INTELLIGENT TRANSPORTATION SYSTEM

COL	Offering Branches			CE HONOURS							Credite			3	
Course Category: Course Type:			•							Le	Lecture-Tutorial-			200	
				Ineory							Practical:			3-0-0	
				20CE3306 – Surveying							Continuous Evaluation:		30		
Prerequisites:				20CE3500 – Surveying 20CE3502 – Highway Engineering							Semester End			70	
											Evaluation: Total Marks:		100		
Course	Outc	omes									10141 1014	п қз.		.00	
Upon s	uccess	ful com	pletion	of the c	course,	the stu	dent wi	ill be al	ole to:						
CO1	Iden	ntify an	d diffe	rentiat	e ITS ı	user se	rvices	and th	eir con	nponent	s.			K	
CO2	Prec	redict appropriate ITS technology to solve real-life traffic problems.								K					
CO3	Esti	mate tr	affic c	ongest	ion by	the ac	quisiti	on of t	oig data	a using a	dvanced	device	s.	K.	
CO4	Desi	ign and	imple	ment s	uitable	e ITS a	nd serv	vices f	or effe	ctive tra	nsportat	ion.		K	
CO5	Sele	ct suita	ble sta	ndards	for ef	fective	imple	menta	tion of	ITS.				K	
	PO	Contri	bution PO	of Cou	PO	Itcome	s towai	rds ach	PO	ent of Pr	ogram O	outcomes	3		
	1	2	3	4	5	6	7	8	9	PO10	PO11	PO12	PSO1	PSO	
CO1	2			-	-	1		~	1		1	1	2	1	
CO2	2					2			2		2	2	2	2	
CO3	3					2			2		2	2	3	2	
CO4	2					3			3		3	3	2	3	
CO5	2					1			1		1	1	2	1	
Avg.	2					2			2		2	2	2	2	
		1- Lo	ow				2-Me	dium				3-High			
UNIT-	1 1 H	ITS Hist	tory and	d Appl and f	lication Feleme	Cou ns: tric system	stems:	Definit	ions, fo	eatures,	and obje	ctives of	TITS,	COI	
UNIT- UNIT-	-2	ITS Hist IS Back Istory of elemetric ITS Use nfrastruc nanagem nd main ricing, otificatio	tory and ground f ITS e struct r Servit cture b tent, cr ttenance travell on and	d Appl d and T and its ure, ITS ces: ased so ash pre e, trans er info avoidar	lication Feleme develo S taxon ervices; ventior it man prmatio nce syst	Cou ns: tric sy- ppment omy, I' ; Arten n and s agemen on, CO tem, dr	stems: worldv rS appl ial ma afety, r nt, eme DV, In iver ass	Definit vide, te lication nageme road we rgency itelliger	tent tions, fe elemetri areas, n ent and cather n manag nt veh system	eatures, ic concej uses. 1 integra nanagem ement, F icle-base	and obje ot, transp ttion, fre ent, road Electronic d servio	ctives of oort telen eway/hig lway ope e paymen ces; Co	F ITS, netric, ghway ration nt and llision	C01	
UNIT- UNIT- UNIT-	-2 1 1 -2 1 -2 1 -2 1 -3 1 	ITS Hist ITS Back listory c elemetric ITS Use nfrastruc nanagem nd main ricing, otificatio ITS Cor Compone nformati nanagem ural tran ystems,	tory an aground of ITS e structer r Service travellent, cr travell on and nponen ents of on sys eent, ad isportate	d App 1 and 1 and its ure, ITS ces: ased so ash pre e, trans er info avoidan nts, Too user so tem, ac vanced ions, so s and lin	lication Teleme develo S taxono ervices; ventior it man ormatio nce syst ols, and ervices; dvanced public ecurity mitation	Cou ns: tric sy- ppment omy, I' ; Arten n and s agement n, CC tem, dr l Strat ; advar d vehic transp and sa ns.	rse stems: worldv TS appl tial ma afety, r nt, eme DV, In iver ass egies: nced tra cle con ortation afety sy	Cont Definit wide, te lication nageme road we rgency ttelliger istance affic m ttrol sys systems,	tent ions, fe elemetri areas, n ent and cather m manag nt veh system anagem stem, o n, electr urban	eatures, ic concej uses. 1 integra nanagem ement, F icle-base nent syst commerc ronic pay traffic c	and obje ot, transp ation, fre ent, road Electronic d servic em, adva ial vehic ment sys control, s	ctives of oort telen eeway/hig lway ope paymen ces; Co anced tra tem, adv coot, an	TITS, netric, ghway ration nt and llision weller titional anced d scat	CO1 CO2 CO3	
