SCHEME FOR LEARNING OUTCOME

В	ranch Coc	le	Co	ourse Co	de	CO Code	LO Code	
Ε	0	3	5	0	1	1	1	Format No. 4

COURSE NAME	Data and Computer Networking
CO Description	Explain the fundamentals of computer network.
LO Description	Classify different computer networks and servers.

SCHEME OF STUDY

S. No.	Learning Content	Teaching – Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks
LO-01	Parallel vs serial transmission; Definition, Benefits and Components of computer network, Classification of Network by their Geography: PAN, CAN, LAN, MAN, WAN, Classification of Network by their Component Role: Peerto-Peer Network, client-Server Network, Different type of servers: web server, mail server, data server, DNS server, Topologies of network: Bus, Ring, Star, Mesh, Tree	Interactive classroom lecture, PPT, demonstration, quiz, assignments	Teacher will explain the contents and provide handouts to students. Teacher will conduct quiz/ assignments/ tutorial.	6	-	Text Books, PPT, Handouts, chalk board, charts.Videos lectures- NPTEL& others	

SCHEME OF ASSESSMENT

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal
LO-01	End Semester Theory Exam	 Student will be asked to(and/or): Classify PAN, CAN, LAN, MAN, WAN Compare Peer-to-Peer Network, client-Server Network Define Different type of servers: web server, mail server, data server 	10	Question paper, Rating scale	External

4. Distinguish between Bus, Ring, Star, Mesh, Tree		
ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACU		

RGPV (Diploma	a Wing	Bhopal
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SCHEME FOR LEARNING OUTCOME

В	ranch Cod	de	Co	ourse Co	de	CO Code	LO Code	
E	0	3	5	0	1	1	2	Format No. 4

COURSE NAME	Data and Computer Networking
CO Description	Explain the fundamentals of computer network.
LO Description	Compare different codes and switching methods.

SCHEME OF STUDY

S. No.	Learning Content	Teaching – Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks
LO-02	Types of switching: Circuit switching, message switching, packet switching, virtual circuit switching, Text codes:-ASCII, Unicode; Error codes- REC,FEC; Parity code, Block code, Hamming code, CRC code	Interactive classroom lecture, PPT, demonstration, quiz, assignments, tutorial	Teacher will explain the contents and provide handouts to students. Teacher will conduct quiz/assignments/ tutorial to make students practice their knowledge.	8	-	Text Books, PPT, Handouts, chalk board, charts, Numerical Problems Workbook	

SCHEME OF ASSESSMENT

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal
LO-02	End Semester Theory Exam	 Student will be asked to(and/or): Differentiate Circuit switching, message switching, packet switching, virtual circuit switching. Describe ASCII, Unicode Describe Parity code, Block code, Hamming code, CRC code 	10	Question paper, Rating scale	External

RGPV (Diploma Wing) Bhopal		SCH	EME FOR LEARNING	E	Branch C	ode		Course Code			LO Code	A		
			OUTCOME E 0			3	5	0	1	1	3	Format No. 4		
COURS	E NAME	Data and Co	mputer Networ	king										
CO Des	cription	Explain the f	undamentals of	compute	r network.									
LO Desc	cription	Describe Sec	urity services us	sed in con	nputer network.									
		'			SCHEME OF STUDY									
S. No.	Learnir	ng Content	Teaching –Le Metho	•	Description of T-L Process	Tea Hr		_	act. t Hrs.		LRs I	Requir	ed	Remarks

LO-03 Definition of netwood security, Types of security services-password, Biomet captcha, antivirus firewall Encryption: symmetric key, Asymmetric key, digital signature	hands on practice, lab assignments, V- ic,	 Teacher will explain the content in class/lab. Teacher with support from lab staff will demonstrate the procedure of lab experiments. Student will conduct lab assignment based on these experiments. 	4		Lab manual, charts, experimental trainer instruments/kit with measuring instruments, computer with relevant simulation software and high speed internet.	
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SCHEME OF ASSESSMENT

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal
LO-03	Internal Assignment/ Progressive test	 Student will be asked to Explain need of network security. Describe password, Biometric, captcha, antivirus, firewall Differentiate Encryption: symmetric key, Asymmetric key Define digital signature 	10	Rubrics/Rating scale	Internal

RGPV (Diploma Wing) Bhopal

SCHEME FOR LEARNING OUTCOME

	LO Code	CO Code	de	ourse Co	Co	le	ranch Cod	В
Format No. 4	4	2	1	0	5	3	0	Ε

COURSE NAME	Data and Computer Networking
CO Description	Identify different network devices and transmission media.
LO Description	Define different types of networking devices.

