BIRLA INSTITUTE OF TECHNOLOGY- MESRA, RANCHI NEWCOURSE STRUCTURE - To be effective from academic session 2018- 19										
Based on CBCS & ORE model										
Recommended scheme of study										
	B. Tech. in Electrical and Electronics Engineering									
	1									
Semester/ Session of	Course Level	Category	Course Code	Courses	Mod L-Lectur	Mode of delivery & credits L-Lecture; T-Tutorial;P-Practicals				
Study (Recomended)		of course			L (Periods/week)	T (Periods/week)	P (Periods/week)	С		
			GR	AND TOTAL FOR FIRST YEAR				43.5		
				THEO	RY	-				
	FIRST	FS	BE101	Biological Science for Engineers	2	0	0	2		
	SECOND	GE	IT 201	Basics of Intelligent Computing	3	0	0	3		
			EE201	Electrical Measurement & Instrumentation	3	0	0	3		
		PC	EE203	Electrical Energy Generation & Control	3	0	0	3		
THIRD			EC203	Digital System Design	3	0	0	3		
Monsoon			EE205	Circuit Theory	J J	1	0	4		
	FIDST	CE	EE102	Electrical Engineering Laboratory		0	3	1.5		
	SECOND	MC	LEI02	Electrical Engineering Eaboratory	0	0	5	1.5		
			MC201/202/	Choice of : NCC/NSS/		0	2	1		
			203/204	PT & Games/ Creative Arts (CA)						
		PC	EC204	Digital System Design Laboratory	0	0	3	1.5		
				TOTAL				22		
				THEO	RY					
	SECOND	FS	MA203	Numerical Methods	2	0	0	2		
	FIRST	FS	CE101	Environmental Science	2	0	0	2		
		PC	EE251	DC Machines & Transformers	3	1	0	4		
			EE253	Engineering Electromagnetics	3	1	0	4		
FOURTH	SECOND	Open Elective OE		Open Elective-I	3	0	0	3		
Spring	-			LABORAT	ORIES					
1 0		FS	MA204	Numerical Methods Laboratory	0	0	2	1		
		GE	IT202	Basic IT Workshop	0	0	2	1		
	SECOND	SECOND	MC	MC205/206/ 207/208	Choice of : NCC/NSS/ PT & Games/ Creative Arts (CA)	0	0	2	1	
		-	EE252	Electrical Machine Laboratory óI	0	0	3	1.5		
		PC	EE202	Electrical Measurement & Instrumentation Laboratory	0	0	3	1.5		
	•	•	•	TOTAL				21		

Sensitive sector in the		Ν	EWCOUI	RSE STRU	CTURE - To be effective from a Based on CBCS & OBE mode Recommended scheme of stud	academic sessio el ly	on 2018- 19		
Sense Solitory (Reconneeded)     Largery biology     Argery of course     Cargery biology     Cargery biology <thcargery biology     <thcargery biology     &lt;</thcargery </thcargery 				B.Tech.	in Electrical and Electronics El	ngineering Mod	e of delivery & cr	edits	Total Credits
Introduction in the second s	Semester/ Session of Study (Recomended)	Course	Category	Course Code	Courses	L-Lectur	C- Credits		
FIFTH Monsoon     FIFTH FIFTH Monsoon     FIFTH FIFTH FIFTH Monsoon     FIFTH FIFTH FIFTH FIFTH Monsoon     FIFTH FIF		Level	of course		Courses	L (Periods/week)	T (Periods/week)	P (Periods/week)	С
$ \begin{tabular}{ c c c c c c c } Figure 1 & Figure 1 & Figure 2 & Figure 2$						THEORY			
FIFTH MonsoonFIRSTFIRSDF				EE301	AC Rotating Machines	3	0	0	3
$  \  \  \  \  \  \  \  \  \  \  \  \  \$			PC	EE303	Introduction to Microprocessors & Microcontrollers	3	0	0	3
FIFTH Morsoon     Initial PE     per Per Per Per Per Per Per Per Per Per P		THIPD		EE305	Digital Signal Processing	3	1	0	4
