BIRLA INSTITUTE OF TECHNOLOGY- MESRA, RANCHI

NEWCOURSE STRUCTURE - ***To be effective from academic session 2018- 19***

Based on CBCS & OBE model

Recommended scheme of study for M.Tech. in Wireless Communication

SEMESTER / Session of Study (Recomended)	Course Level	Category of course	Course Code	Courses	Mode of delivery & credits *L-Lecture; T-Tutorial;P-Practicals*			Total Credits *C- Credits*
					L (*Periods/week*)	T (*Periods/week*)	P (*Periods/week*)	C
FIRST / Monsoon	FIFTH	Programme Core (PC)	EC 510	Wireless Communication and Networks	3	0	0	3
			EC 512	Stochastic Processes and Information Theory	3	0	0	3
			EC 503	Antennas and Diversity	3	0	0	3
		Programme Elective (PE)		PE-I	3	0	0	3
		Open elective (OE)		OE-I	3	0	0	3
		LABORATORIES						
		Programme Core (PC)	EC 504	Antenna Lab	0	0	4	2
			EC 511	Wireless Communication Lab	0	0	4	2
		TOTAL						**19**
SECOND / Spring	FIFTH	Programme Core (PC)	EC 560	Wireless Signal Propagation & Fading	3	0	0	3
			EC 563	Detection and Estimation Theory	3	0	0	3
			EC 564	Coding Theory and Applications	3	0	0	3
		Programme Elective (PE)		PE-II	3	0	0	3
		Open Elective (OE)		OE-II	3	0	0	3
		LABORATORIES						
		Programme Core (PC)	EC 561	Wireless Networking Lab.	0	0	4	2
			EC 562	Advanced wireless System Design Lab	0	0	4	2
		TOTAL						**19**
TOTAL FOR FIFTH LEVEL								**38**
THIRD / Monsoon	SIXTH	Programme Core (PC)	EC600	Thesis (Part I)				8
			EC 601	Advanced Wireless Communication	3	0	0	3
		Programme Elective (PE)		PE-III	3	0	0	3
		Massive Open Online Course		MOOC				2
		TOTAL						**16**
FOURTH / Spring	SIXTH	Programme Core (PC)	EC650	Thesis (Part II)				16
		TOTAL						**16**
TOTAL FOR SIXTH LEVEL								**32**
GRAND TOTAL FOR M.TECH PROGRAMME (38 + 32)								**70**

List of Programme Elective (PE)(choose one from each)

PE-I	EC 513	Spread Spectrum Techniques & Multiples Access
	EC 522	Advanced Digital Signal Processing
	EC 515	Wireless Adhoc and Sensor Networks
	EC 516	Wireless Multimedia Communication
	EC 517	Satellite Based Wireless Communication
	EC 509	RF Microelectronics Circuit Design
PE-II	EC 565	Space Time Wireless Communication
	EC 566	Optical Wireless Communication
	EC 551	RF Circuit Design
	EC 558	Modern Optimization Techniques
	EC 559	Mixed Signal VLSI Design
PE-III	EC 605	Cognitive Radio Communication and Networks
	EC 606	Advanced Error Control Codes
	EC 607	Markov Chain and Queuing System
	EC 608	Statistical Signal Processing
	EC 631	FPGA based System Design

Massive Open Online Course (MOOC)(choose one)

EC615	Basics of Software Defined Radio and practical applications
EC616	High Speed Semiconductor Devices
EC617	Nanoelectronic Devices and Materials

DEPARTMENT OF ECE

PROGRAMME ELECTIVES (PE)

OFFERED FOR LEVEL 5-6 of M. Tech. in Wireless Communication

PE / Level	Code no.	Name of the PE courses	Prerequisite/Corequisite courses with code	L	T	P	C
PE / Level-5 (MO)	EC 513	Spread Spectrum Techniques & Multiples Access	EC 510 Wireless Communication and Networks, EC301 Digital communication	3	0	0	3
	EC 522	Advanced Digital Signal Processing	EC305 Signal Processing Technique, EC251 Probability and Random Processes	3	0	0	3
	EC 515	Wireless Adhoc and Sensor Networks	EC 510 Wireless Communication and Networks, EC367 Computer Networking	3	0	0	3
	EC 516	Wireless Multimedia Communication	EC 431 Multimedia Communication	3	0	0	3
	EC 517	Satellite Based Wireless Communication	EC369 Wireless Networks, EC419 Satellite Communication	3	0	0	3
	EC509	RF Microelectronics Circuit Design	EC201 Electronic Devices, EC253 Analog Circuits	3	0	0	3
PE / Level-5 (SP)	EC 565	Space Time Wireless Communication	EC 510 Wireless Communication and Networks, EC325 Antenna and Wave Propagation	3	0	0	3
	EC 566	Optical Wireless Communication	EC351 Fiber Optic Communication	3	0	0	3
	EC 551	RF Circuit Design	EC257 Electromagnetic Fields and Waves, EC323 Microwave Theory and Techniques	3	0	0	3
	EC 558	Modern Optimization Techniques	MA203 Numerical Methods, MA204 Numerical Methods Lab	3	0	0	3
	EC 559	Mixed Signal VLSI Design	EC253 Analog Circuits, EC203 Digital system Design	3	0	0	3
PE / Level-5 (MO)	EC 605	Cognitive Radio Communication and Networks	EC 510 Wireless Communication and Networks	3	0	0	3
	EC 606	Advanced Error Control Codes	EC564 Coding theory and Applicaions	3	0	0	3
	EC 607	Markov Chain and Queuing System	EC329 Information Theory and Coding, EC251 Probabaility and Ranndom Processes	3	0	0	3
	EC 608	Statistical Signal Processing	EC251 Probability and Random Processes, EC305 Signal Processing Technique	3	0	0	3
	EC 631	FPGA based System Design	EC361 Digital Systems Design with FPGAs	3	0	0	3

*** PROGRAMME ELECTIVES TO BE OPTED ONLY BY THE DEPARTMENT STUDENTS**

DEPARTMENT OF ECE

OPEN ELECTIVES (OE)*

OFFERED FOR LEVEL 5-6 of M. Tech. in Wireless Communication

OE / LEVEL	Code no.	Name of the OE courses	Prerequisites courses with code	L	T	P	C
OE/Level-5 (MO)	EC 548	Introduction to Wireless Communication		3	0	0	3
OE/Level-5 (SP)	EC 598	Overview of Mobile Communication		3	0	0	3

*** OPEN ELECTIVES TO BE OPTED ONLY BY OTHER DEPARTMENT STUDENTS**