


# Bhaskaracharya College of Applied Sciences

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**BHASKARACHARYA COLLEGE OF APPLIED SCIENCES(BCAS,DU)**  
Sector 2, Phase 1, Dwarka, New Delhi-75.


**DEPARTMENT OF INSTRUMENTATION**  
In collaboration with  
**i3indya Technologies**

**Workshop on Vision Botics**  
(Sixth Sense Technology)  
**15th-16th March 2018**

Venue: Department of Instrumentation, BCAS

**HIGHLIGHTS OF THE COURSE :**  
Image Processing using MATLAB  
Wireless System Controlling  
Peripheral Interfacing  
Embedded Systems  
Microcontroller

**Register Now**



Teacher Coordinators :  
Dr. Geeta Bhatt  
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(8860223990)

Student Coordinators:  
Ankit Panchal  
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Gaurav Kumar  
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**Welcome Kit, Tea and Lunch will be provided to all the participants.**  
**Registration fee: Only Rs. 1500/- per participant.**

## DEPARTMENT OF INSTRUMENTATION

### Workshop on “Vision Botics (Sixth Sense Technology)” in collaboration with i3indya Technologies on 15-16 March 2018

<b>Program Schedule: DAY 1 (15<sup>th</sup> March 2018)</b>		
<b>SESSION</b>	<b>TOPIC</b>	<b>DURATION</b>
	<b>Tea</b>	<b>09:00 AM – 09:30 AM</b>
	<b>Inauguration</b>	09:30 AM – 10:30 AM
1.	<b>Introduction to Robotics</b> <ul style="list-style-type: none"><li>• Agenda of the workshop.</li><li>• Introduction to sixth sense technology.</li><li>• Introduction to Vision Botics.</li><li>• Introduction to microcontrollers.</li></ul>	10:30 AM – 01:30PM
	<b>Lunch Break</b>	<b>01:30 PM – 02:15 PM</b>
2.	<b>Basic practical exposure with interfacing peripherals</b> <ul style="list-style-type: none"><li>• Interfacing of LEDs and Buzzer with the microcontroller.</li><li>• Writing first program in Embedded C and dump on the chip.</li><li>• Different pattern of LED blinking.</li></ul> <b>Integrated Chips&amp; Actuators</b> <ul style="list-style-type: none"><li>• Wide description about Motors.</li><li>• Motor driver IC.</li><li>• Interfacing Motors with microcontrollers.</li></ul> <b>Development of Autonomous Robot.</b> <ul style="list-style-type: none"><li>• Differential drive mechanism of Robot.</li></ul> <b>Serial communication</b> <ul style="list-style-type: none"><li>• UART in microcontrollers.</li><li>• Accessing internal UART.</li><li>• Transferring data serially from PC to microcontroller.</li></ul>	02:15 PM – 05:15 PM

**Program Schedule: DAY 2 (16<sup>th</sup> March 2018)**

<b>SESSION</b>	<b>TOPIC</b>	<b>DURATION</b>
3.	<b>Bluetooth technology</b> <ul style="list-style-type: none"><li>• Wide description about Bluetooth devices.</li><li>• Glowing of LED wirelessly using Bluetooth of Laptop.</li><li>• Motor controlling wirelessly using Bluetooth of Laptop.</li><li>• Virtual serial port in android phones.</li></ul>	09:30 AM – 12:30 PM
	<b>Lunch Break</b>	<b>12:30 PM – 1:15 PM</b>
4.	<b>Image Processing Using MATLAB</b> <ul style="list-style-type: none"><li>• Introduction to image/vision/eye to the Robot.</li><li>• Image processing through MATLAB.</li><li>• Different color formats and their conversions.</li><li>• Calculation of B/W number of pixels.</li><li>• Traffic light controller using calculation of pixels.</li></ul>	01:15 PM – 3:15 PM
	<b>Tea Break</b>	<b>03:15 PM – 03:45 PM</b>
5	<b>Video Processing</b> <ul style="list-style-type: none"><li>• Interfacing cameras (more than one) in MATLAB.</li><li>• Identifying area of interest (color) in the image.</li><li>• Calculation of color pixels in the image.</li><li>• Blinking of LEDs using colors.</li><li>• Wearable colored gesture controlled Robot.</li><li>• Wearable colored gesture controlled P.C applications.</li><li>• Wearable colored gesture controlled web browsing.</li></ul>	03:45 PM – 05:15 PM