MOBSON     PE     Program Elective -1     3     0     0     3       OE     Open Elective -1I     3     0     0     3     1.5       THIRD     PC     EE302     Electrical Machine Laboratory OII     0     0     3     1.5       THIRD     PC     E302     Electrical Machine Laboratory     0     0     3     1.5       TOTAL     TOTAL     0     0     3     1.5       THIRD     PC     E351     Control Theory     3     1     0     4       EE355     Power Electronics     3     1     0     4     3     0     0     3     1     0     4     3     0     0     3     1     0     4     3     0     0     3     1     0     4     3     0     0     3     0     0     3     0     0     3     0     0     3     1     0     4     3     0     0	FIFTH Monsoon	THIRD		EE307	Electrical Power Transmission & Distribution	3	0	0	3
Image: book of the state of			PE		Program Elective -I	3	0	0	3
Image: height of the second			OE		Open Elective -II	3	0	0	3
					LABORA	TORIES	-	-	
			THIRD PC	EE302	Electrical Machine Laboratory óII	0	0	3	1.5
		THIRD		EC304	Microprocessors & Microcontrollers Laboratory	0	0	3	1.5
$ \begin{split} \begin{tabular}{ c c c c } \hline $V$ $$ $$ $$ $$ $$ $$ $$ $$ $$ $$ $$ $$$	EE306  Digital Signal Processing Laboratory 0 0 3								1.5
$ \begin{tabular}{ c c c c c } \hline FOURTH \\ \end{tabular} Nonsoon \\ \end{tabular} Further \\ \end{tabular} Fourth \\ $		1			IUIAL	THEODY			23.5
$ \begin{tabular}{ c c c c c } \hline PC & boost &$		THIRD		FF351	Control Theory		1	0	4
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $			PC	EE353	Power Electronics	3	1	0	4
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$				EE355	Power System Analysis	3	0	0	3
			PE		Program Elective-II	3	0	0	3
	SIVTU		OE		Open Elective-III / MOOC-I	3	0	0	3
	Spring	FIRST	HSS	MT123	Business Communications	3	0	0	3
$\begin{tabular}{ c c c c c } \hline  c c c c c c c c c c c c c c c c c c $	Spring	SECOND	HSS	MT204	Constitution of India				0 Non-credit
$\begin{tabular}{ c c c c c } \hline $$ LABORATORIES$$$ $$ $$ $$ $$ $$ $$ $$ $$ $$ $$ $$ $$$						2	0	0	rion eredit
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $			DC	EE252	LABORA	TORIES	0	2	1.5
$\begin{array}{ c c c c c } \hline \begin{tabular}{ c c c c c c c c c c c c c c c c c c c$		TUIDD	PC	EE352 EE354	Electrical Workshop	0	0	3	1.5
SEVENTH Monsoon     PC     EE401     Switchgear and Protection     3     1     0     4       Monsoon     PC     EE401     Switchgear and Protection     3     1     0     4       Monsoon     PC     EE403     Professional Practice Law & Ethics     2     0     0     2       PE     Program Electve-III     3     0     0     3		TIME	MC	MC300	Summer Training -Mandatory	0	0	5	3
THEORY   THEORY   FOURTH   FOURTH PC EE401 Switchgear and Protection 3 1 0 4   Monsoon PF Program Electve-III 3 0 0 3   Monsoon PE Program Electve-III 3 0 0 3   Monsoon PE Program Electve-III 3 0 0 3   FOURTH PE Open Elective-IV / MOOC-II 3 0 0 3   FOURTH PC EE402 Power System Laboratory 0 0 3 1.5   FOURTH PC EE404 Power Electronics Laboratory 0 0 3 1.5   FOURTH PC EE406 Simulation Laboratory 0 0 2 1   Industry Internship Industry Internship   EIGTH FOURTH PC EE400 Research proj		1			TOTAL	I	1	1	26
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $					THE	ORY			
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $			PC	EE401	Switchgear and Protection	3	1	0	4
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $			HSS	EE403	Professional Practice Law & Ethics	2	0	0	2
