

**PANIPAT INSTITUTE OF ENGINEERING & TECHNOLOGY**  
**Department of Electronics & Communication Engineering**

**LESSON PLAN**

**Subject Name: - Digital Image Processing**  
**Year: - 4th**

**Subject Code: - ECE-403N**  
**Semester:- 7th**

<b>Lecture No</b>	<b>Unit No</b>	<b>Topic</b>	<b>References</b>
L1	<b>Unit-1</b>	Introduction to Image Processing	Digital Image Processing, third edition by Rafael C. Gonzalez and Richard E Woods. Publisher: Pearson Education.
L2	<b>Unit-1</b>	Processing and applications	Digital Image Processing, third edition by Rafael C. Gonzalez and Richard E Woods. Publisher: Pearson Education.
L3	<b>Unit-1</b>	Image representation and modelling	Digital Image Processing, third edition by Rafael C. Gonzalez and Richard E Woods. Publisher: Pearson Education.
L4	<b>Unit-1</b>	Image Enhancement	Digital Image Processing, third edition by Rafael C. Gonzalez and Richard E Woods. Publisher: Pearson Education.
L5	<b>Unit-1</b>	Restoration	Digital Image Processing, third edition by Rafael C. Gonzalez and Richard E Woods. Publisher: Pearson Education.
L6	<b>Unit-1</b>	Image analysis introduction	Digital Image Processing, third edition by Rafael C. Gonzalez and Richard E Woods. Publisher: Pearson Education.
L7	<b>Unit-1</b>	reconstruction from Projections	Digital Image Processing, third edition by Rafael C. Gonzalez and Richard E Woods. Publisher: Pearson Education.
L8	<b>Unit-1</b>	Image Data Compression	Digital Image Processing, third edition by Rafael C. Gonzalez and Richard E Woods.

			Publisher: Pearson Education.
L9	<b>Unit-1</b>	Image Perception: Light, Luminance	Digital Image Processing, third edition by Rafael C. Gonzalez and Richard E Woods. Publisher: Pearson Education.
L10	<b>Unit-1</b>	Brightness, Contrast	Digital Image Processing, third edition by Rafael C. Gonzalez and Richard E Woods. Publisher: Pearson Education.
L11	<b>Unit-1</b>	MFT of visual System	Digital Image Processing, third edition by Rafael C. Gonzalez and Richard E Woods. Publisher: Pearson Education.
L12	<b>Unit-1</b>	Visibility Function	Digital Image Processing, third edition by Rafael C. Gonzalez and Richard E Woods. Publisher: Pearson Education.
L13	<b>Unit-1</b>	Image fidelity	Digital Image Processing, third edition by Rafael C. Gonzalez and Richard E Woods. Publisher: Pearson Education.
L14	<b>Unit-1</b>	Color representation	Digital Image Processing, third edition by Rafael C. Gonzalez and Richard E Woods. Publisher: Pearson Education.
L15	<b>Unit-1</b>	color matching and reproduction,	Digital Image Processing, third edition by Rafael C. Gonzalez and Richard E Woods. Publisher: Pearson Education.
L16	<b>Unit-1</b>	color vision Model	Digital Image Processing, third edition by Rafael C. Gonzalez and Richard E Woods. Publisher: Pearson Education.
L17	<b>Unit-2</b>	Introduction to image sampling and quantization	Digital Image Processing, third edition by Rafael C. Gonzalez and Richard E Woods. Publisher: Pearson Education.
L18	<b>Unit-2</b>	One dimensional sampling theory	Digital Image Processing, third edition by Rafael C. Gonzalez and Richard E Woods. Publisher: Pearson Education.
L19	<b>Unit-2</b>	Two dimensional sampling theory	Digital Image Processing, third edition by Rafael C. Gonzalez and Richard E Woods. Publisher: Pearson Education.
L20	<b>Unit-2</b>	practical limitations in sampling	Satellite Communication, "Anil k