UNIT- UNIT- UNIT-	Image: 1	ITS Hist ITS Hack listory of elemetric ITS Use fifth and main ricing, otificatio ITS Cor Compone formati nanagem ural tran ystems, Design a ensor, d aveller corking, entre of fanagem	tory an cground cground f ITS s struct: r Servit ture b tenent, cr travell on and mponer ents of on sys sportat benefit: mompone ents of no sys sportat benefit: mompone ents of sportat benefit: mompone etersor worldw lesign nent	d Appl d and f and its ure, ITS ces: ased so ash pre e, trans er info avoidar ths, Too user so tem, ac vanced ions, so s and lim blemeni ents; da s, vehia aton tr wide IT and i	licatior Feleme develo S taxon ervices; ventior it man ormatio orce syst ols, and ervices; dvancec public ecurity mitation: tata acqu cle ide ools, d 'S impl mplem	Cou is: tric sy popment isomy, I' ; Arteer i and s agement in, CC tem, dr I Strat is advan d vehic transp and s is. isition ntifiers ata haa lementa entation	rse (stems: worldw FS appl tial ma afety, r t, eme DV, In iver ass egies: need tra- ble con ortation afety sy methods, and ndling, ation ar n, Sys	Cont Definiti vide, ta ication nagem- oad we rgency stelliger istance affic m trol systems, ds, equ GPS, (proces ad chal tem I	tent tions, fe elemetri areas, t ent and eather n managen at veh system anagen stem, con, electr urban ipment Commu sing ar lenges, ntegrate	eatures, ic concejuses. I integra nanagem ement, F icle-base hent syst commerc ronic pay traffic c and used nication d mana Traffic or and	and obje ot, transp ettion, fre ent, road Electronic d servic em, adva ial vehic ment sys control, s d technol tools; D gement; Comman Smart	ctives of oort telen eeway/hig lway ope paymen ces; Co anced tra le opera- tem, adv coot, an ogy, rada SRC, C TCM, a d and C Transpor	f ITS, netric, ethway ration ti and lision veller tional anced d scat ar and ALM, nd its ontrol tation	CO2 CO2 CO3	
UNIT- UNIT- UNIT- UNIT-	I I I I H H	ITS Hist ITS Hist ITS Back listory c elemetric ITS Use infrastruct nanagem nd main ricing, otificatie ITS Cor Componentian informati nanagem ural tran ystems, 1 Design a Design c ensor, d aveller vorking, entre c fanagem TS Stan TS Stan tegratio	tory an cground cground f TS s struct r Servit ture b lenet, cr r Servit ture b lenet, cr lenet mponer mponer mponer syssent, ad sysportat sysportat sysportat lenet dardsr a	d Appl 1 and 7 and its ure, ITS ces: ased so ash pre e, trans er info avoidan hts, Too user so tem, ac vanced ions, so s and lin blement ents; da s, vehi ation to vide IT and i develop up-grad	lication Feleme develo S taxone ervices; ventior it man prmatio ce syst ols, and ervices; dvancee public ecurity mitation: ta acque cle ide ools, d 'S impl mplem pation; F	Cou is: tric sy ppment omy, I' ; Arten a ad s agement a ad s agement agement is advant d vehid transp and s ins. uisition inifiers ata haa lementa oprocess Future of	rse (stems: worldv rs appl rial ma afety, r by, In iver ass egies: need tra- cle con ortation afety sy methods, and o ndling, ation at n, Sys , legal of ITS	Cont Definiti vide, te dication nagemu voad we rgency ttelliger istance affic m trol sys system systems, ds, equ GPS, C proces ad chal tem I issues,	tent ions, fe elemetri areas, t ent ance cather m managen t veh asystem anagen stem, con, electri urban ipment Commu sing ar lenges, n tegrato , finance	eatures, ic concejuses. I integra nanagem ement, F icle-base hent syst commerc ronic pay traffic c and used nication ad mana Traffic or and	and obje pt, transp ition, free ent, road Electronic d servic em, adva ial vehic ment sys control, s l technol tools; D gement; Comman Smart s, Mains	ctives of oort telen eway/hig way ope paymen ces; Coi anced tra cle opera tem, adv coot, an ogy, rada SRC, C TCM, a d and C Transpon streaming	f ITS, hetric, tration at and llision veller tritional anced d scat ar and ALM, nd its ontrol tation	CO2 CO3 CO4	