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $		FOURTH	PE		Program Electve-III	3	0	0	3
$\begin{tabular}{ c c c c c c c c c c c c c c c c c c c$	SEVENTH		12		Program Electve-IV	3	0	0	3
$\begin{tabular}{ c c c c c } \hline $FOURTH$ & $PC$ & $EE402$ & $Power System Laboratory$ & $0$ & $0$ & $3$ & $1.5$ \\ \hline $FOURTH$ & $PC$ & $EE404$ & $Power Electronics Laboratory$ & $0$ & $0$ & $0$ & $3$ & $1.5$ \\ \hline $PC$ & $EE406$ & $Simulation Laboratory$ & $0$ & $0$ & $0$ & $2$ & $1$ \\ \hline $PC$ & $EE406$ & $Simulation Laboratory$ & $0$ & $0$ & $0$ & $2$ & $1$ \\ \hline $FOURTH$ & $PC$ & $EE406$ & $Simulation Laboratory$ & $0$ & $0$ & $0$ & $2$ & $1$ \\ \hline $FOURTH$ & $PC$ & $EE406$ & $Simulation Laboratory$ & $0$ & $0$ & $0$ & $2$ & $1$ \\ \hline $FOURTH$ & $PC$ & $EE400$ & $Simulation Laboratory$ & $0$ & $0$ & $0$ & $2$ & $1$ \\ \hline $FOURTH$ & $PC$ & $EE400$ & $Research project / $Industry Internship$ & $1$ & $1$ & $1$ \\ \hline $GRAND TOTAL$ & $$167$ & $167$$	Monsoon		OE		Open Elective-IV / MOOC-II	3	0	0	3
$\begin{array}{c c c c c c c c c c c c c c c c c c c $			pc	EE402	LABURATORI	0	0	2	1.5
PC     EE406     Simulation Laboratory     0     0     3     1/3       PC     EE406     Simulation Laboratory     0     0     0     2     1       TOTAL     19       EIGTH Spring     FOURTH     PC     EE400     Research project / Industry Internship     12     12		FOURTH	PC	EE402 FF404	Power Electronics Laboratory	0	0	3	1.5
EIGTH Spring FOURTH PC EE400 Research project / Industry Internship Image: Constraint of the second se		rookiii	PC	EE406	Simulation Laboratory	0	0	2	1.5
EIGTH Spring FOURTH PC EE400 Research project / Industry Internship 12		1	10	22100	TOTAL		v	~	19
GRAND TOTAL 167	EIGTH Spring	FOURTH	PC	EE400	Research project / Industry Internship				12
			1		GRAND TOTAL	l	1	I	167

BIRLA INSTITUTE OF TECHNOLOGY- MESRA, RANCHI

		BIRLA IN DEPARTMENT O NEWCOURSE STF <i>LIST C</i>	STITUTE OF TECHNOLOGY- MESRA, RA F ELECTRICAL AND ELECTRONICS ENG WCTURE - To be effective from academic sess Based on CBCS & OBE model FF PROGRAM ELECTIVES (B. Tech., - EEE)	NNCHI INEERING <i>ion 2018- 19</i>			
Lovel of	Course			Mode L-Lectur	Total Credits C- Credits		
Study	Code	Courses	Pre-requisites	L (Periods/ week)	T (Periods/ week)	P (Periods/ week)	С
			Programme Elective - I	-	I		
	EE413	Sensors and Transducers	EE201 Electrical Measurement & Instrumentation	3	0	0	3
	EE415	Bio-Instrumentation and Concepts	EE201 Electrical Measurement & Instrumentation	3	0	0	3
	EE357	Electronic Devices and Analog Circuits	EC101 Basics of Electronics & Communication Engineering	3	0	0	3
3	EE421	Information Technology		3	0	0	3
	EE427	Soft Computing Techniques	MA103 Mathematics - I MA107 Mathematics - II	3	0	0	3
	EE449	Artificial Intelligence for Electrical Engineering	MA103 Mathematics - I MA107 Mathematics - II	3	0	0	3
	EE447	Machine Learning	MA103 Mathematics - I MA107 Mathematics - II	3	0	0	3
		·	Programme Elective - II				
	EE417	Fundamentals of Communication System	EC101 Basics of Electronics & Communication Engineering	3	0	0	3
	EE411	Microprocessor Applications	EE303 Introduction to Microprocessors & Microcontrollers	3	0	0	3
	EE419	Special Electrical Machines	EE251 DC Machines and Transformer EE301 AC Rotating Machines	3	0	0	3
