainers about outcome of the feedback. The suggestions evolved out of this feedback will be implemented by the trainers.

### 1.4.4 Industry Projects

**JSPM RSCOE** shall direct its students to choose the Projects in consultation with **IndiaFIRST® ROBOTICS** and their respective HOD's. Material and guidance for the Project shall be provided by **IndiaFIRST® ROBOTICS** at mutually agreed cost.

### 1.4.5 Industry visit

Student's batches will be mutually scheduled to IFR Corporate Office for Industry visits and Industry oriented trainings.

### 1.4.6 Internship

Internship for students will be mutually decided and students may take up internships at IFR Corporate office.

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## 2.1 It is mutually agreed and understood by all parties that:

Both the parties will work on content plan enclosed to be delivered to students as part of this MOU. The course contents (syllabus) of these courses/workshops/seminars etc. are attached along with as **Annexure – I**

## 2.2 PRINCIPAL CONTACTS

The Principal contacts for this Course are:

Name	Contact Number and Address
Dr. Avinash Badhade HOD, Mechanical Engineering	<b>JSPM's Rajarshi Shahu College of Engineering, Pune</b> Pune-Mumbai Highway, Tathawde, Pune 411033 Phone- 020-22933423 Email- ambadadhe_mechrscoe@jspm.edu.in
Mr. Vinay Kunwar Founder Director IndiaFIRST Robotics	IndiaFIRST-FOURTECH House, S. No. 149/1 A, Plot No.4, Behind Mr. Veg Restaurant, ITI Road, Parihar Chowk, Aundh, Pune 411 007 Email: vinaykumar@indiafirstrobotics.com Mobile: 844 67 67 555

**3.1** INDIAFIRST® ROBOTICS has agreed to invest to set up the robotics lab at its own expenses. The lab equipment set up by INDIAFIRST® ROBOTICS shall be always be ownership of INDIAFIRST® ROBOTICS. JSPM RSCOE, Tathwade shall not claim to be the owner of the equipment for any reason whatsoever. The list of the equipments is as per **Annexure – II**.


**3.2** IFR shall be at the liberty to change / replace or take back its rightfully owned robot, kits & equipment as it seems fit.

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#### 4. Payment Terms:

- 4.1.1 Fees for the Seminars/Workshops/Projects per student shall be collected by **IndiaFIRST® ROBOTICS**.
- 4.1.2 College has agreed not to claim any share in the fees.

  
**Vinay Kunwar**  
**INDIAFIRST ROBOTICS**  
**Director**



  
**Dr. R.K Jain**  
**JSPM RSCOE**  
**Principal**

**PRINCIPAL**

Jayawant Shikshan Prasarak Mandali  
Rajarshi Shahu College of Engineering  
Tathawade, Pune-411 033



**(Witness)**

**Vasanti Dalvi**  
**Sr. Manager- BD**  
**IFR, Aundh, Pune**



**(Witness)**

**Dr. A.M. Badadhe**  
**HoD- Mech Department**  
**RSCOE, Tathwade, Pune**

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## ANNEXURE I

### LIST OF COURSES

LIST OF COURSES		
Sr.No.	Course Title	Syllabus Overview
1)	<b>Application building with Desktop Robotic Arm</b>	Industry Automation
		Industry 4.0
		learning about Robotic arm
		Controlling the Robotic arm
		Programming the robotic arm
		Pneumatics and Electric grippers
		Pick and Place application building
		Sketching with robotic arm
		3D printing with Robotic Arm
		Laser Engraving with robotic arm
2)	<b>3D CAD Modeling and Additive Manufacturing</b>	Concept of Biped Robot
		3D Printing
		Designing a 3D Model
		Biped Robot Assembly
		Biped Robot Programming
3)	<b>Embedded Application Development</b>	Display Interfacing:
		Indicator Device interfacing:

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		On Board RTC Interfacing
		Use of Power Port
		Relay Interfacing
		Connectivity Standard IEEE 802.11:
		On Board Sensors Interfacing
		Keypad Interfacing
		Type of Data Bus Interfacing
		On Board Motor Driver Interfacing
		Use of GPIO Pins
4)	IoT Application Development	Introduction to the Internet of Thing
		The Arduino Platform
		Reading from Sensors
		Programming fundamentals (C language)
		Arduino Programming & Interface of Sensors
5)	Humanoid Robot	Getting Started
		Choosing a Robotic Platform
		Making Sense of Actuators
		Understanding Microcontrollers
		Choosing a Motor Controller
		Controlling your Robot
		Using Sensors
		Getting the Right Tools
		Assembling a Robot
		Programming a Robot





6)	Python Programming	An Overview of Python
		The python environment
		Getting Started
		Flow Control
		Array types
		Working with Files
		Dictionaries and Sets
		Functions
		Sorting
		Errors and Exception Handling
		Modules and Packages
		Regular Expressions
		Highlights of the Standard Library
		An Introduction to Python Classes
7)	Image Processing   Machine Vision	Filtering, Image Representations, and Texture Models.
		Color Vision.
		Multi-view Geometry.
		Projective Reconstruction.
		Bayesian Vision; Statistical Classifiers.
		Clustering & Segmentation; Voting Methods.
		Tracking and Density Propagation.
		Visual Surveillance and Activity Monitoring.
Medical Imaging.		



		Image Databases.
		Image-Based Rendering.
8)	Chat Bot Development	Bots 101
		Principles of Bot Design (Activity)
		Tools/Frameworks
		Microsoft Cognitive Services
		QnAMaker.AI
		Lab: Q&A Maker Walkthrough
		Lab: Training and Testing Q&A Maker
		Microsoft Bot Framework
		Mini-Project: Build Your Own Intelligent Bot
		9)
Mounting of Motors		
Prop Balancing		
Circuit Board mounting and Interfacing with peripherals		
Programming		
Connecting Drone with Smartphone		
Flying the Drone		



## ANNEXURE II

Equipement Name	Cost Per Unit	Quantity	Total
Robotic Arm- M1 With Accessories	567851	1	567851
Robot Arm - Dobot Magician Educational	157289	1	157289
3D Printer - Dreamer NX with Accessories	119600	1	119600
<b>Embedded &amp; IoT LAB Kit</b>			
DTMF Robot Kit	4661	3	13983
Bluetooth Robot kit	4661	3	13983
Gesture Controlled Kit	5508	3	16524
Test and Measurement Tools	4500	2	5000
Display Kit	2500	2	5000
Tool kits, Accessories and Consumables	7500	1	15000
Basic Electronics Kit	4500	2	9000
<b>Automation Setup</b>			
Conveyor Belt system Kit for Dobot Magician	69000	1	69000
<b>Drone</b>			
	5508	5	27540
<b>SUBTOTAL</b>	NA	NA	<b>1019770</b>
<b>GST 18%</b>	NA	NA	<b>183558</b>
<b>TOTAL</b>	NA	NA	<b>1203328</b>