SCHEME OF STUDY

S. No.	Learning Content	Teaching – Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks
LO-04	Need of Networking devices, Introduction and applications of NIC, Repeater, Bridge, Switch, Router, Gateway, Modems- DSL, ADSL, band splitter, media convertor, WiFi adapter card, Wifi access point	Interactive classroom lecture, PPT, demonstration, quiz,assignments, tutorial	Teacher will explain the contents and provide handouts to students. Teacher will conduct assignments/ quiz/tutorial to make students practice their knowledge.	6	-	Text Books, PPT, Handouts, chalk board, charts, Video lecture- NPTEL and others.	

SCHEME OF ASSESSMENT

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal
LO-04	Question Paper - External- End Sem Exam	 Student will be asked to(and/or): Describe band splitter, media convertor, WiFi adapter card, Wifi access point Differentiate NIC, Repeater, Bridge, Switch, Router, Gateway, Compare Modems-DSL, ADSL 	10	Question paper, Rating scale	External

RGPV (Diploma Wing) Bho		SCHEME FOR LEARNING		Branch Code			Course Code		de C	CO Code	LO Code	Format No. 2	
			OUTCOME		E 0	3	5	0	1	2	5	Format No	
COURSE NAME Data and Computer Ne			Networking										
CO Des	cription	Identify different ne	etwork devices and trai	nsmission media.									
LO Des	cription	Set-up and configur	e a Local Area Networl	<									
				SCHEME OF STUDY									
S. No.	. Learning Content		Teaching – Learning Method	Description of T-L Process	Tea Hr			act. Hrs.	L	LRs Required		d	Remarks
LO-05	O-05 Setup and configure a LAN network using network		 Lab demonstration, PPT, hands on practice, lab assignments Teacher will explain the content in class/lab. 				/Tut Hrs.		Han exp trai inst with	Lab manual, charts, Handouts, experimental trainer instruments/kit with measuring instruments.			
				SCHEME OF ASSESSMEN	IT								
S. No.		thod of	Description o	f Assessment	Maxi m Ma			Resources Required		External / Internal			

		Student will be asked to(and/or): 1. Prepare Ethernet cable			
LO-05	Practical test in laboratory	 Setup and configure a LAN network using network devices (routers, switches etc) Configure user devices. 	10	Question paper + Rating scale.	Internal

ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

DCDV/Diala		SCHEME FOR LEARNING	В	ranch Co	de	Co	ourse Co	de	Code	Code	Л
RGPV (Diploma Wing) Bhopal		OUTCOME	E	0	3	5	0	1	2	6	Format No. 4
COURSE NAME	Data and Computer Netwo	rking									

transmission media.
on media and media access methods.
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SCHEME OF STUDY

S. No.	Learning Content	Teaching – Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks
LO-06	Need of Transmission Media, Selection Criteria. Guided Media: Unguided Media: Types of cables, introduction, characteristics and comparison of: Twisted Pair Cable, STP, UTP, Ethernet cable, Co-axial Cable, Fiber Optic Cable.	Interactive classroom lecture, PPT, Video, demonstration, quiz, assignments.	Teacher will explain the contents and provide handouts to students. Teacher will conduct assignments/ quiz/tutorial to make students practice their	6		Text Books, PPT, Handouts, chalk board, charts, Video lecture- NPTEL and others.	

