





**Integral University, Lucknow**  
**Department of Electrical Engg.**  
**Study and Evaluation Scheme**

**Program: B. Tech. (Electrical & Computer Science Engg.)**

**SemesterIV**

S. No.	Course code	Course Title	Type of Paper	Period Per hr/week /sem			Evaluation Scheme				Sub. Total	Credit	Total Credits	Attributes							United Nations Sustainable Development Goals (SDGs)
				L	T	P	CT	TA	Total	ESE				Employability	Entrepreneurship	Skill Development	Gender Equality	Environment & Sustainability	Human Value	Professional Ethics	
<b>THEORIES</b>																					
1	EE209	Electrical Measurement & Measuring Instruments	Core	3	1	0	40	20	60	40	100	3:1:0	4		√	√				4	
2	EE217	Signal System Analysis	Core	3	1	0	40	20	60	40	100	3:1:0	4			√				4	
3	CS212	Database Management System	Core	3	1	0	40	20	60	40	100	3:1:0	4							4	
4	CS284	Computer Organization & Architecture	Core	3	1	0	40	20	60	40	100	3:1:0	4							4,9	
5	CS203	Cyber Law & Information Security	ESA	2	1	0	40	20	60	40	100	2:1:0	3			√				11,16	
6		Departmental Elective -I	Elective	3	1	0	40	20	60	40	100	3:1:0	4								
*	BM226	Human Values and Professional Ethics	HM	3	0	0	-	-	-	50	50	3:0:0	0	√	√				√	√	3,10,13
<b>PRACTICAL</b>																					
7	EE210	Electrical Measurement Lab	Core	0	0	2	40	20	60	40	100	0:0:2	1		√	√				4	
8	EE216	Electrical Simulation Lab	Core	0	0	2	40	20	60	40	100	0:0:2	1	√		√				4	
9	CS220	DBMS Lab	Core	0	0	2	40	20	60	40	100	0:0:2	1							4	
10	CS285	Computer Organization & Architecture Lab	Core	0	0	2	40	20	60	40	100	0:0:2	1							4,9	
11	EE252	Comprehensive Annual Assessment-I	Core	-	-	-	-	-	-	100	-	100	0:0:0	1	√	√	√			4	
<b>Total</b>				<b>20</b>	<b>6</b>	<b>8</b>	<b>400</b>	<b>200</b>	<b>700</b>	<b>400</b>	<b>1100</b>		<b>28</b>								

\*Audit Course Human Values and Professional Ethics (BM-226) this is a compulsory audit course in which a student must clear this paper with 50% passing marks up to the final year and marks will not be included in the result.

**List of Electives**

S. No.	Course code	Course Title	Type of Paper	Period Per hr/week/sem			Evaluation Scheme				Sub Total	Credit	Total Credits	Attributes							United Nations Sustainable Development Goals (SDGs)
				L	T	P	CT	TA	Total	ESE				Em ployability	Entr epreneurship	Skill Deve lopment	Gen der Equ ality	Environ ment & Sustain ability	Hu man Valu e	Profe ssion al Ethics	
<b>Departmental Elective I</b>																					
1	EE213	Numerical Analysis & Applications	DE 1	3	1	0	40	20	60	40	100	3:1:0	4			√					4
	EE221	Electrical Engineering Materials	DE 1	3	1	0	40	20	60	40	100	3:1:0	4	√							9
	EE222	Probability Foundations for Electrical Engineers	DE 1	3	1	0	40	20	60	40	100	3:1:0	4			√					9
	EE224	Illumination Engineering	DE 1	3	1	0	40	20	60	40	100	3:1:0	4	√		√		√			9
	CS206	Discrete Structure	DE 1	3	1	0	40	20	60	40	100	3:1:0	4			√					4
	CS207	Computer Graphics	DE 1	3	1	0	40	20	60	40	100	3:1:0	4	√	√	√					4,9
	CS270	Object Oriented Concepts using Java	DE 1	3	1	0	40	20	60	40	100	3:1:0	4	√		√					4,9
CS281	Graph Theory and Applications	DE 1	3	1	0	40	20	60	40	100	3:1:0	4			√					4	
<b>Departmental Elective II</b>																					
2	EE323	Process Instrumentation	DE 2	3	1	0	40	20	60	40	100	3:1:0	4	√		√					9
	EE325	Conventional & CAD of Electrical Machines	DE 2	3	1	0	40	20	60	40	100	3:1:0	4	√		√					9
	EE331	Modern Power System	DE 2	3	1	0	40	20	60	40	100	3:1:0	4	√							7,8,9,11
	EE333	Advance Control System	DE 2	3	1	0	40	20	60	40	100	3:1:0	4	√		√					9
	EE345	Power Electronics based Converters Design	DE 2	3	1	0	40	20	60	40	100	3:1:0	4	√	√	√					9
EE347	Modeling and Dynamic analysis of Electrical Machines	DE 2	3	1	0	40	20	60	40	100	3:1:0	4	√	√	√					9	
<b>Departmental Elective III</b>																					
3	CS311	Software Project & Quality Management	DE 3	3	1	0	40	20	60	40	100	3:1:0	4	√		√					4
	CS320	Real-Time System	DE 3	3	1	0	40	20	60	40	100	3:1:0	4			√					4

	CS334	Cloud Computing	DE 3	3	1	0	40	2060	40	100	3:1:0	4			√				4,9,11
	CS341	Introduction to IoT	DE 3	3	1	0	40	2060	40	100	3:1:0	4			√				4,9
<b>Departmental Elective IV</b>																			
4	EE351	Sensor and Instrumentation	DE 4	2	1	0	40	2060	40	100	2:1:0	3	√	√	√				9
	EE352	Power Plant Instrumentation	DE 4	2	1	0	40	2060	40	100	2:1:0	3	√		√				9
	EE355	Nuclear & Advance Power Generation Technology	DE 4	2	1	0	40	2060	40	100	2:1:0	3	√		√				9
	EE357	Biomedical Engineering	DE 4	2	1	0	40	2060	40	100	2:1:0	3	√	√	√				4,9
<b>Departmental Elective V</b>																			
5	CS410	Distributed System	DE 5	3	1	0	40	2060	40	100	3:1:0	4			√				4
	CS412	Cryptography and Network Security	DE 5	3	1	0	40	2060	40	100	3:1:0	4	√	√	√				4,9
	CS417	Mobile computing	DE 5	3	1	0	40	2060	40	100	3:1:0	4			√				4
	CS418	Data warehousing and Data Mining	DE 5	3	1	0	40	2060	40	100	3:1:0	4			√				4,11,12
	CS419	Pattern Recognition	DE 5	3	1	0	40	2060	40	100	3:1:0	4			√				4
<b>Departmental Elective VI</b>																			
6	EE405	Smart Grid Topologies	DE 6	3	1	0	40	2060	40	100	3:1:0	4	√	√	√				4,9,11
	EE425	EHVAC & EHVDC Transmission	DE 6	3	1	0	40	2060	40	100	3:1:0	4	√	√	√				9
	EE433	Power Quality & Mitigation	DE 6	3	1	0	40	2060	40	100	3:1:0	4			√				9
	EE445	Electrical System and Substation Design	DE 6	3	1	0	40	2060	40	100	3:1:0	4	√	√	√				9
	EE447	Electric Vehicles	DE 6	3	1	0	40	2060	40	100	3:1:0	4	√	√	√				9,13