

Department of Computer Engineering			
Digital Image Processing (66518)			
Total Credits		3	
major elective			
Prerequisites		-	
Course Contents			
Introduction to Image Processing: What is image processing? Components of Image Processing System, Digital Image Fundamentals (Electromagnetic Spectrum, Image Sensing and Acquisition, Image Sampling and Quantization), Image Enhancement in Spatial Domain and Frequency Domain, Color Image Processing, Image Compression, Image Segmentation. Using a number of image processing tools and platforms.			
Intended Learning Outcomes (ILO's)		Student Outcomes (SO's)	Contribution
1	The ability to apply knowledge of the fundamentals of digital image processing and to use special and frequency domain filters.	C	40 %
2	The ability to apply and use image compression algorithms, morphological image processing and image detection techniques.	C	40 %
3	The ability to use tools related to image processing such as OpenCV, imagej, and matlab in a project.	K	20 %
Textbook and/ or References			
Digital Image Processing 3rd Edition by Rafael Gonzalez and Richard Woods			
Assessment Criteria		Percent (%)	
Mid. Term Exam		40 %	
Projects		20 %	
Final Exam		40 %	
Course Plan			
Week	Topic		
1	Introduction		
2	Digital Image Fundamental		
3-6	Image Enhancement in the Spatial Domain		
7-9	Image Enhancement in the Frequency Domain		
10	Color Image Processing		
11-12	Image Compression		
13-14	Image Segmentation		
15-16	Morphological Image Processing		