SCHEMEOFCOURSEWORK

CourseDetails:

CourseTitle	:ImageProcessing		
CourseCode	:15CT1127	L T P C	:3 0 0 3
Program:	: B.Tech.		
Specialization:	:ComputerScience&Engineering,InformationTechnology		
Semester	:VI		
Prerequisites	:ComputerGraphics		
Coursestowhichitis a prerequisite	:		

CourseOutcomes(COs):

1	Understandtheimagefundamentalsandmathematicaltransformsnecessaryforimageprocessing
2	Explaintheimageenhancementtechniques
3	Describeimagerestorationprocedures.
4	Explaintheimagecompressionprocedures
5	Understandtheimagesegmentationandrepresentationtechniques

CourseOutcomeVersusProgramOutcomes:

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO-1	3	3	2	3	3										
CO-2	3	3	2	3	2										
CO-3		2	3	3	2										
CO-4	2	3	3		2	2									
CO-5															

S-Stronglycorrelated, M-Moderatelycorrelated,Blank-Nocorrelation

Assessment Methods:	Assignment/Quiz/Mid-Test / EndExam

Week	Topic/ CONTENTS	CourseOutcomes	Samplequestions	Teaching-LearningStrategy	Assessment Method&Schedule
1	Examplesof fieldsthatuse digitalimageprocessing,fundamentalstepsindigitalimageprocessing,component sof imageprocessing system.DigitalImageFundamentals: A simpleimageformationmodel,imagesampling andquantization,basicrelationshipsbetween pixels	CO1	Explain thecomponentsofImageProcessing systemwitha neatsketch	□ Lecture □ PPT	
2	Basic gray-leveltransformation,histogramprocessing,enhancementusing arithmeticand logicoperators,basic spatialfiltering,smoothing andsharpening spatial filters.	CO2	Explain abouthistogramProcessing	□ Lecture □ PPT	Assignment-1
3	UNIT-II IMAGERESTORATION: A modelof theimagedegradation/restorationprocess,noisemodels,restoration inthe presenceof noise–onlyspatialfiltering,geometrictransforms;Introduction totheFouriertransformand thefrequencydomain,estimatingthe degradation function	CO3	Explain aboutspatialfiltering Definenoise.Discuss aboutdifferenttypesof noises	□ Lecture □ Discussion	MidTest1&Quiz-1
4	COLORIMAGEPROCESSING :Color fundamentals,colormodels,basicsoffull–colorimageprocessing,colortransforms,smoothing andsharpening,colorsegmentation.	CO3	Explain aboutdifferentcolormodels	□□□ Lecture □ Discussion	
5	IMAGE COMPRESSION: Fundamentals,imagecompressionmodels,error-freecompression,lossypredictivecoding,imagecompression standards:JPEGcompression standard,Fractalcompression	CO4	Explain aboutlosslesscompressionmodels	□□□ Lecture □ Discussion	

scheme,Waveletcompression scheme.

6	Mid-Test1&Quiz-1				

7	MORPHOLOGICALIMAGEPROCESSING: Preliminaries,dilation,erosion,openand closing,hitormisstransformation,basic morphological algorithms.	CO4	Explain abouthitormisstransfor mation	□□□ Lecture □ Discussion	
8	IMAGESEGMENTATION: DetectionofdiscontinuousFirstorderand secondorderedgeoperators,Edge linking andboundarydetection,Canny'sedgede tection algorithm,Hough transformfordetectinglines and curves,Edgelinking,thresholding,region	CO5	Explain aboutcanny'sedgedetectio n algorithm	□□□ Lecture □ Discussion	Assignment
9	OBJECTRECOGNITION: Patterns andpatterns classes,recognition basedondecision–theoreticmethods,matching,optimumst atistical classifiers,neuralnetworks,structuralme thods–matching shapenumbers,stringmatching.	CO5	Whatisapatternanddis cuss aboutdifferentpattern classes Discuss in detail aboutstring matching	□□□ Lecture □ Discussion	Mid-Test 2 &Quiz-2
10	Mid-Test2&Quiz-2				
11	ENDEXAM				