

Department of Electronics and Communication
J.K. Institute of Applied Physics & Technology
University of Allahabad, Allahabad

B. Tech. (CSE & ECE) Course Structure and Syllabus

B.Tech. 1 st Semester (CSE & ECE)						
Paper	Course Code	L-T-P-C	Credits	Six theory Papers & Practical Labs	Sessional Marks	End Semester Marks
Paper – 1	BEC101	3-0-0-3	3	Engineering Mathematics - I	40	60
Paper – 2	BEC102	3-0-0-3	3	Engineering Mathematics - II	40	60
Paper – 3	BEC103	3-0-0-3	3	Engineering Physics	40	60
Paper – 4	BEC104	3-0-0-3	3	Basic Electronics	40	60
Paper – 5	BEC105	3-0-0-3	3	Computer and Programming Fundamentals	40	60
Paper - 6	BEC106	2-0-4-4	4	Communication Skill I and Communication Skill Practice I	40	60
Practicals	BEC107	0-0-8-4	4	Electronics Lab I	40	60
	BEC108	0-0-4-2	2	Computer Lab I : C Programming	40	60

B.Tech. 2 nd Semester (CSE & ECE)						
Papers	Course Code	L-T-P-C	Credits	Six theory Papers & Practical Labs	Sessional Marks	End Semester Marks
Paper – 1	BEC201	3-0-0-3	3	Mathematics - III	40	60
Paper – 2	BEC202	3-0-0-3	3	Applied Numerical Analysis	40	60
Paper – 3	BEC203	3-0-0-3	3	Digital Electronics	40	60
Paper – 4	BEC204	3-0-0-3	3	Electronics Device & Circuits	40	60
Paper – 5	BEC205	3-0-0-3	3	Circuit Theory	40	60
Paper - 6	BEC206	3-0-0-3	2	Communication Skill II	40	60
Practicals	BEC207	0-0-12-6	6	Basic & Digital Electronics Lab	40	60
	BEC208	0-0-4-2	2	Communication Skill Practice II	40	60

B.Tech. 3 rd Semester (CSE)						
Paper	Course Code	L-T-P-C	Credits	Six theory Papers & Practical Labs	Sessional Marks	End Semester Marks
Paper – 1	BC301	3-0-0-3	3	Discrete Mathematical Structures#	40	60
Paper – 2	BC302	3-0-0-3	3	Database Systems#	40	60
Paper – 3	BC303	3-0-0-3	3	Data Structure#	40	60
Paper – 4	BEC304	3-0-0-3	3	Basic Electrical Engineering	40	60
Paper – 5	BEC305	3-0-0-3	3	Computer Organization & Architecture*	40	60
Paper - 6	BEC306	2-0-0-2	2	Industrial Management– I*	40	60
Practicals	BEC307	0-0-8-4	4	Microprocessor Lab	40	60
	BEC308	0-0-8-4	4	Engineering Drawing & Workshop	40	60

B.Tech. 4 th Semester (CSE)						
Paper	Course Code	L-T-P-C	Credits	Six theory Papers & Practical Labs	Sessional Marks	End Semester Marks
Paper – 1	BC401	3-0-0-3	3	Operating Systems #	40	60
Paper – 2	BC402	3-0-0-3	3	Theory of Computation #	40	60
Paper – 3	BC403	3-0-0-3	3	Design & Analysis of Algorithms #	40	60
Paper – 4	BEC404	3-0-0-3	3	Control Systems* #	40	60
Paper – 5	BEC405	3-0-0-3	3	Signals & Systems*	40	60
Paper - 6	BEC406	2-0-0-2	2	Industrial Management II*	40	60
Practicals	BEC407	0-0-8-4	4	Instrumentation & Control Lab	40	60
	BC408	0-0-8-4	4	Data Structure & Algorithm Lab	40	60

B.Tech. 5 th Semester (CSE)						
Paper	Course Code	L-T-P-C	Credits	Six theory Papers & Practical Labs	Sessional Marks	End Semester Marks
Paper – 1	BC501	3-0-0-3	3	Artificial Intelligence#	40	60
Paper – 2	BC502	3-0-0-3	3	Compiler Design#	40	60
Paper – 3	BC503	3-0-0-3	3	Computer Graphics#	40	60
Paper – 4	BEC504	3-0-0-3	3	Web Technology	40	60
Paper – 5	BEC505	3-0-0-3	3	Computer Networks*	40	60
Paper - 6	BEC506	3-0-0-3	3	Digital Communication I *	40	60
Practicals	BC507	0-0-10-5	5	Computer Graphics & Database Lab	40	60
	BC508	0-0-6-3	3	Design Project – Phase I	40	60

