Atal Bihari Vajpayee-Indian Institute of Information Technology and Management
Gwalior-474015 (MP)
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B.Tech. in Electrical and Electronics Engineering (169 credits)

SEMESTER -1

Sl no	Course Code	Subjects	Credits	L-T-P
1	EE101	Fundamentals of Electrical and Electronics	4	3-0-2
2	ES101	Engineering Physics	4	3-0-2
3	ES102	Engineering Mathematics	4	3-1-0
4	EE102	Engineering Design Principles	3	2-0-2
5	CS101	Principles of Computer Programming	4	3-0-2
6	HS101	Freshman Skills	2	2-0-0
7	HS102	Sports and Physical Education	2	0-1-2
		Total	**23 credits**	

SEMESTER -2

Sl no	Course Code	Subjects	Credits	L-T-P
1	EE103	Digital Electronics	4	3-0-2
2	ES103	Probability and Statistics	4	3-1-0
3	IT102	Data Structures	4	3-0-2
4	EE104	Hardware Workshop	3	2-0-2
5	CS103	Object Oriented Programming	4	3-0-2
6	HS103	Ecology and Environment Sciences	2	2-0-0
7	CS104	Mobile Application Technologies	2	0-1-2
		Total	**23 credits**	
	MO101	MOOC1 (Optional in Summer)	2/3	

EXIT AFTER YEAR – 1. **Certificate in Engineering Sciences (46 credits)**

SEMESTER -3

Sl no	Course Code	Subjects	Credits	L-T-P
1	HS201	Indian Culture, Ethics and Moral Values	2	2-0-0
2	EE207	Signals & Systems	4	3-1-0
3	EE202	Network Analysis & Synthesis	4	3-1-0
4	CS202	Computer Organization & Architecture	4	3-0-2
5	EE203	Microelectronics: Devices and Materials	4	3-0-2
6	EE208	Electromagnetic theory	4	3-1-0
		Total	**22 credits**	

SEMESTER -4

Sl no	Course Code	Subjects	Credits	L-T-P
1	MS619	Entrepreneurship and Innovation	2	2-0-0
2	EE302	System Design using HDL	4	3-0-2
3	EE303	Microprocessor and Interfacing	4	3-0-2
4	EE201	Principles of Communication	4	3-0-2
5	EE204	Analog Electronics	4	3-0-2
6	EE209	Control System	4	3-1-0
		Total	**22 credits**	
	MO101	MOOC2 (Optional in Summer)	2	

EXIT AFTER YEAR - 2 **Diploma in Electrical and Electronics Engineering (90 credits)**

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SEMESTER -5

Sl no	Course Code	Subjects	Credits	L-T-P
1	MS603	Business Economics	3	3-0-0
2		Multidisciplinary / Open Elective- 1/MOOC3	3	3-0-0
3		Department Elective-1	3	3-0-0
4	EE301	Digital Signal Processing	4	3-0-2
5	EE205	VLSI Design	4	3-0-2
6	EE206	Wireless Communication	4	3-1-0
		Total	**21 credits**	

SEMESTER - 6

Sl no	Course Code	Subjects	Credits	L-T-P
1	EN301	Art of Engineering Research	2	2-0-0
2		Multidisciplinary / Open Elective- 2/ MOOC4	3	3-0-0
3		Department Elective-2	3	3-0-0
4	EE304	IoT and Applications	4	3-0-2
5	EE305	RF Circuit & Antenna Design	4	3-0-2
6	EE306	Microcontroller and Embedded Systems	4	3-0-2
		Total	**20 credits**	

Colloquium of 3 credits in summer semester (MOOC, NPTEL etc. in lieu of colloquium)

EXIT AFTER YEAR - 3 ➤ **BSc in Electrical and Electronics Engineering (131 credits)**

SEMESTER - 7

Sl no	Course Code	Subjects	Credits	L-T-P
1		Multidisciplinary / Open Elective- 3/MOOC5	3	3-0-0
2		Department Elective -3	3	3-0-0
3	EE401	Trustworthy AI and Machine learning	4	3-0-2
4	EE402	Intelligent Transportation Systems	3	3-0-0
5	EE403	Power Electronics	4	3-0-2
6	EE404	IC Technology	3	3-0-0
7	EE498	Colloquium (Based on industrial training)/MOOC	3	0-0-6
		Total	**23 credits**	

SEMESTER - 8

Sl no	Course Code	Subjects	Credits	L-T-P
1	EE499	BTech Project/Internship	12	0-0-24
2		Multidisciplinary / Open elective – 4 / MOOC6	3	3-0-0
		Total	**15 credits**	