Selection Criteria.	knowledge.		
Unguided Media:			
Types of Communication Bands, Radio			
wave Communication, Microwave			
Communication, Infrared Communication,			
Satellite band. Frequency, Bandwidth and			
application.			
Definition of Media access; Media access			
methods: Polling, Token passing, CSMA/CA.			
S	CHEME OF ASSESSMENT		
			Futamal

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal
LO-06	Internal Assignment- Progressive	 Student will be asked to Compare guided transmission media. Distinguish between various Media Access Methods. Identify Frequency band of given unguided communication band. Enumerate selection criteria of guided Transmission media. 	10	Rubrics, Rating scale	Internal

ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

DCDV/Dialogos	Attura \ Dharad	SCHEME FOR LEARNING	В	ranch Cod	de	C	ourse Co	de	CO Code	LO Code	_
RGPV (Diploma V	wing) Bhopai	OUTCOME	E	0	3	5	0	1	3	7	Format No. 4
COURSE NAME Data a	and Computer Networ	king									

CO Description Compare OSI model and TCP/IP protocol suite.

LO Des	cription .	mastrat	e OSI Reference Model	•	HEME OF STUDY				
S. No.		Learnii	ng Content	Teaching – Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks
LO-07		re, Pee	OSI model – Layered er-to- Peer Processes, ulation.	Interactive classroom lecture, PPT, Video, demonstration, quiz, assignments.	Teacher will explain the contents and provide handouts to students. Teacher will conduct assignments/ quiz/tutorial to make students practice their knowledge.	6		Text Books, PPT, Handouts, chalk board, charts, Video lecture- NPTEL and others.	
				SCHEN	IE OF ASSESSMENT				
S. No.	Method Assessm			Description of Asso	essment		mum irks	Resources Required	External / Internal
Lo-07	End Sem Theory E		diagram	architecture of OSI	capsulation with suitable	10		Question paper , Rating scale	External
	I		ADDIT	IONAL INSTRUCTION	ONS FOR THE HOD/ FACUL	TY (IF AN	Y)		

DCD//D: 1		SCHEIVIE FOR LEAKINING		Di allicii C	oue		course	Joue	Code	Code	
KGPV (Dipio	oma Wing) Bhopal	OUTCOME	E	0	3	3	0	1	3	8	Format No. 4
COURSE NAME Data and Computer Networking											
CO Description	Compare OSI model and TCP	/IP protocol suite.									
LO Description Define TCP/IP protocol suite and related protocols.											

SCHEME FOR LEARNING

CO

Code

Course Code

Branch Code

LO

Code

			SCHEME OF STUDY				
S. No.	Learning Content	Teaching – Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks
LO-08	Layers in the TCP/IP Protocol Suite, Comparison between OSI and TCP/IP Protocol Suite. Introduction of Protocols: PPPOE, ARP, RARP, IP, UDP, TCP, Http, Ftp, Telnet, SMTP, IMAP & POP.	Interactive classroom lecture, PPT, Video, demonstration, quiz, assignments.	Teacher will explain the contents and provide handouts to students. Teacher will conduct assignments/ quiz/tutorial to make students practice their knowledge.	6		Text Books, PPT, Handouts, chalk board, charts, Video lecture- NPTEL and others.	

SCHEME OF ASSESSMENT

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal
LO-08	End Semester Theory Exam	 Student will be asked to (and/or): Explain Functions of each Layers of TCP/IP protocol suite. Compare OSI model and TCP/IP Protocol Suite. Define TCP/IP Protocols: PPPOE, ARP, RARP, IP, UDP, TCP, Http, Ftp, Telnet, SMTP, IMAP & POP. 	10	Question paper , Rating scale	External

ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

RGPV (Diploma Wing) Bhopal	SCHEME FOR LEARNING		Branch Code			ourse Co	de	CO Code	LO Code	
RGPV (Diploma Wing) Bhopai	OUTCOME	E	0	3	5	0	1	3	9	Format No. 4
COURSE NAME Data and Computer Network	king									

CO Description Compare OSI model and TCP/IP protocol suite.

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1 ()	1100	Crin	tion
LU	DES		UUI

Interpret addressing in TCP/IP network

SCHEME OF STUDY

S. No.	Learning Content	Teaching – Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks
LO-09	Addressing- MAC address; IP Address IPv4, Class full address, Classless address, Netid, Hostid, Sub-netting, super-netting, Masking; IPv6; Port Address; URL; Domain name system	Interactive classroom lecture, PPT, Video, demonstration, quiz, assignments.	Teacher will explain the contents and provide handouts to students. Teacher will conduct assignments/ quiz/tutorial to make students practice their knowledge.	6		Text Books, PPT, Handouts, chalk board, charts, Video lecture- NPTEL and others.	

