Indian Institute of Information Technology Kalyani

Autonomous institution under MoE, Govt. Of India & Department of Information Technology & Electronics, Govt. of West Bengal, WEBEL IT Park Campus, West Bengal 741235, India

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Course Structure and Syllabus

for

4 Years B. Tech.

in

Electronics and Communication Engineering

Indian Institute of Information Technology Kalyani

WEBEL IT Park Campus

West Bengal 741235, India

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Course Structure

1st Year (Semester: I)							
Sl No.	Code No.	Subject	Contact Periods/Week				Credits
			L	T	P	Total	
Theoretical Papers							
1	MAC101	Mathematics - I (Linear Algebra)	3	1	0	4	4
2	PHC101	Physics	3	1	0	4	4
3	ECC101	Basic Electrical and Electronics Engineering	3	0	0	3	3
4	CSC101	Programming -I (C Language)	3	0	0	3	3
5	HUC101	English for Communication	3	0	0	3	3
6	HUC102	Humanities - I (Values & Ethics in Profession)	3	0	0	3	3
Sessional Papers							
7	CSC111	Programming-I (C Language) Laboratory	0	0	3	3	2
8	ECC111	Basic Electronics Engineering Laboratory	0	0	3	3	2
Total			18	2	6	26	24

1st Year (Semester: II)							
Sl No.	Code No.	Subject	Contact Periods/Week				Credits
			L	T	P	Total	
Theoretical Papers							
1	MAC201	Mathematics-II (Probability and Statistics)	3	1	0	4	4
2	PHC201	Engineering Mechanics	3	1	0	4	4
3	ECC201	Digital Logic Design and Circuit	3	0	0	3	3
4	CSC201	Data Structures and Algorithms	3	1	0	4	4
5	HUC201	Humanities - II (Economics)	3	0	0	3	3
Sessional Papers							
6	ECC211	Digital Logic Design and Circuit Laboratory	0	0	3	3	2
7	CSC211	Data Structures and Algorithms Laboratory	0	0	3	3	2
Total			15	3	6	24	22

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2nd Year (Semester: III)

Sl No.	Code No.	Subject	L	T	P	Total	Credits
			Contact Periods/Week				

Sl No.	Code No.	Subject	Contact Periods/Week				Credits
			L	T	P	Total	
Theoretical Papers							
1	MAC301	Mathematics-III (Calculus and Differential Equations)	3	1	0	4	4
2	ECC301	Signals and Systems	3	1	0	4	4
3	ECC302	Semiconductor Devices	3	1	0	4	4
4	CSC301	Computer Organization and Architecture	3	0	0	3	3
5	HUC301	Humanities - III (Psychology)	3	0	0	3	3
Sessional Papers							
6	ECC312	Semiconductor Devices Laboratory	0	0	3	3	2
7	CSC311	Computer Organization and Architecture Laboratory	0	0	3	3	2
Total			15	3	6	24	22

2nd Year (Semester: IV)

Sl No.	Code No.	Subject	Contact Periods/Week				Credits
			L	T	P	Total	
Theoretical Papers							
1	ECC401	Circuit Theory	3	1	0	4	4
2	ECC402	Analog Electronic Circuits	3	1	0	4	4
3	ECC403	Electromagnetic Engineering	3	1	0	4	4
4	ECC404	Statistical Signal Processing	3	1	0	4	4
5	HUC401	IPR Law: Concepts and Applications	3	0	0	3	3
Sessional Papers							
6	ECC411	Circuit Theory Laboratory	0	0	3	3	2
7	ECC412	Analog Electronic Circuits Laboratory	0	0	3	3	2
Total			15	4	6	25	23

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Sl No.	Code No.	Subject	L	T	P	Total	Credits
3rdYear (Semester: V)							
Contact Periods/Week							
Theoretical Papers							
1	ECC501	Communication - I	3	1	0	4	4
2	EEC501	Control System Engineering	3	1	0	4	4
3	ECC502	Microprocessor and Microcontroller Systems	3	0	0	3	3
4	HUC501	Humanities - IV (Organizational Behaviour)	3	0	0	3	3
Sessional Papers							
5	ECC511	Communication - I Laboratory	0	0	3	3	2
6	ECC512	Microprocessor and Microcontroller Systems Laboratory	0	0	3	3	2
7	HUC511	Soft Skill Development	0	0	3	3	2
8	ECC591	Project - I (A)	0	0	5	5	3
Total			**12**	**2**	**14**	**28**	**23**

Sl No.	Code No.	Subject	L	T	P	Total	Credits
3rdYear (Semester: VI)							
Contact Periods/Week							
Theoretical Papers							
1	ECC601	Communication- II	3	1	0	4	4
2	ECC602	Digital Signal Processing	3	0	0	3	3
3	CSC601	Computer Networks	3	1	0	4	4
4	CSC602	Machine Learning	3	0	0	3	3
Sessional Papers							
5	ECC611	Communication - II Laboratory	0	0	3	3	2
6	ECC612	Digital Signal Processing Laboratory	0	0	3	3	2
7	CSC611	Computer Networks Laboratory	0	0	3	3	2
8	ECC691	Project - I (B)	0	0	5	5	3
Total			**12**	**2**	**14**	**28**	**23**