UNIT- UNIT- UNIT- UNIT-	I I I I H H H H I I	ITS Hist ITS Hack Istory of elemetric ITS Use fifther the there in the thermal ITS Correction ITS Correction ITS Correction ITS Correction Component formati nanagem transport Design ac elesign of elesign of elesign of elesign of elesign of elesign of elesign of elesign of aveller vorking, Centre of Anangem TS stand the gratio	tory an cground cground f TS s struct r Servit ture b henet, cr tenance travell on and mponen mponen mponen mponen mponen mponen mponen mponen mponen mponen mponen mponen mponen mponen mponen mponen mponen mponen mponen mponen mponen mponen mponen mponen mponen mponen mponen mponen mponen mponen mponen mponen mponen mponen mponen mponen mponen mponen mponen mponen mponen mda mponen mponen mponen mponen mponen mponen mponen mponen mponen mponen mponen mponen mponen mponen mponen mponen mponen mponen mponen mponen mponen mponen mponen mponen mponen mponen dudadss : duadss : duad	d Appl 1 and 7 and its ure, ITS ces: ased so ash pre e, trans er info avoidan nts, Too vanced ions, so tem, ac vanced ions, so tem, ac vanced ions ion (tem, ac) vanced ion (tem, ac) vance	lication Feleme develo S taxono ervices; ventior it mana prmatio pols, and ervices; tols, and ervices;	Cou is: tric sy ppment omy, I' ; Arten a agemeter in, CC tem, dr d strat ; advara d vehia transp and si ns. isition intifiers ata haa lementation processs Future of Counters State of the state state of t	rse (stems: worldv FS appl ial ma afety, rn t, eme DV, In iver ass egies: aced tra- cle con- ortation afety sy method s, and of adding, ation ar n, Sys , legal of ITS ing]	Confi Definiti vide, to ication nagemu coad we rgency ttelligeti istance affic m trol systems, systems, system systems, ds, equ GPS, C process d chala stem I issues, Reso	tent ions, fe elemetri areas, i ent and eather in managen t veh system anagen stem, co n, electri urban ipment Commu sing ar lenges, ntegrate finance	eatures, ic concejuses. I integra nanagem ement, F icle-base hent syst commerc ronic pay traffic c and used nication nd mana Traffic or and cial issue	and obje ot, transp ettion, fre ent, road Electronic d servic em, adva ial vehic ment sys sontrol, s d technol tools; D gement; Comman Smart s, Mains	ctives of oort telen eway/hig way opee paymen ces; Coi anced tra cle opera tem, adv coot, an ogy, rada SRC, C TCM, a d and C Transpon etreaming	f ITS, netric, shway ration at and llision veller tional anced d scat ar and ALM, nd its ontrol tation	CO1 CO2 CO3 CO4	

Page **256** of **278**

	2.	and A. Sadek, Artech House, 2010, First Edition. Intelligent Transport Systems, Sarkar, Pradip Kumar, and Amit Kumar Jain, PHI Learning, 2018, First Edition.
	3.	Perspectives on Intelligent Transportation Systems (ITS), J.M. Sussman, Springer, 2005, First Edition.
	1.	Economic Impacts of Intelligent Transportation Systems: Innovations and Case Studies, Bekiaris and Y.J. Nakanishi, Elsevier/JAI, 2004.
	2.	IET Intelligent Transport Systems and 15th International IEEE Conference on Intelligent Transportation Systems (ITSC), September 2012.
Reference Books	3.	Intelligent Transport Systems Standards, Bob Williams, Artech House Publishers, 2008.
	4.	Intelligent Transport Systems: Cases and Policies, RogerStough, Edward Elgar, 2001.
	5.	Intelligent Vehicle Technologies – Theory and Applications, L. Vlacic, M. Parent, F. Harashima, Butterworth-Heinemann, 2010. 6. The Imp
e- Resources &	1.	http://digital-library.theiet.org/content/journals/iet-its
other digital	2.	http://digital-library.theiet.org/content/journals/iet-its
material	3. 4.	https://www.its.dot.gov/history/pdf/HistoryofITS_book.pdf

Page **257** of **278**