B.Tech. 6 th Semester (CSE)						
Paper	Course Code	L-T-P-C	Credits	Six theory Papers & Practical Labs	Sessional Marks	End Semester Marks
Paper – 1	BC601	3-0-0-3	3	Advanced Concepts of Programming Language#	40	60
Paper – 2	BC602	3-0-0-3	3	Operational Research#	40	60
Paper – 3	BC603	3-0-0-3	3	Advanced Computer Architecture	40	60
Paper – 4	BC604	3-0-0-3	3	Software Engineering	40	60
Paper – 5	BEC605	3-0-0-3	3	Digital Signal Processing*	40	60
Paper - 6	BEC606	3-0-0-3	3	Digital Communication II *	40	60
Practicals	BC607	0-0-10-5	5	Digital Signal Processing Lab	40	60
	BEC608	0-0-6-3	3	Design Project – Phase II	40	60

B.Tech. 7 th Semester (CSE)						
Paper	Course Code	L-T-P-C	Credits	Four theory Papers & Practical Labs	Sessional Marks	End Semester Marks
Paper – 1	BC701	3-0-0-3	3	Big Data Analysis	40	60
Paper – 2	BEC702	3-0-0-3	3	Mobile Communication *	40	60
Paper – 3	BEC703	3-0-0-3	3	Microcontroller & Microprocessor interfacing*	40	60
Paper – 4	BEC704	3-0-0-3	3	Image Processing*	40	60
Practicals	BC705	0-0-8-4	4	Project – Phase I (Dissertation & Viva Voce)	40	60
	BC706	0-0-6-3	3	Image Processing Lab	40	60
	BC707	-	1	Tour	40	60

B.Tech. 8 th Semester (CSE)						
Paper	Course Code	L-T-P-C	Credits	Four theory Papers & Practical Labs	Sessional Marks	End Semester Marks
Paper – 1	BC801	3-0-0-3	3	Cyber Security	40	60
Paper – 2	BC802	3-0-0-3	3	Multimedia Technology	40	60
Paper – 3	BEC803	3-0-0-3	3	Elective I :	40	60
Paper – 4	BC804	3-0-0-3	3	Elective II	40	60
Practicals	BC805	0-0-12-6	6	Project - Phase II {Seminar-2 Credits & Dissertation & Viva Voce-4 Credits}	40	60
	BC806	-	1	Comprehensive Viva	40	60
	BC807	-	1	Paper Writing & Presentation	40	60

List of Electives (CSE)

1. Computer Vision
2. Natural Language Processing
3. Ubiquitous Computing
4. Fault Tolerant Computing
5. Fuzzy Systems
6. Neural Networks
7. Embedded Systems

B.Tech. 3 rd Semester (ECE)						
Paper	Course Code	L-T-P-C	Credits	Six theory Papers & Practical Labs	Sessional Marks	End Semester Marks
Paper – 1	BE309	3-0-0-3	3	Network Analysis & Synthesis	40	60
Paper – 2	BE310	3-0-0-3	3	Electronic Instrumentation & Measurement	40	60
Paper – 3	BE311	3-0-0-3	3	Analog Circuits & Systems	40	60
Paper – 4	BEC304	3-0-0-3	3	Basic Electrical Engineering*	40	60
Paper – 5	BEC305	3-0-0-3	3	Computer Architecture & Organization *	40	60
Paper - 6	BEC306	2-0-0-2	2	Industrial Management I*	40	60
Practicals	BEC307	0-0-8-4	4	Microprocessor Lab	40	60
	BEC308	0-0-8-4	4	Engineering Drawing & Workshop	40	60