SCHEME OF ASSESSMENT

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal
LO-09	End Semester Theory Exam	 Student will be asked to Compare MAC address, IP address, Port address Describe MAC address format. Classify IP address. Define subnetting, supetnetting, masking. 	10	Rubrics, Rating scale	External

RGPV (Diploma Wing) Bhopal

SCHEME FOR LEARNING OUTCOME

Ві	ranch Coc	le	Co	urse Co	de	CO Code	LO Code	4
Ε	0	3	5	0	1	4	10	Format No. 4

COURSE NAME	Data and Computer Networking	·				
CO Description	Manage computer network and host websites.					
LO Description	Install and configure application layer software.					_

SCHEME OF STUDY

S. No.	Learning Content	Teaching — Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks
LO-10	Install and configure Web browser and OS firewall. Client software of email (outlook, thunderbird), telnet (dos, putty etc.) and ftp (FileZilla).	Lab demonstration, PPT, hands on practice, lab assignments.	 Teacher will explain the content in class/lab. Teacher with support from lab staff will demonstrate the procedure of lab experiments. Student will conduct lab assignment based on these experiments. 		6	Lab manual, charts, Handouts, experimental trainer instruments /kit with measuring instruments, computer with relevant simulation software and high speed internet	

SCHEME OF ASSESSMENT

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal
LO-10	Practical test in laboratory	 Student will be asked to (and/or): Install and configure Web browser and OS firewall. Install and configure client software of email (outlook, thunderbird). Install and configure telnet (dos, putty etc.) and ftp (FileZilla). 	15	Question paper, Rating scale.	External

DCD\	/ /Diplo	oma Wing) Bh	onal S	SCHEME FOR LEARNING		Branc	Branch Code			ourse C	code CO		de Code	
KGPV	/ (Dipio	oma wing j bii	Ораі		DUTCOME	E	0 3 5 0 1 4 11 FOR					Format No. 4		
COURSE NAME Data and Computer Netwo			Networking											
CO Description Manage computer in		network and ho	etwork and host websites.											
LO Description Manage and control LAN /E			l LAN /Etherne	et networ	k									
		1			SCHEME OF STUDY									
S. No.	Lea	rning Content	Teachin Learning M	•	Description of T-L Process		ch s.	Pract. /Tut Hrs.		-	LR	Rs Required		Remark
LO-11	monitori manager Bandwid Packet m and cont (authent authoriza accounting	Lé			 Teacher will explain the content in class/lab. Teacher with support from lab staff will demonstrate the procedure of lab experiments. Student will conduct lab assignment based on these experiments. 		-		8		Hand- board	e- NP		
					SCHEME OF ASSESSMENT									·
S. No.	Method	l of Assessment	De	escriptio	n of Assessment	Max	imı	ım N	1arks	R	Resour	ces R	equire	d External Interna

LO-11 Practical test in laboratory			 Perform Network monitoring and management functions like- Bandwidth management, Packet management, URL and content filtering using wireshark, spiceworks, etc. Install and configure antivirus. 				15		Question paper, Rating scale.				ing	External	
			AD	DITIONAL IN	STRUCTIONS FOR THE HOD/ I	FACUL1	Y (IF A	NY)							
RGP\	/ (Diplo	oma Wing) Bh	opal	0 011111	ME FOR LEARNING OUTCOME		Code		ourse Co	de 1	CO Code	LO Code	Forn	mat No. 4	
COURS	SE NAME	Data and Compute	r Netwo												
CO Des	cription	Manage computer	network	and host web	sites.										
LO Des	cription	Develop and host w	ebsite.												
					SCHEME OF STUDY										
S. No.	Lea	rning Content		aching – ing Method	Description of T-L Process	Teacl Hrs.	. -	ract. ut Hrs.		LRs	Req	uired		Remarks	
	Create web pages using Content Management System (eg. Joomla, Drupal, Wordpress). Domain name registration and web hosting Process.			emonstration, ands on ce, lab ments.	 Teacher will explain the content in class/lab. Teacher with support from lab staff will demonstrate 			8		Lab manual, charts, Handouts, experimental trainer instruments/kit with measuring instruments, computer with relevant simulation software and high speed internet.					

