



## **SREE VIDYANIKETHAN ENGINEERING COLLEGE**

**(AUTONOMOUS)**

Sree Sainath Nagar, Tirupati - 517102

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### *Department of Electronics and Communication Engineering*

#### **Three Day Add-On courses on 'Image Processing Applications Using MATLAB'**

**Name of the Event** : Three day add on course on "*Image Processing Applications v  
Using MATLAB*"

**Conducted by** : Department of E C E

**Event Organizer** : Dr. V. V. Satyanarayana Tallapragada

**Schedule of the Event** : 28-30, January 2019

**Target group** : III Year ECE

**Event Objectives** :

1. To impart knowledge in fundamentals of Image Processing.
2. To develop skills in analysis, design, problem solving, and selection of appropriate techniques to develop algorithms pertaining to image processing.
3. To implement the algorithms such that to have an inclination towards solving societal issues.

**COURSE OUTCOMES:** After successful completion of the Event, the participants will be able to:

**CO1.** Demonstrate fundamental knowledge in (PO1)

- Read images using MATLAB
- Analyze the images
- Identify the type of image

**CO2.** Analyze various functions of Image Processing Toolbox. (PO2)

**CO3.** Design solutions for complex engineering problems using MATLAB. (PO3)

**CO4.** Select and apply appropriate techniques to solve complex engineering problems pertaining to image processing. (PO5)

**CO5.** Work effectively as an individual or as a group member or leader in the field of Image Processing. (PO9)

**CO6.** Communicate effectively on complex engineering activities with the engineering community and with society (PO10)

**CO7.** Demonstrate knowledge of engineering and management principles and apply these to one's own work, as a member and leader in a team.(PO11)

**CO8.** Able to engage in life-long learning in the field of Image Processing (PO12)

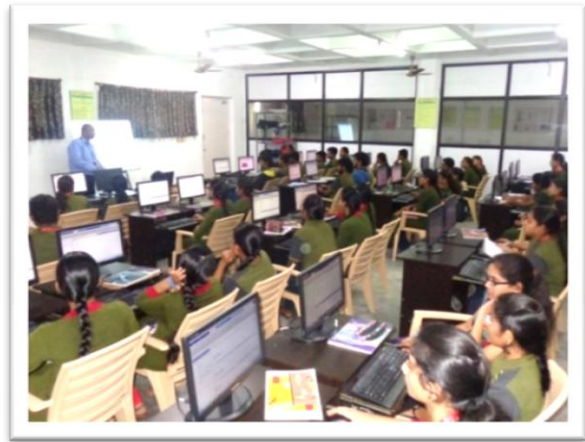
**CO - PO Mapping:**

	PO1	PO2	PO3	PO5	PO9	PO10	PO11	PO12
CO1	<b>X</b>							
CO2		<b>X</b>						
CO3			<b>X</b>					
CO4				<b>X</b>				
CO5					<b>X</b>			
CO6						<b>X</b>		
CO7							<b>X</b>	
CO8								<b>X</b>

**Day 1:**

Image Processing Applications using MATLAB, add on course is started with the introduction to image processing toolbox in MATLAB by Dr. V. V. Satyanarayana Tallapragada at 2:30 PM on 28-01-2019. Outlining the programme details on how this add on course will be useful to the students of ECE, programming using MATLAB is started. Initially, a database of images which were stored in the systems was shown to the students to have an inclination towards viewing the images. How the images look in different types was dealt?

Reading of the existing database images is practically explained in this course. Students are trained to read different types of images at different planes is trained. Further, the images that were read are converted to different color models using the functions in MATLAB. Finally, the day 1 is concluded by reading and writing of the images, converting images into different color models by using existing functions in the image processing toolbox of MATLAB.



## **Day 2:**

On 29-01-2019, the day 2 started with having an overview of the previous days' concepts and doubts. Solving all the doubts of the students, generation of histogram and statistics based on histogram of an image is carried by the students. Converting the given RGB image into different color models based on color transformation and generation of histogram statistics from the transformed image is performed by the students. Such statistics are generated for an image database of size of 1000 images. For this purpose, Wang database which is an existing database is provided to the student's apriori. Further K-Nearest Neighbor algorithm is explained for classification based on the features that are stored in the database which are histogram statistics. Finally, the day 2 concluded with feature extraction of the 1000 images and storing them in the database.



### **Day 3:**

On 30-01-2019, the day 3 started with having an overview of the previous days' concepts and providing solutions to the doubts. Finally, K-Nearest Neighbor algorithm is implemented and the images are displayed by the students based on the given query image. Finally, the day 3 is concluded by having feedback from the students, interaction with the students and demonstration of various research problems with their solutions emphasizing their application to the society.



**Total Number of Students Registered: 60**

**Total Number of students attended: 55**