B.Tech. 4 th Semester (ECE)						
Paper	Course Code	L-T-P-C	Credits	Six theory Papers & Practical Labs	Sessional Marks	End Semester Marks
Paper – 1	BE 410	3-0-0-3	3	EM Wave Theory	40	60
Paper – 2	BE 411	3-0-0-3	3	Semiconductor Device Technology	40	60
Paper – 3	BE 412	3-0-0-3	3	Electrical Engineering	40	60
Paper – 4	BEC 404	3-0-0-3	3	Control Systems*	40	60
Paper – 5	BEC 405	3-0-0-3	3	Signal & Systems*	40	60
Paper - 6	BEC 406	2-0-0-2	2	Industrial Management II*	40	60
Practicals	BEC 407	0-0-8-4	4	Instrumentation & Control Lab	40	60
	BE 413	0-0-8-4	4	Electrical Engineering Lab - II	40	60

B.Tech. 5 th Semester (ECE)						
Paper	Course Code	L-T-P-C	Credits	Six theory Papers & Practical Labs	Sessional Marks	End Semester Marks
Paper – 1	BE 509	3-0-0-3	3	Antenna and Wave Propagation	40	60
Paper – 2	BE 510	3-0-0-3	3	Digital Telephony	40	60
Paper – 3	BE 511	3-0-0-3	3	Fiber Optic Communication I	40	60
Paper – 4	BEC 504	3-0-0-3	3	Computer Networks*	40	60
Paper – 5	BEC 505	3-0-0-3	3	Communication Systems*	40	60
Paper - 6	BEC 506	3-0-0-3	3	Digital Communication I*	40	60
Practicals	BE 512	0-0-10-5	5	Analog Communication & Fiber Optic Lab	40	60
	BE 513	0-0-6-3	3	Design Project - Phase I	40	60

B.Tech. 6 th Semester (ECE)						
Paper	Course Code	L-T-P-C	Credits	Six theory Papers & Practical Labs	Sessional Marks	End Semester Marks
Paper – 1	BE 610	3-0-0-3	3	Micro Electronics & VLSI Design	40	60
Paper – 2	BE 611	3-0-0-3	3	Engineering Materials	40	60
Paper – 3	BE 612	3-0-0-3	3	Fiber Optic Communication II	40	60
Paper – 4	BE 613	3-0-0-3	3	Computer Networks*	40	60
Paper – 5	BEC 605	3-0-0-3	3	Digital Signal Processing*	40	60
Paper - 6	BEC 606	3-0-0-3	3	Digital Communication II*	40	60
Practicals	BEC 607	0-0-10-5	2	Digital Signal Processing Lab	40	60
	BE 615	0-0-6-3	3	Design Project - Phase II	40	60

B.Tech. 7 th Semester (ECE)						
Paper	Course Code	L-T-P-C	Credits	Four theory Papers & Practical Labs	Sessional Marks	End Semester Marks
Paper – 1	BE 701	3-0-0-3	3	Microwave Technology	40	60
Paper – 2	BEC 702	3-0-0-3	3	Mobile Communication*	40	60
Paper – 3	BEC 703	3-0-0-3	3	Microcontroller & Microprocessor interfacing	40	60
Paper – 4	BEC 704	3-0-0-3	3	Image Processing*	40	60
Practicals	BE 709	0-0-8-4	4	Project - Phase I (Dissertation & Viva Voce)	40	60
	BE 710	0-0-6-3	3	Microwave Communication Lab	40	60
	BEC 707	-	1	Tour	40	60

B.Tech 8 th semester (ECE)						
Paper	Course Code	L-T-P-C	Credits	Four theory Papers & Practical Labs	Sessional Marks	End Semester Marks
Paper – 1	BE 808	3-0-0-3	3	Satellite Communication	40	60
Paper – 2	BE 809	3-0-0-3	3	Radar Engineering & Navigational Aids	40	60
Paper – 3	BEC 803	3-0-0-3	3	Mobile Ad-hoc Network*	40	60
Paper – 4	BE 810	3-0-0-3	3	Elective	40	60
Practicals	BE 811	0-0-12-6	6	Project - Phase II {Seminar-2 Credits & Dissertation & Viva Voce-4 Credits}	40	60
	BE 812	-	1	Comprehensive Viva	40	60
	BE 813	-	1	Paper Writing & Presentation	40	60

List of Electives (ECE)

8. Advanced Fiber Optic Communication
9. Advance Antenna Theory & Techniques
10. Internet of things (IOT)
11. Embedded Systems