					Year					
			Sem	ester		Fueluet	ion Sche	-		Credits
DSC/ SEC/ AECC	Subject		Periods			Continuous Internal Assessment		ESE	Total	
		L	Т	P	СТ	TA				
			1	EOR		10		-	100	1 4
BAC-C102/ BAC-C202	Engineering Chemistry	3	1	0	20	10	30	70	100	4
BEM-C102	Engineering Mathematics-I	3	1	0	20	10	30	70	100	4
BCE-C102/ BCE-C202	Programming for Problem Solving	3	1	0	20	10	30	70	100	4
BME-C103	Basic Mechanical Engineering	3	1	0	20	10	30	70	100	4
BEN-A103	Environmental Studies	2	0	0	20	10	30	70	100	0
	Induction Program				Onl	y for fir	st 3 weel	ks		
	PRACTICAL									
BAC-C151/ BAC-C251	Engineering Chemistry Lab	0	0	2	10	5	15	35	50	1
BCE-C151 BCE-C251	Programming for Problem Solving Lab	0	0	2	10	5	15	35	50	1
BME-C153/ BME-C253	Engineering Graphics and Design Lab	0	0	2	10	5	15	35	50	2
BEG-A151/ BEG-A251	Technical Communication	0	0	2	10	5	15	35	50	1
	TOTAL	14	4	8	140	70	210	490	700	21
Cours	icals BHU : Hui istry BAP : Phy pline Specific A : Abi e Enha	manit vsics llity incen mpul	ties nent lsory	Cou: ric Ele	BM BH S	ME : EN :	Mathen Mechar Enviror : Skill E Course ESE	nical nment nhancem	ent Semester Ex	caminatio
ЗСЕ-С 101 LECTURE; ГА- TEACHE			P- P]	RAC	TICAL;			CT-CUN	ectively /IULATIV	TE TEST

B.Tech. I Year

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Department of Computer Science & Engineering, Faculty of Engineering & Technology, GKDU, Haridwar

			St	mes	ter - I		on Caba			Creatit
Subject code	Subject		erio	ds	Cont Int	<u>Evaluati</u> tinuous ernal ssment	on Scher CIA Total	ne ESE	Total marks	Credit
		L	Т	Р	CT	TA	-			
				EORY						<u> </u>
BAP-C202	Engineering Physics	3	1	0	20	10	30	70	100	4
BEM-C202	Engineering Mathematics–II	3	1	0	20	10	30	70	100	4
BEE-C202	Basic Electrical Engineering	3	1	0	20	10	30	70	100	4
BET-C202	Electronic Devices	3	1	0	20	10	30	70	100	4
BHU-S202	Vedic Science & Engineering	2	0	0	20	10	30	70	100	0
	Summer Training and Internship	and the	the train	credit ing ce	s will b ertificat	e given i	be pursue n III sem ed by pre	after su	bmitting	
BAP-C251	Engineering Physics Lab	0	RAC 0	TICA	AL 10	5	15	35	50	1
DAI -0251	Engineering Thysics Eau	0	0	2	10	5	15	55	50	1
BEE-C251	Basic Electrical Engineering Lab	0	0	2	10	5	15	35	50	1
BET-C251	Electronic Devices Lab	0	0	2	10	5	15	35	50	1
BME-C152/ BME-C252	Workshop Practice	0	0	2	10	5	15	35	50	1
BSP-S251	Physical Training & Yoga	0	0	2	0	0	50	0	50	0
	TOTAL	14	4	10	140	70	260	490	750	20
Coding BCE : Comp BEE : Electr BAC : Chem C : Disci Cours	icals BHU : H istry BAP : H pline Specific A : A e Er	Electr Huma Physi Abilit hhanc Com	unitio cs y ceme	es ent	Course	BEM BME BEN S	: Mec : Env		l	
E : Disciplin	e ElectiveCourse G				Electi	ve	ESH	E :	End Seme	ester Examina
BCE-C 101	Semester 0, 5 & 6 stand Paper Code	ls for	. The	eory,	Practio	cal & Sei	minar / I	Project	respectiv	ely
L- LECTURE; TA- TEACHEI					ACTIC MESTI		MINAT		-CUMUL	ATIVE TI
L- LECTURE;	T- TUTORIAL;				MESTI		MINAT		-CUMUL	.ATI