3	EE443	Utilization of Electrical Power	EE101 Basics of Electrical Engineering EE307 Electrical Power Transmission and Distribution	3	0	0	3
	EE445	Testing and Commissioning of Electric Equipment	EE251 DC Machines and Transformer EE301 AC Rotating Machines	3	0	0	3
	EE425	Robotics	EE351 Control Theory	3	0	0	3
			Programme Elective - III				
	EE423	VLSI Systems	EC101 Basics of Electronics & Communication Engineering	3	0	0	3
	EE573	Embedded System and Applications	EE101 Basics of Electrical Engineering EC101 Basics of Electronics & Communication Engineering	3	0	0	3
	EE531	EHV AC Power Transmission	EE307 Electrical Power Transmission and Distribution EE355 Power System Analysis	3	0	0	3
4	EE437	Industrial Drives and Control	EE353 Power Electronics EE351 Control Theory	3	0	0	3
	EE439	Applied Control Theory	EE351 Control Theory	3	0	0	3
	EE597	Reliability Engineering	MA103 Mathematics - I MA107 Mathematics - II	3	0	0	3
	EE441	Computer Aided Power System Analysis	EE307 Electrical Power Transmission and Distribution EE355 Power System Analysis	3	0	0	3

		BIRLA IN DEPARTMENT OI NEWCOURSE STR <i>LIST O</i>	STITUTE OF TECHNOLOGY- MESRA, RAN F ELECTRICAL AND ELECTRONICS ENGI UCTURE - To be effective from academic sessio Based on CBCS & OBE model F PROGRAM ELECTIVES (B. Tech EEE)	NCHI NEERING on 2018- 19						
Loval of	6			Mode L-Lectur	Total Credits C- Credits					
Study	Code	Courses	Pre-requisites	L (Periods/ week)	T (Periods/ week)	P (Periods/ week)	С			
	Programme Elective - IV									
	EE593	High Voltage Engineering	EE101 Basics of Electrical Engineering EE201 Electrical Measurement & Instrumentation EE253 Engineering Electromagnetics	3	0	0	3			
	EE535	HVDC and FACTS	EE307 Electrical Power Transmission and Distribution EE355 Power System Analysis EE353 Power Electronics	3	0	0	3			
	EE507	Advanced Power Electronics	EE353 Power Electronics	3	0	0	3			
4	EE539	Power System Dynamics	EE307 Electrical Power Transmission and Distribution EE355 Power System Analysis	3	0	0	3			
	EE585	Hybrid Electric Vehicle	EE251 DC Machines and Transformer EE301 AC Rotating Machines EE353 Power Electronics	3	0	0	3			
	EE605	Micro-grid Operation and Control	EE307 Electrical Power Transmission and Distribution EE355 Power System Analysis EE353 Power Electronics	3	0	0	3			

	BIRLA INSTITUTE OF TECHNOLOGY- MESRA, RANCHI DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING NEWCOURSE STRUCTURE - <i>To be effective from academic session 2018- 19 Based on CBCS &amp; OBE model</i> <i>LIST OF OPEN ELECTIVES (UG)</i>									
Level of	Course Code	Courses	Pre-requisites	Mode L-Lectur	Total Credits C- Credits					
Study		Courses		L (Periods/ week)	T (Periods/ week)	P (Periods/ week)	С			
			Open Elective - I	-						
	EE203	Electric Energy Generation & Control	EE101 Basics of Electrical Engineering	3	0	0	3			
2	EE255	Signal and Systems	MA103 Mathematics - I MA107 Mathematics - II EE101 Basics of Electrical Engineering	3	0	0	3			
	•	·	Open Elective - II		•					
	EE359	Introduction to Reliability Engineering	MA103 Mathematics - I MA107 Mathematics - II	3	0	0	3			
3	EE361	Linear Control Theory	EE101 Basics of Electrical Engineering MA107 Mathematics -I	3	0	0	3			
		1	Open Elective - III		1		<u> </u>			