FINAL EXIT AFTER YEAR – 4 ➤ **B.Tech. in Electrical and Electronics Engineering (169 credits)**

Courses for the Minor in EEE (Total 24 credits required)

Sl	Code	Course Name	Credits	L-T-P
1	EE207	Signals & Systems	4	3-1-0
2	EE204	Analog Electronics	4	3-0-2
3	EE205	VLSI Design	4	3-0-2
4	EE303	Microprocessor and Interfacing	4	3-0-2
5	EE304	IoT and Applications	4	3-0-2
6	EE201	Principles of Communication	4	3-0-2
		Total credits	**24**	

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\multicolumn{5}{c}{**Multidisciplinary Electives offered by EEE Department**}				
Sl	**Code**	**Course Name**	**Credits**	**L-T-P**
1	EE204	Analog Electronics	4	3-0-2
2	EE207	Signals & Systems	4	3-1-0
3	EE303	Microprocessor and Interfacing	4	3-0-2
4	EE205	VLSI Design	4	3-0-2
5	EE201	Principles of Communication	4	3-0-2
6	EE304	IoT and Applications	4	3-0-2
7	EE002	Quantum Electronics	3	3-0-0
8	EE006	Design Verification and Testing	3	3-0-0
9	EE007	Device and Interconnect Modelling	3	3-0-0
10	EE015	Information Theory and Coding	3	3-0-0
11	EE028	Drone Technology and Robotics	3	3-0-0

List of Electives

VLSI and Embedded System					
Sl	**Code**	**Course Name**	**Prerequisite**	**Credits**	**L-T-P**
1	EE001	VLSI Architecture	EE205, EE302	3	3-0-0
2	EE002	Quantum Electronics	EE203, EE204	3	3-0-0
3	EE003	Introduction to MEMS	EE304	3	3-0-0
4	EE004	VLSI Signal Processing	EE205, EE201	3	3-0-0
5	EE005	FPGA-based System Design	EE205	3	3-0-0
6	EE006	Design Verification and Testing	EE205	3	3-0-0
7	EE007	Device and Interconnect Modelling	EE205	3	3-0-0
8	EE008	CAD for VLSI	EE205	3	3-0-0
9	EE009	Memory Devices and Circuits	EE205	3	3-0-0
10	EE010	Embedded Software	EE306	3	3-0-0
11	EE011	Organic Semiconductors	EE203	3	3-0-0
12	EE012	Solar Cells-Fundamental & Applications	EE203	3	3-0-0
13	EE013	Energy Storage Materials	EE203	3	3-0-0

Communication and Signal Processing					
Sl	**Code**	**Course Name**	**Prerequisite**	**Credits**	**L-T-P**
1	EE014	Communication Networks and Switching	EE303	3	3-0-0
2	EE015	Information Theory and Coding	ES102, ES103	3	3-0-0
3	EE016	High-Performance Computing	EE401	3	3-0-0
4	EE017	Biomedical Signal Processing	EE301	3	3-0-0
5	EE018	Neuromorphic Computing	EE401	3	3-0-0
6	EE019	Advance Signal Processing	EE301	3	3-0-0
7	EE020	Optical Communication	EE207	3	3-0-0
8	EE021	Advanced Communication Engineering	EE207	3	3-0-0
9	EE022	Speech and Audio Signal Processing	EE301	3	3-0-0
10	EE036	Digital Communication	EE201	3	3-0-0
11	EE037	Microwave Circuits Design	EE202, EE208	3	3-0-0
12	EE038	RFIC Design	EE203	3	3-0-0

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Sl	Code	Course Name	Prerequisite	Credits	L-T-P
Autonomous and Intelligent Systems				
1	EE023	Sensors for Autonomous Systems	EE304	3	3-0-0
2	EE024	Power Systems	EE403	3	3-0-0
3	EE025	Power Electronic Converters for Renewable Energy	EE403	3	3-0-0
4	EE026	Smart Grid Technology	EE403	3	3-0-0
5	EE027	Electromechanics	EE403	3	3-0-0
6	EE028	Drone Technology and Robotics	EE304	3	3-0-0
7	EE029	Intelligent Control System	EE209	3	3-0-0
8	EE030	Image Computing	EE207	3	3-0-0
9	EE031	Time-Frequency Analysis	EE207	3	3-0-0
10	EE032	Machine Intelligence	NA	3	3-0-0
11	EE033	Speech and Audio Processing	EE207, EE209	3	3-0-0
12	EE034	Intelligent Vision Systems	EE207, EE209	3	3-0-0
13	EE035	Biomedical Engineering	NA	3	3-0-0

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