



MOU FOR  
INDUSTRY ACADEMIA PARTNERSHIP

**JECRC COLLEGE, JAIPUR**

**&**

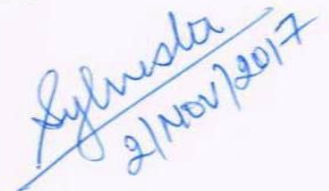
**FORSK TECHNOLOGIES**

**M5, STARTUP OASIS**

**SITAPURA, JAIPUR**

Dev. Centre : Forsk Technologies Private Limited, # M-5, Software Building, IT Park, Industrial Area EPIP, Sitapura, Jaipur-302022  
Regd. Office : A5 B, Prem Nagar II, Model Town, Malviya Nagar, Jaipur-302017, Rajasthan, India.  
Phone : +91-9414291932 Web : www.forsk.in Email : info@forsk.in

V.  2/11/17

 2/Nov/2017

## Introduction

This MoU is for industry and academia partnership for skill enhancement and improved industry engagement through flip classroom concept and focus on project work through hands on activities.

The objective of this MoU is to bring industry approach of solution development and product engineering to engineering candidates through project based learning backed by data and technology.

**To start with, Forsk will offer project based learning in IoT(Internet of Things) and Machine Learning (Data Science) to JECRC college students.**

**Future courses will be offered based on industry requirement and/or student/faculty feedback. These future courses will be on emerging technologies.**

A team of project managers and technical leads would be designing/customizing the course contents. A team of developers would be working with the participants (students) at ground level during the labs.

**Certificate will be issued to student after successful completion of the lab.**

## Why This Collaboration Is Needed

Currently there is no or limited exposure to industry practices during academic programs. Below are some of the highlights of the current scenario in academics.

- Course Composition: 60% Theory, 40% Practical
  - Theory is well handled, but lab part can be greatly enhanced with collaboration with industry to improve: **student's problem solving skills, coding and debugging skills and inculcate industry practices.**
- NASSCOM says only 10 – 20% of engineering graduates are employable.
- No/Less placements in core companies.
- Graduates need training after passing out to get a job.
- Bring new edge technologies and skills to candidates during their studies.
- Better placements and skilled students also improve the institute's reputation and attract better talent in form of students.

## Forsk Technologies: Past Experience

As a startup EdTech company, Forsk has achieved below milestones:

- Forsk founders have already worked with Samsung, Nokia, Wipro, Philips, TCS, Qualcomm, and Infosys to provide corporate training in the field of emerging technologies.

V. Deen

Sylvestre

- Already 1000+ students from SKIT, JU, JECRC, Poornima, NIITU, Manipal, MNIT and IIIT Kota graduated through Forsk's project based learning bootcamps.
- Forsk is conducting bootcamps on Python, IoT and Data Science to Manipal and IIITK students in current semester 2017 and getting overwhelming response from students and faculty.
- Last month, Forsk conducted an Android workshop in MNIT, Jaipur and was a huge success.
- Last month, Forsk has filed a patent for an IoT product that is being developed in-house.
- Forsk as an industry partner to institutes sets up "**Forsk Labs: Center for Project Based Learning in Emerging Technologies**" in campus to impart project-based learning and works as one stop shop for all industry related interfacing needed by institutes.
- In this setup, we ask students to bring their own laptops for learning; Forsk provides them access to content through its portal and installation of required tools and IDEs. The partner institutes provides basic services like Internet connectivity and power points etc.

## Pre-requisite Skills for Beginner's IoT Lab

The candidate should have engineering major in CSE/IT/ECE/EE. The candidate should have knowledge in C/C++ coding. Beginner's welcome!

## IoT Lab Details

Forsk Technologies would execute the IoT Lab.

Much of candidate's learning at the IoT lab will happen through hands-on working and building project modules.

Skills	Details
Electronics Basics	The candidates will know about how to read data sheet, analog and digital signals, serial communication, RF and sensors.
JSON/XML	The candidates would be able to write JSON/XML code based on the project requirements.
Database Basics	The candidates would know how to create database, tables and write SQL queries.
Programming on Development Boards	Understanding of the Arduino board, tool chain and development environment setup.
Sensors and Actuators	Understanding and using various analog, digital sensors.
Nodes and Gateways	Understanding usage of nodes and gateways for sensor communication and external communication.
Communication Protocols	RF, BT, WiFi and GSM

V. K. K. K.

Sylwata

IoT Cloud Platform	Using IoT Cloud Platforms, Python Script
Big Data Analytics	Mongo DB, Map Reduce, Using cloud APIs for analytics
Visualization	Graphical view of the data.

## Pre-requisite Skills for Beginner's Data Science Lab

The candidate should have engineering major in CSE/IT/ECE/EE. The candidate should have knowledge in C/C++ coding. Beginner's welcome!

## Data Science Lab Details

Forsk Technologies would execute the Data Science Lab. Much of candidate's learning at the lab will happen through demos, discussions and Code Challenges.