	EE457	Fundamental of Power System	EE101 Basics of Electrical Engineering MA107 Mathematics -I	3	0	0	3			
4	EE459	Introduction to Power Electronics	EE101 Basics of Electrical Engineering	3	0	0	3			
	EE425	Robotics	MA103 Mathematics - I MA107 Mathematics - II	3	0	0	3			
	Open Elective - IV									
4	EE453	Machine Electronics	EE101 Basics of Electrical Engineering EC101 Basics of Electronics & Communication Engineering	3	0	0	3			
	EE427	Soft Computing Techniques	MA103 Mathematics - I MA107 Mathematics - II	3	0	0	3			

BIRLA	INSTITU	TE OF TECHNOLOGY- MESRA, RANCHI OF ELECTRICAL AND	ELECTRONICS ENGINEERING			DEF	ARTMENT			
NEWCOURSE STRUCTURE - To be effective from academic session 2018- 19 Based on CBCS & OBE model Minor Courses For Other Department										
Level of Study	Course Code	Courses	Pre-requisites	<b>Mode of</b> L-Lecture;	Total Credits C- Credits					
				L (Periods/ week)	T (Periods/w eek)	P (Periods/ week)	С			
Minor for CSE & IT										
4	EE421	Power System	EE101 Basic Electrical Engineering EE261 Principle of Electrical Machines	3	0	0	3			
2	EE205	Circuit Theory	EE101 Basic Electrical Engineering	3	1	0	4			
3	EE331	Fundamental of Power Electronics	EE101 Basic Electrical Engineering	3	0	0	3			
2	EE261	Principles of Electrical Machines	EE101 Basic Electrical Engineering	3	1	0	4			
3	EE333	Fundamental of Control Theory	EE101 Basic Electrical Engineering	3	0	0	3			
4	EE412	Power Electronics and Control Laboratory	EE333 Fundamental of Contro Theory EE 331 Fundamental of Power Electronics	0	0	3	1.5			
4	EE414	Electrical Machines and Power System Laboratory	EE261 Principle of Electrical Machines EE421 Power System	0	0	3	1.5			
		м	inor for ECE							
2	EE201	Electrical Measurement and Instrumentation	EE101 Basic Electrical Engineering	3	0	0	3			
3	EE353	Power Electronics	EE101 Basic Electrical Engineering	3	1	0	4			
2	EE261	Principles of Electrical Machines	EE101 Basic Electrical Engineering	3	1	0	4			
4	EE413	Industrial Drives and Control	EE333 Fundamental of Contro Theory EE 331 Fundamental of Power Electronics	3	0	0	3			
4	EE421	Power System	EE101 Basic Electrical Engineering EE261 Principle of Electrical Machines	3	0	0	3			
4	EE412	Power Electronics and Control Laboratory	EE333 Fundamental of Contro Theory EE 331 Fundamental of Power Electronics	0	0	3	1.5			
4	EE414	Electrical Machines and Power System Laboratory	EE261 Principle of Electrical Machines EE421 Power System	0	0	3	1.5			
		Minor for Non Circuital Branches (Mechan	ical, Production, Civil, Chemical and Bio-I	Engineerir	ıg)					
3	EE331	Fundamental of Power Electronics	EE101 Basic Electrical Engineering	3	0	0	3			
2	EE261	Principles of Electrical Machines	EE101 Basic Electrical Engineering	3	1	0	4			
2	EE205	Circuit Theory	EE101 Basic Electrical Engineering	3	1	0	4			
3	EE333	Fundamental of Control Theory	EE101 Basic Electrical Engineering	3	0	0	3			
4	EE421	Power System	EE101 Basic Electrical Engineering EE261 Principle of Electrical Machines	3	0	0	3			
4	EE412	Power Electronics and Control Laboratory	EE333 Fundamental of Contro Theory EE 331 Fundamental of Power Electronics	0	0	3	1.5			
4	EE414	Electrical Machines and Power System Laboratory	EE261 Principle of Electrical Machines EE421 Power System	0	0	3	1.5			