B. Tech. I Year Semester - II

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GURUKULA KANGRI (Deemed to be University), HARIDWAR

Faculty of Engineering & Technology Computer Science & Engineering

	I	S	emo	este	r -]		.	.			Credits
DSC/ SEC/ AECC	Subject	-		eriod		Con In Asso	tinuous ternal essment	CIA CIA Total	ESE	Total Marks	
			L	T	Р	СТ	TA				
BEM-C302	Engineering Mathematics-	III	3	HEO 1	$\mathbf{R}\mathbf{Y}$	20	10	30	70	100	4
DEIVI-C302	Engineering Mathematics-	- 111	3	1	0	20	10	50	70	100	4
BET-C306	Digital System Design		3	0	0	20	10	30	70	100	3
BCE-C307	Python Programming		3	0	0	20	10	30	70	100	3
BCE-C305/ BCE-C405	Data Structure-I		3	0	0	20	10	30	70	100	3
BCE-C306	Computer Architecture & Organization		3	0	0	20	10	30	70	100	3
]	PRA	CT	ICA	L					
BCE-C355	Digital System Design Lab	b	0	0	2	10	5	15	35	50	1
BCE-C354	Python Programming lab		0	0	2	10	5	15	35	50	1
BCE-C355/ BCE-C454	Data Structure-I Lab		0	0	2	10	5	15	35	50	1
BEM-C356	Presentation		0	0	2	10	5	15	35	50	1
	TOTAL		15	1	8	140	70	210	490	700	20
BEE : Elec BAC : Che	nputers BET etricals BHU mistry BAP ccipline Specific A rse	: Electron : Humanit : Physics : Ability Enhancen Compul	ties nent		nirs,	BN BE S	ME : M EN : E : S	Mathemat Mechanic Environm Skill Enh Durse	al ent	ent	
E : Discip	line ElectiveCourse			ric l				ESE	: End S	emester E	kaminatior
BCE-C 101-	Semester O, 5 & 6 st Paper Cod	le						•	·	·	
L- LECTUR	E; T- TUTORIA	L;	P- F	PRA	CTI	CAL;		C	T-CUM	IULATIV	TEST

B.Tech. II Year



TA- TEACHER ASSESSMENT;

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ESE-ENDSEMESTER EXAMINATION

			Se	mest	er - 1	/					
					E	valuati	on Scher	ne		Credit	
Subject code	Subject	P	Perio	ds	Inte	nuous rnal	CIA Total	ESE	Total marks		
		T	L T P			Assessment CT TA		LOL	muriko		
			_	-		IA				<u> </u>	
		-		CORY		10		=0	100		
BEM-C403	Discrete Mathematics	3	1	0	20	10	30	70	100	4	
BCE-C408	Database Management	3	0	0	20	10	30	70	100	3	
	System										
BCE-C406	Object Oriented	3	0	0	20	10	30	70	100	3	
	Programming using Java										
BCE-C407	Operating System	3	0	0	20	10	30	70	100	3	
BET-C411	Microprocessor and				20					3	
	Interfacing	3	0	0		10	30	70	100		
BKT-A403	Bhartiya Gyan	2	0	0	20	10	30	70	100	0	
	Parampara (IKT)										
	Summer training and	То	be p	ursue	d durin	g sumn	ner vaca	tions, ce	ertificate o	of	
	Internship	con	nplet	ion to) be sub	mitted	in the de	partme	nt		
		P	RAC	TICA	AL						
BCE-C455	DBMS Lab	0	0	2	10	5	15	35	50	1	
BCE-C456	Object Oriented	0	0	2	10	5	15	35	50	1	
	Programming using Java		1								
	Lab		1								
BET-C461	Microprocessor and	0	0	2	10	5	15	35	50	1	
	Interfacing Lab		1								
BCE-A460	MOOC (Soft Skills)	0	0	2	10	5	15	35	50	1	
	TOTAL	17	1	8	160	80	240	560	800	20	

