SCHEME OF COURSEWORK

CourseDetails:

CourseTitle	:EmbeddedSystems-1 Lab		
CourseCode	:15CT1122	L T P C	: 0 0 3 2
Program:	: B.Tech.		
Specialization:	: ComputerScience&Engineering,InformationTechnology		
Semester	: V		
Prerequisites	:NoPrerequisite		
Coursestowhichitisaprerequisite	: EmbeddedSystems-2Lab		

CourseOutcomes(COs):

CO1	Implement number conversions.
CO2	Createdelays between events and speedcontrol programs.
CO3	Write programs in assemblylanguage.
CO4	Designapplicationsbyinterfacingsystemperipherals.

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

CO5	Createserial communication buses.

CourseOutcomeVersusProgramOutcomes:

S-Stronglycorrelated, M-Moderatelycorrelated,Blank-Nocorrelation

AssessmentMethods:	LabInternalExam/Day-to-DayAnalysis(observation,recordand viva)

Teaching-Learningand Evaluation

Week	Topic/Contents	Course Outcomes	SampleQuestions	Teaching-LearningStrategy	Assessment Method&Schedule
1	ELEMENTARY OPERATIONS: i. MultiprecisionAddition,Subtraction,andMultiplication. ii. HandlingFractionalnumbers iii. BCD-BinaryConversionexamples iv. ASCIItoBCDconversion v. BinarytoASCIIconversion	CO1,3	1) WriteaProgramforaddingtwonumbersusingindirectadd ressingmode. WriteaprogramforBCDASCIIConversion. 2)	=Lecture =WorkingExamples =ProgramWriting	DaytodayAnalysis–1 LabInternal–1 (Week-9)
2	INPUTOUTPUTCONTROLPROGRAMMING: i. Controllingtheexternallogicalswitching,forDCmotors,Steppers ii. TimersandCounterswithandwithoutInterrupts iii. Pulsewidthmodulationforspeedcontrol iv. Capturecontrolofexternalevents	CO2,3,4	1) Writeaprogramtoautomatethe operations ofTimer/Counter 2) Writeaprogramforcaptureoper ation.	=Lecture =ProgramWriting	
3	PROGRAMMINGUSINGBUILTINTIMERS: i. AsEventTimers ii. AsfastCounters iii. FrequencyGeneration	CO2,3	1)Writeaprogramwhichcreate10Khz frequency.WithXTAL=22MHz	=Lecture =ProgramWriting	

	MIDTEST-1				
4	CAPTURECONTROLANDITSAPPLICATIONE XAMPLES: i. MeasurementofpulsewidthusingI/O ii. MeasurementofDutycycle,powerfactoretc iii. Measurementofvelocityandacceleration.	CO2,3	1) Writeaprogramforgenerating 2.5KHzPWMfrequencywithX TAL=22MHz 2) Writeaprogramforge neratingvelocities.	=Lecture =ProgramWriting	DaytodayAnalysis–2
5	SERIALCOMMUNICATIONMETHODS: i. USARTanditsprogramming ii. SPIbusanditsprogramming	CO3,5	1) Writeaprogramfortransmittingdatau	=Lecture =ProgramWriting	LabInternal –2 (Week-16)
6	GenerationofSinewave	CO1,3	1) Writeaprogramtogen	=Lecture =ProgramWriting	
7	MIDTEST-2				
8/9	ENDEXAM				