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SI No.	Code No.	Subject	L	T	P	Total	Credits
4th Year (Semester: VII)							
Theoretical Papers							
1	ECC701	VLSI Engineering	3	0	0	3	3
2	ECC702	RF and Microwave Engineering	3	1	0	4	4
3	ECE/CSE7XX	Elective - I	3	0	0	3	3
4	ECE/CSE7XX	Elective - II	3	0	0	3	3
Sessional Papers							
5	ECC711	VLSI Engineering Laboratory	0	0	3	3	2
6	ECC712	RF and Microwave Engineering Laboratory	0	0	3	3	2
7	ECC791	Project - II (A)	0	0	15	15	10
Total			12	1	21	34	27

SI No.	Code No.	Subject	L	T	P	Total	Credits
4th Year (Semester: VIII)							
Theoretical Papers							
1	ECE/CSE8XX	Elective - III	3	0	0	3	3
2	ECE/CSE8XX	Elective - IV	3	0	0	3	3
3	ECE/CSE8XX	Elective - V	3	0	0	3	3
Sessional Papers							
4	ECC891	Project - II (B)	0	0	15	15	10
5	ECC892	Comprehensive Viva	0	0	0	0	3
Total			9	0	15	24	22

Total Program Credit	(24+22+22+23+23+23+27+22)	186

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List of Elective Subjects

Sl. No.	Semester	Course Name	Course code	L-T-P	Credit
		ECE			
		Optical Communication	ECE721	3-0-0	3
		Remote Sensing and GIS	ECE722	3-0-0	3
		Modern Radar Systems	ECE723	3-0-0	3
		Satellite Communication Systems	ECE724	3-0-0	3
		Mixed-Signal and RF Design	ECE725	3-0-0	3
		Principle of Nano-electronics and devices	ECE726	3-0-0	3
		VLSI Technology	ECE727	3-0-0	3
		Embedded System Design	ECE728	3-0-0	3
		CSE			
		Logic & Reasoning	CSE721	3-0-0	3
	Autumn	Ad-Hoc and Sensor Networks	CSE722	3-0-0	3
		Mobile Computing	CSE723	3-0-0	3
		Cyber Law and Security	CSE724	3-0-0	3
		Computational Number Theory	CSE725	3-0-0	3
		Computational Complexity	CSE726	3-0-0	3
		Computer Graphics and Multimedia	CSE727	3-0-0	3
		Computational Geometry	CSE728	3-0-0	3
		Computer Vision and Image Understanding	CSE729	3-0-0	3
		Fuzzy Logic and Applications	CSE730	3-0-0	3
		Mathematical Methods	CSE731	3-0-0	3
		Neural Networks and Deep Learning	CSE732	3-0-0	3
		Soft Computing	CSE733	3-0-0	3

Sl. No.	Semester	Course Name	Course code	L-T-P	Credit
		ECE			
		Multiple Input Multiple Output System	ECE821	3-0-0	3
		Sensors and Instrumentation	ECE822	3-0-0	3
		Adaptive Systems and Signal Processing	ECE823	3-0-0	3
		CAD for VLSI	ECE824	3-0-0	3
		Low power circuits and systems	ECE825	3-0-0	3
		RF and Microwave Networks	ECE826	3-0-0	3
		MEMs and Applications	ECE827	3-0-0	3
		Biomedical System Engineering and Automation	ECE828	3-0-0	3
		5G and Wireless Technology	ECE829	3-0-0	3
		Integrated Nano photonics	ECE830	3-0-0	3
		Mobile Communication and Fading	ECE831	3-0-0	3
		Fiber Optics, Components and Devices	ECE832	3-0-0	3
	Spring	**CSE**			
		Data Mining	CSE821	3-0-0	3
		Speech and Natural Language Processing	CSE822	3-0-0	3
		Data Analytics & Optimization Techniques	CSE823	3-0-0	3
		Big Data Analytics	CSE824	3-0-0	3
		Coding Theory	CSE825	3-0-0	3
		Distributed Operating Systems	CSE826	3-0-0	3
		Distributed Database Management System	CSE827	3-0-0	3
		Advanced Computer Architecture	CSE828	3-0-0	3
		Fault Tolerant Computing	CSE829	3-0-0	3
		Real Time Systems	CSE830	3-0-0	3
		Robotics: Machines and Control	CSE831	3-0-0	3
		Internet of Things	CSE832	3-0-0	3
		Blockchain Technology	CSE833	3-0-0	3
		Information Theory and Coding	CSE834	3-0-0	3
		Advanced Cryptography	CSE835	3-0-0	3
		Digital and Cyber Forensics	CSE836	3-0-0	3
		Cyber Physical Systems	CSE837	3-0-0	3
		Cloud Computing	CSE838	3-0-0	3
		Parallel and Distributed Computing	CSE839	3-0-0	3
		Quantum Computing	CSE840	3-0-0	3