B. Tech. II Year Semester - IV

Coding

BCE BEE	: Computers : Electricals	BET	: Electronics : Humanities	BEM BME	: Mathematics : Mechanical							
		BHU										
BAC	: Chemistry	BAP	: Physics	BEN	: Environment							
С	: Discipline Specific	А	: Ability	S	: Skill Enhancement							
	Course		Enhancement		Course							
	Compulsory Course											
E :	Discipline ElectiveCours	e	G : Generic Electiv	ve .	ESE : End Semester Examination							
BCE-C	Semester Semester 0, 5 & 6 stands for Theory, Practical & Seminar / Project respectively BCE-C 101 Paper Code											
	L- LECTURE; T- TUTORIAL; P- PRACTICAL; CT-CUMULATIVE TEST; TA- TEACHER ASSESSMENT; ESE–ENDSEMESTER EXAMINATION											

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4 Department of Computer Science & Engineering, Faculty of Engineering & Technology, GKDU, Haridwar

B. Tech. Third Year Syllabus in accordance with AICTE Model Curriculum

DSC/SEC/DS	SUBJECT		PERIODS			ALUAT ESSION	TION SCH	IEME	Subject	Credits	
E/AEC						ALUA		EXAM	Total		
					CT	ТА	Total	ESE			
	THEORY										
BCE-C511	Computer Network	3	1	0	20	10	30	70	100	4	
BCE-C512	Advance Data Structure	3	1	0	20	10	30	70	100	4	
BCE-C513	Design & Analysis of Algorithm	3	1	0	20	10	30	70	100	4	
BCE-C514	Cloud Computing	3	1	0	20	10	30	70	100	4	
BCE-M001	Universal Human Values	3	0	0	20	10	30	70	100	0	
BCE-P5XX	Program Elective – I	3	0	0	20	10	30	70	100	3	
BCE-O5XX	Open Elective – I	3	0	0	20	10	30	70	100	3	
		Р	RAC	ГІСА	L						
BCE-C561	Advance Data Structure Lab	0	0	2	10	5	15	35	50	1	
BCE-C562	Cloud Computing Lab	0	0	2	10	5	15	35	50	1	
BCE-S570	Summer Training and Internship Program-II Presentation*	0	0	2	10	5	15	35	50	1	
	TOTAL	21	4	6	170	85	255	595	850	25	

SEMESTER-V

*For the Summer Training and Internship program done in summer break after IV semester examination, A certificate of completion to be submitted along with the presentation in the department. In case a student is unable to do an internship in some company, he may do any one extra online skill enhancement course.



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Program Elective - I

BCE-P515	Object Oriented Programming Using CPP
BCE-P516	Computer Graphics
BCE-P517	Machine Learning – I
BCE-P518	Software Engineering
BCE-P519	Data Analytics -1
BCE-P520	Complexity Theory

Open Elective Subject List -1

BCE-0530	Advance Operating System
BCE-0531	Functional Programming Principles with Scala
BET-0532	Signals and Systems
BCE-O533	Business Economics and Financial Analysis
BCE-O534	Introduction to AI
BCE-0535	Linux and Shell Programming



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B. Tech. Third Year Syllabus in accordance with AICTE Model Curriculum

SEMESTER-VI

		DF	RIOI)S	EVA	ALUATI	ION SCH	IEME	C-1.	Credits	
DSC/SEC/DS E/AEC	SUBJECT	PL.	KIUI	5	~	SSION ALUAT		EXAM	Subjec t Total		
		L	Т	Р	СТ	ТА	Total	ESE			
	THEORY										
BCE-C611	Distributed Systems	3	1	0	20	10	30	70	100	4	
BCE-C612	Formal Languages and Automata Theory	3	1	0	20	10	30	70	100	4	
BET-C613	Embedded Systems	3	1	0	20	10	30	70	100	4	
BCE-M002	Intellectual Property Rights	3	0	0	20	10	30	70	100	3	
BCE-P6XX	Program Elective – II	3	0	0	20	10	30	70	100	3	
BCE-O6XX	Open Elective-II	3	0	0	20	10	30	70	100	3	
]	PRACTI	ICAL	1							
BCE-C661	Distributed Systems Lab	0	0	2	10	5	15	35	50	1	
BET-C662	Embedded Systems Lab	0	0	2	10	5	15	35	50	1	
BCE-P663	Project	0	0	2	10	5	15	35	50	1	
BCE-S670	Seminar on Latest Technologies	0	0	2	10	5	15	35	50	1	
	TOTAL	18	3	8	160	80	240	560	800	25	