SCHEME OF ASSESSMENT

Description of Assessment

Method of Assessment

S. No.

External /

Internal

Resources Required

Maximum Marks

													External /	
	and application of different Computer Networks technologies: Bluetooth, Wi- Fi, USB, DSL,FTTH.		etworks oth, Wiassignments. PPT, Video, demonstration, quiz, assignments. PPT, Video, handouts to sture assignments of the make studen their knowledge.		contents and provide handouts to students. Teacher will conduct assignments/ quiz/tutorial to make students practice their knowledge. SCHEME OF ASSESSMEN	T			boa Vid	ard, ch leo leo	,			
S. No. LO-13	Lea	ning Content Teaching – Learning Method on, architecture Interactive			thod Process Teacher will explain the	Teach Hrs.		Pract. /Tut Hrs.		LRs Required Text Books, PPT,			Remarks	
			_		SCHEME OF STUDY									
LO Des	cription	Compare architectu	re of cur	rent computer	network technologies.									
	cription	Identify current and		•										
	SE NAME	Data and Computer												
RGPV (Diploma Wing) Bh		opai	(DUTCOME	E	3	5	0	1	5	13	Format No. 4		
DCD/	/ /Dinlo	ma Wing \ Ph	onal	SCHEM	E FOR LEARNING	Branc	n Code	C	ourse Co	de	CO Code	LO Code		
						-	•	•						
			AD	DITIONAL INS	TRUCTIONS FOR THE HOD	/ FACUL	Y (IF A	NY)						
			Perform Domain name registration and web hosting.											
LO-12 Practi		Practical test in laboratory		1. Create web pages using Content Management System (eg. Joomla, Drupal, Wordpress).			10			Rubrics, Rating scale			Internal	

LO-13 Question Paper -External- End Sem Exam			 Student will be asked to(and/or): Differentiate between Bluetooth,USB, WiFi network. Describe different Computer Networks technologies: Bluetooth, Wi-Fi, USB, DSL,FTTH. 			10			Question paper, Rating scale.				External	
			AD	DITIONAL INS	TRUCTIONS FOR THE HOD/	FACUL	ΓΥ (IF	AN	Y)					
RGPV	/ (Diplo	oma Wing) Bł	nopal	0 0112111	E FOR LEARNING OUTCOME		h Code	3	Co	urse Co	de 1	co Code	LO Code	Format No. 4
COURS	E NAME	Data and Compute	er Netwo		70100III2									
CO Des	cription	Identify current an	d future o	computer netwo	ork technologies.									
LO Des	cription	Define upcoming d	ata techr	nologies.										
					SCHEME OF STUDY									
S. No.	Lea	rning Content		eaching – ning Method	Description of T-L Process	Teach Hrs.		Pract. /Tut Hrs.			LRs R	equire	ed	Remarks
LO-14	O-14 Cloud: definition, architecture and services; Introduction of Artificial Intelligence, Machine learning, Block chain and Data Mining		classroom lecture, pf Artificial Machine k chain and classroom lecture, pPT, Video, demonstration, quiz, Seminar contents and prehamouts to sturn and prehamouts to sturn and prehamouts to sturn and prehamouts and p		Teacher will explain the contents and provide handouts to students. Teacher will conduct assignments/ quiz/tutorial to make students practice their knowledge.	6	6		-	Ha boa Vid	ndout ard, ch leo lec	oks, PPT, s, chalk narts, cture- and others.		
					SCHEME OF ASSESSMENT									
S. No. Method of Assessment			Description of Assessment			Maximum Marks			Resources Required			External / Internal		

LO-14	Internal- Assignment /Progressive	Student will be asked to (and/or): 1. Define architecture and services of Cloud. 2. Define Machine Learning. 3. Define Data mining. 4. Define Block chain.	10	Question paper, Rating scale.	Internal
		ADDITIONAL INSTRUCTIONS FOR THE HOD/	FACULTY (IF ANY)		