Skills	Details
Development environment setup and Python learning	Introduction To Data Science, Setting up the machine – Anaconda, Introduction to Python, List, Tuples, Dictionaries, List
Libraries for Data Preprocessing and Mathematical/Stats Operations	Python for DS, Scientific libraries - NumPy, SciPy, Matplotlib and Pandas
ETL Operations, Validation and Data Cleaning	Munging with Pandas, Reading data from different sources (excel, csv, database etc.), Imputation
Data Modeling	Dataframes ScikitLearn and Machine Learning
Supervised Learning	Regression, Classification, Confusion Matrix
Unsupervised Learning	Clustering Association
Web Scrapping	Using BeautifulSoup for scrapping the data
Project Work	15 code challenges with one major project

V. Keer

Sylwester

## Roles and Responsibilities

Following are the roles and responsibilities for the lab execution.

<b>FORSK TECHNOLOGIES</b>	<b>JECRC Foundation, JAIPUR</b>
Creation of the lab contents consisting of sub modules and assignments and give access to students through its portal (www.openedx.forsk.in).	Provide the lab infrastructure for the execution. This would include lab space, projector, Internet, power and cooling.
Project Manager from Forsk would be managing the entire lab execution and design the project framework/specs.	
Technical Lead from Forsk would be handling the design for sub modules/projects.	<b>Dr. Bhawna Sharma</b> from JECRC would be working as coordinator and single point of contact with Forsk team.
Engineers from Forsk would be deployed during lab sessions.	
Evaluate candidate's performance during lab sessions.	JECRC Foundation may use these parameters for their academic grading.
Forsk Technologies will generate a dossier post lab execution containing complete report of student's leanings and feedback.	

- All the rights of format and framework for this collaboration belong to Forsk Technologies.
- The content developed for this would be owned by Forsk Technologies and cannot be reused for future usage by JECRC College.
- JECRC College will also need to provide Lab with projector and Internet.
- JECRC College will also provide high-speed Internet facility for Forsk team during lab.

## Lab Execution

- JECRC shall provide a coordinating faculty for the execution of this lab, who will also work as a single point of contact with Forsk team.
- 25:1 mapping for candidates to industry resource provided by Forsk.

*V. K. K. K.*

*Sylwester*

## Fee

For the Lab execution, we estimate to have following cost for the program, which includes content development and lab execution for candidates.

There will be a Program Manager for this from Forsk Technologies, which will be single point of contact with JECRC.

A team of project managers and technical leads would be designing the lab contents. A team of developers would be assisting the candidates at ground level in the labs.

Sr. No.	Description	Cost
1.	Beginner's IoT Lab (30 Hours)	5500 INR
2.	Beginner's Data Science (Machine Learning) Lab (30 Hours)	5500 INR

\* Fee is inclusive of taxes.

## Revenue Share between JECRC and Forsk

- Forsk will share the 15% revenue to JECRC against infrastructure usage (mentioned in roles and responsibilities section above) to run course/courses after deduction of the taxes.
  - Sample Calculation, Fee without taxes =  $5500 - 990$  (GST) = 4510. So JECRC's Share would be  $15\% \times 4510 = 676 - 67.6$ (TDS) = 608 per student.
  - If the above discount needs to be passed to students directly in lieu to the university/college then the Fee would be  $5500 - 608 = 4900$ (rounding off)
- This collaboration is for next 3 years. However, as per the market scenario/content updates and the course Fees may be revised for future batches.
- Along with same lines, Forsk may bring new courses in future based on industry requirements (Cloud Computing, Analytics, AR/VR, AI, Mobile, Full stack Web Development etc.). These would be conducted with same format under the ambit of this MoU by adding an annexure/addendum to existing MoU for new courses with details of course content, fee and JECRC sharing/Student Discount.

## Terms & Payment Schedule

- Forsk will collect the fee from the students and JECRC would raise an invoice based on the number of students registered X 608 INR per student share.

FOR AND ON BEHALF OF  
**Forsk Technologies Private Ltd**  
 Signature

Name: **Dr. Sylvester Fernandes**  
 Designation: **Director**

FOR AND ON BEHALF OF  
**JECRC College, Jaipur**  
 Signature

Name: **Dr. Vinay Kumar Chandna**  
 Designation: **Principal**

## About Forsk Team

**Dr. Sylvester Fernandes, Co-Founder** has obtained his Doctorate in Computer Science (Cryptography), from J.N.V.U. He has a rich experience of 14 years in Application Development as well as deployment of mobile applications for the next generation of computing platforms.

Area of Expertise: Mobile and Wireless Application Development, Web Application Development, Product Engineering, Embedded Solutions and SmartOS Based Solutions.

Industry Verticals Served: Diamond & Jewellery, Manufacturing, Banking and Finance, Medical, Gaming and Petroleum.

**Yogendra Singh, Co-Founder** has several years of experience with leading mobility and mobile app development companies like Qualcomm, Mango and ZDRIVE. While working with these companies he has played strategic and key role in developing / launching hundreds of applications successfully.

Yogendra was part of the team that developed an application framework for low and mid-tier mobile devices that enables developers to quickly create customized mobile applications and user experience. This product was sold to Qualcomm Inc., world's largest semiconductor company.

Yogendra is bachelor of technology from Rajasthan University.

### Past Experience

