SHRI VENKATESHWARA UNIVERSITY

Syllabus

M.TECH (VLSI)

(Two Years Post Graduation Programme)
III SEMESTER

(w.e.f. 2019-20)

SCHOOL OF ENGINEERING & TECHNOLOGY

SEMESTER-III													
Sl. No.	**Subject Codes**	**Subject**	**Periods**			**Evaluation Scheme**				**End Semester**		Total	Credit
			L	T	P	CT	TA	Total	PS	TE	PE		
1	MVI-051	Communication Network	3	0	0	20	10	30		70		100	3
2	MOE-335	Composite Materials	3	0	0	20	10	30		70		100	3
3	MVI-321	Dissertation Phase – I	0	0	20				125		125	250	10
		Total										450	16

Code	Course Name	L-T-P	Cr.
WVI-051	Communication Network	3-0-0	3

Course Outcomes: At the end of the course, students will be able to:

- Analyze protocols and algorithms, acknowledge tradeoffs and rationale
- Use routing, transport protocols for the given networking scenario andapplication
- Evaluate and develop small network applications

Syllabus Contents:

Unit 1: Introduction:

- Network Architecture, Performance

Unit 2: Connecting nodes:

- Connecting links, Encoding, framing, Reliable transmission, Ethernet and Multiple access networks, Wireless networks

Unit 3: Queuing models

- For a) one or more servers b) with infinite and finite queue size c) Infinite population

Internetworking:

- Switching and bridging, IPv4, Addressing, Routing Protocols, Scale issues, Routers - Architecture, IPv6

Unit 4: End-to-End Protocols:

- Services, Multiplexing, De-multiplexing, UDP, TCP, RPC, RTP

Unit 5: Congestion control and Resource Allocation

- Issues, Queuing disciplines, TCP congestion control, Congestion Avoidance, QoS Applications:

Code	Course Name	L-T-P	Cr.
WOP -535	Composite Materials	3-0-0	3

Syllabus & Content:

Unit No.	Content
1	**INTRODUCTION:** Definition – Classification and characteristics of Composite materials. Advantages and application of composites. Functional requirements of reinforcement and matrix. Effect of reinforcement (size, shape, distribution, volume fraction) on overall composite performance.
2	**REINFORCEMENTS:** Preparation-layup, curing, properties and applications of glass fibers, carbon fibers, Kevlar fibers and Boron fibers. Properties and applications of whiskers, particle reinforcements. Mechanical Behavior of composites: Rule of mixtures, Inverse rule of mixtures. Isostrain and Isostress conditions.
3	Manufacturing of Metal Matrix Composites: Casting – Solid State diffusion technique, Cladding – Hot isostatic pressing. Properties and applications. Manufacturing of Ceramic Matrix. Composites: Liquid Metal Infiltration – Liquid phase sintering. Manufacturing of Carbon – Carbon composites: Knitting, Braiding, Weaving. Properties and applications.
4	Manufacturing of Polymer Matrix Composites: Preparation of Moulding compounds and prepregs – hand layup method – Autoclave method – Filament winding method – Compression moulding – Reaction injection moulding. Properties and applications.
5	Strength: Laminar Failure Criteria-strength ratio, maximum stress criteria, maximum strain criteria, interacting failure criteria, hygrothermal failure. Laminate first play failure-insight strength; Laminate strength-ply discount truncated maximum strain criterion; strength design using caplet plots; stress concentrations.

TEXT BOOKS:

- Material Science and Technology – Vol 13 – Composites by R.W.Cahn – VCH, West Germany.

- Materials Science and Engineering, An introduction. WD Callister, Jr., Adapted by R. Balasubramaniam, John Wiley & Sons, NY, Indian edition, 2007.

References:

- Hand Book of Composite Materials-ed-Lubin.
- Composite Materials – K.K.Chawla.
- Composite Materials Science and Applications – Deborah D.L. Chung.

- Composite Materials Design and Applications – Danial Gay, Suong V. Hoa, and Stephen W. Tasi.

- Domain Name Resolution, File Transfer, Electronic Mail, WWW,Multimedia Applications

Unit 6: Network monitoring – Packet sniffing tools such as Wireshark Simulationsusing NS2/OPNET

References:

- Larry L. Peterson, Bruce S, Devie, "Computer Networks" , MK, 5th Edition
- Aaron Kershenbaum, "Telecommunication Network Design Algorithms", MGH,International Edition 1993.
- Vijay Ahuja, "Communications Network Design and Analysis of Computer Communication Networks", MGH, International Editions.
- Douglas E. Comer, "Internetworking with TCP/IP", Pearson Education, 6th Edition