

## Department of Instrumentation and Control Innovative Teaching Method

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| <b>Class:</b>   | <b>BE Instrumentation and Control Engg.(Students present 23, feedback forms submitted by 18)</b> |
| <b>Name of Method:</b>  | <b>Learning from Industry Experts</b>  |
| <b>Learning Objective:</b><br>1. To demonstrate the use of RTOS applications.   |  |
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| <b>Outcomes:</b> On completion students were expected able to understand how real industrial problems are formulated and understand the use of hardware used in RTOS for imaging application.   |  |
| <b>Problems discussed at UV Knowledge Link Nashik:</b> Loading and Unloading of 1200 vehicles per day at a company. One vehicle in plant is for x minutes. Target is to reduce this time to y minutes. Solution 1: To poke driver to achieve time limit. When vehicle arrives : down time starts; horn starts after some time. Solution 2: Low power Bluetooth RTOS Device. Solution 3: Use of GPS Devices; bulk import from another country. Restriction on minutes on driver. |  |
| <b>Key words:</b> RJ45, IoT, Machine learning, Python, Raspbery Pi, PC to PC communication for image passing in real time (8 MPixel Camera, noise removal, gray level images, thresholding, contour identification).  |  |
| <b>Example 2:</b> An airplane Application. Carbon films layers, foreign particle identification problem. Parameter considered: width of particle to be found.   |  |
| <b>Impact of Innovative Method:</b> Students come to know how problems are formulated and what kind of real industrial problems/ challanges are there.  |  |

Rubrics used :Shown in table below.

Name of the Industry: UV Knowledge Centre

Subject: CTA (BE I&C)

Innovative experimental demo arranged at UV Knowledge centre and Discussion on Problem formulations by technical experts. Problems described is at the back page of attendance report.

| <b>Questions (downwards) Scale Factors (on right)</b>  | <b>Exceedingly well: 3</b> | <b>Good: 2</b>          | <b>Average: 1</b> | <b>Average Score</b> |
|--|----------------------------|-------------------------|-------------------|----------------------|
| Are the contents of the session satisfactory?  | 12(66.67%)                 | 6(33.34%)               | 0                 | 2.66                 |
| To what extent you learned Problem handled in the area of Industrial Applications (1200 vehicles example, Carbon Film foreign object identification example) | 9 (50%)                    | 6 (33.34%)              | 3(16.67%)         | 2.33                 |
| Are you satisfied by the the Question-answers session (by the expert from UV)  | Yes:18 (100%)              | No:                     |                   | 3                    |
| <b>Overall impact of the visit</b>   | Excellent:13(72.22 )       | Satisfactory:5 (27.78%) | Poor: 0           | 2.72                 |

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