		and reconstruction	Maini”, 3 <sup>rd</sup> edition
L21	<b>Unit-2</b>	practical limitations in sampling and reconstruction cont.	Satellite Communication, “Anil k Maini”, 3 <sup>rd</sup> edition
L22	<b>Unit-2</b>	Introduction to quantization	Digital Image Processing, third edition by Rafael C. Gonzalez and Richard E Woods. Publisher: Pearson Education.
L23	<b>Unit-2</b>	Uniform and non-uniform Quantization	Digital Image Processing, third edition by Rafael C. Gonzalez and Richard E Woods. Publisher: Pearson Education.
L24	<b>Unit-2</b>	Optimum mean square or Lloyd-Max quantizer	Digital Image Processing, third edition by Rafael C. Gonzalez and Richard E Woods. Publisher: Pearson Education.
L25	<b>Unit-2</b>	Revision test	Digital Image Processing, third edition by Rafael C. Gonzalez and Richard E Woods. Publisher: Pearson Education.
L26	<b>Unit-3</b>	Introduction to image enhancement	Digital Image Processing, third edition by Rafael C. Gonzalez and Richard E Woods. Publisher: Pearson Education.
L27	<b>Unit-3</b>	Image enhancement in spatial domain	Digital Image Processing, third edition by Rafael C. Gonzalez and Richard E Woods. Publisher: Pearson Education.
L28	<b>Unit-3</b>	Image enhancement in frequency domain	Digital Image Processing, third edition by Rafael C. Gonzalez and Richard E Woods. Publisher: Pearson Education.
L29	<b>Unit-3</b>	Point Operation	Digital Image Processing, third edition by Rafael C. Gonzalez and Richard E Woods. Publisher: Pearson Education.
L30	<b>Unit-3</b>	Point Operation(cont.)	Digital Image Processing, third edition by Rafael C. Gonzalez and Richard E Woods. Publisher: Pearson Education.
L31	<b>Unit-3</b>	Histogram Modeling	Digital Image Processing, third edition by Rafael C. Gonzalez and Richard E Woods. Publisher: Pearson Education.

L32	<b>Unit-3</b>	Spatial Operations	Digital Image Processing, third edition by Rafael C. Gonzalez and Richard E Woods. Publisher: Pearson Education.
L33	<b>Unit-3</b>	Spatial Operations (cont.)	Digital Image Processing, third edition by Rafael C. Gonzalez and Richard E Woods. Publisher: Pearson Education.
L34	<b>Unit-3</b>	Transform operations	Digital Image Processing, third edition by Rafael C. Gonzalez and Richard E Woods. Publisher: Pearson Education.
L35	<b>Unit-3</b>	Transform operations (cont.)	Digital Image Processing, third edition by Rafael C. Gonzalez and Richard E Woods. Publisher: Pearson Education.
L36	<b>Unit-3</b>	Multispectral Image enhancement	Digital Image Processing, third edition by Rafael C. Gonzalez and Richard E Woods. Publisher: Pearson Education.
L37	<b>Unit-3</b>	Color Image enhancement.	Digital Image Processing, third edition by Rafael C. Gonzalez and Richard E Woods. Publisher: Pearson Education.
L38	<b>Unit-4</b>	Introduction to Image Analysis and Computer Vision	Digital Image Processing, third edition by Rafael C. Gonzalez and Richard E Woods. Publisher: Pearson Education.
L39	<b>Unit-4</b>	Spatial Operations	Digital Image Processing, third edition by Rafael C. Gonzalez and Richard E Woods. Publisher: Pearson Education.
L40	<b>Unit-4</b>	Spatial Operations (cont.)	Digital Image Processing, third edition by Rafael C. Gonzalez and Richard E Woods. Publisher: Pearson Education.
L41	<b>Unit-4</b>	Transform operations	Digital Image Processing, third edition by Rafael C. Gonzalez and Richard E Woods. Publisher: Pearson Education.
L42	<b>Unit-4</b>	Transform operations (cont.)	Digital Image Processing, third edition by Rafael C. Gonzalez and Richard E Woods. Publisher: Pearson Education.
L43	<b>Unit-4</b>	Multispectral Image enhancement	Digital Image Processing, third edition by Rafael C. Gonzalez and Richard E Woods.

			Publisher: Pearson Education.
L44	<b>Unit-4</b>	Color Image enhancement.	Digital Image Processing, third edition by Rafael C. Gonzalez and Richard E Woods. Publisher: Pearson Education.
L45	<b>Unit-4</b>	Introduction to Image Analysis and Computer Vision	Digital Image Processing, third edition by Rafael C. Gonzalez and Richard E Woods. Publisher: Pearson Education.
L46	<b>Unit-4</b>	Shape features	Digital Image Processing, third edition by Rafael C. Gonzalez and Richard E Woods. Publisher: Pearson Education.
L47	<b>Unit-4</b>	Shape features	Digital Image Processing, third edition by Rafael C. Gonzalez and Richard E Woods. Publisher: Pearson Education.
L48	<b>Unit-4</b>	Image Segmentation	Digital Image Processing, third edition by Rafael C. Gonzalez and Richard E Woods. Publisher: Pearson Education.
L49	<b>Unit-4</b>	Image Segmentation techniques	Digital Image Processing, third edition by Rafael C. Gonzalez and Richard E Woods. Publisher: Pearson Education.

**Text Books:**

- Digital Image Processing, third edition by Rafael C. Gonzalez and Richard E Woods. Publisher: Pearson Education.
- Digital Image Processing by S. Sridhar , Publisher: Oxford

**Reference Books:**

- Fundamentals of Digital Image Processing by Anil K Jain, Publisher: Prentice Hall