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Program Elective Subject List- II

BCE-P614	Machine Learning - 2
BCE-P615	Advance Database Management System
BCE-P616	Software Project Management
BET-P617	Digital Signal Processing
BCE-P618	High Performance Computer Architecture
BCE-P619	Full Stack Web Development
BCE-P620	Data Analytics -2
BCE-P621	Cyber Forensics
BCE-P622	Augmented Reality and Virtual Reality

Open Elective –II

BCE-0630	Applied AI
BET-O631	Digital Image Processing
BCE-0632	Industrial Economics and Business Administration
BCE-0633	Introduction to Data Science and Design Thinking
BCE-0634	Data Mining
BCE-0635	Natural Language Processing
BCE-0636	E-commerce & Social Media Analysis
BCE-0637	Java Programming and Introduction to Python**
BCE-0657	Java Programming and Introduction to Python Lab**



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GURUKULA KANGRI (Deemed to be University), HARIDWAR

Faculty of Engineering & Technology Computer Science & Engineering

B. Tech. Fourth Year Syllabus in accordance with AICTE Model Curriculum

DSC/SEC/DSE/ AEC	SUBJECT	PERIODS -			SE EVA	LUAT SSION		HEME EXA	Subject Total	Credits
		L	Т	Р	СТ	ТА	Total	M ESE		
THEORY										
BCE-C711	Compiler Design	3	1	0	20	10	30	70	100	4
BCE-C712	Linux System Administration	3	1	0	20	10	30	70	100	4
BCE-P7XX	Program Elective –III	3	0	0	20	10	30	70	100	3
BCE-07XX	Open Elective –III /	3	0	0	20	10	30	70	100	3
	PR	ACTI	CAL							
BCE-C762	Linux System Administration Lab	0	0	2	10	5	15	35	50	1
BCE-P770	Minor Project with research paper	0	0	8	20	10	30	70	100	6
	TOTAL				110	55	165	385	550	21

SEMESTER-VII



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Program Elective Subject List - III

BCE-P713	Wireless Networks
BCE-P714	Information and Network Security
BCE-P716	Human Computer Interaction
BCE-P717	Block Chain
BCE-P718	Deep Learning
BCE-P719	Fuzzy logic and Neural Networks
BCE-P720	Real Time Operating System
BET-P721	Internet of Things

Open Elective –III

BCE-0731	Optimization Techniques in Computing
BCE-0732	Parallel and Distributed System
BCE-O733	Adhoc and Sensor Networks
BET-0734	BioMedical Signal Processing
BCE-0735	Ecommerce
BCE-O736	Human Resource and Organization Behaviour
BCE-0737	Soft Computing
BCE-O738	Storage Management
BCE-0739	Quantum Computing
BCE-O740	Computer Vision
BCE-0741	AI in Healthcare
BCE-O742	Neural Networks and Deep Learning



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B. Tech. Fourth Year Syllabus in accordance with AICTE Model Curriculum

SEMESTER-VIII

DSC/SEC/DSE /AEC	SUBJECT	PERIODS			EVALUATION SCH SESSIONAL EVALUATION			EME EXA	Subject Total	Credits
		L	Т	Р	СТ	ТА	TOTAL	M ESE		
THEORY										
BCE-O8XX	MOOC- I	3	1	0	20	10	30	70	100	4
BCE-O8XX	MOOC- II	3	1	0	20	10	30	70	100	4
BCE-O8XX	MOOC- III	3	1	0	20	10	30	70	100	4
PRACTICAL										
BCE-P861	Major Project with Research paper	0	0	16	0	100	100	300	400	6+3
TOTAL		09	3	16	60	130	190	510	700	21

List of MOOC courses shall be decided by the departmental committee in each semester depending upon the list from SWAYAM/NPTEL and other recognized online platforms. Students have to study from Online Platform doubt sessions shall be held by Internal teachers and exams shall be taken by university. If a student wishes he can give exam of Online Platform for certification. SWAYAM courses to run every year from July onwards (Odd Semester) are declared in the month of May and for courses to run every year from January onwards(Even Semester) are declared in the month of December on website https://swayam.gov.in/.



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