GURUKULA KANGRI (Deemed to be University), HARIDWAR
Faculty of Engineering & Technology
Computer Science & Engineering

B.Tech. I Year
Semester - I

DSC/ SEC/ AECC	Subject	Periods			Evaluation Scheme				Total Marks	Credits
					Continuous Internal Assessment		CIA Total	ESE		
		L	T	P	CT	TA				
THEORY										
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	**Only for first 3 weeks**								
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

Coding:

BCE	: Computers	BET	: Electronics	BEM	: Mathematics
BEE	: Electricals	BHU	: Humanities	BME	: Mechanical
BAC	: Chemistry	BAP	: Physics	BEN	: Environment
C	: Discipline Specific Course	A	: Ability Enhancement Compulsory Course	S	: Skill Enhancement Course
E	: Discipline ElectiveCourse	G	: Generic Elective	ESE	: End Semester Examination

BCE-C 101
- → Semester
- → 0, 5 & 6 stands for Theory, Practical & Seminar / Project respectively
- → Paper Code

L- LECTURE; T- TUTORIAL; P- PRACTICAL; CT-CUMULATIVE TEST; TA- TEACHER ASSESSMENT; ESE–ENDSEMESTER EXAMINATION

GURUKULA KANGRI (Deemed to be University), HARIDWAR
Faculty of Engineering & Technology
Computer Science & Engineering

B. Tech. I Year
Semester - II

Subject code	Subject	Periods			Evaluation Scheme				Total marks	Credit
					Continuous Internal Assessment		CIA Total	ESE		
		L	T	P	CT	TA				
THEORY										
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	3	1	0	20	10	30	70	100	0
	Summer Training and Internship	A training or internship is to be pursued after II sem, and the credits will be given in III sem after submitting the training certificate followed by presentation								
PRACTICAL										
BAP-C251	Engineering Physics Lab	0	0	2	10	5	15	35	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	15	5	10	140	70	260	490	750	20

Coding

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BEM : Mathematics
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ESE : End Semester Examination

BCE-C 101
- 1 → Semester
- 0, 5 & 6 stands for Theory, Practical & Seminar / Project respectively
- 101 → Paper Code

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GURUKULA KANGRI (Deemed to be University), HARIDWAR
Faculty of Engineering & Technology
Computer Science & Engineering

B.Tech. II Year
Semester - III

DSC/ SEC/ AECC	Subject	Periods			Evaluation Scheme				Total Marks	Credits
					Continuous Internal Assessment		CIA Total	ESE		
		L	T	P	CT	TA				
THEORY										
BEM-C302	Engineering Mathematics– III	3	1	0	20	10	30	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
PRACTICAL										
BCE-C355	Digital System Design Lab	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

Coding:

BCE : Computers BET : Electronics BEM : Mathematics
BEE : Electricals BHU : Humanities BME : Mechanical
BAC : Chemistry BAP : Physics BEN : Environment
C : Discipline Specific Course A : Ability Enhancement Compulsory Course S : Skill Enhancement Course
E : Discipline ElectiveCourse G : Generic Elective ESE : End Semester Examination

BCE-C 101
- Semester
- 0, 5 & 6 stands for Theory, Practical & Seminar / Project respectively
- Paper Code

L- LECTURE; T- TUTORIAL; P- PRACTICAL; CT-CUMULATIVE TEST; TA- TEACHER ASSESSMENT; ESE–ENDSEMESTER EXAMINATION

GURUKULA KANGRI (Deemed to be University), HARIDWAR
Faculty of Engineering & Technology
Computer Science & Engineering

B. Tech. II Year
Semester - IV

Subject code	Subject	Periods			Evaluation Scheme				Total marks	Credit
					Continuous Internal Assessment		CIA Total	ESE		
		L	T	P	CT	TA				
THEORY										
BEM-C403	Discrete Mathematics	3	1	0	20	10	30	70	100	4
BCE-C408	Database Management System	3	0	0	20	10	30	70	100	3
BCE-C406	Object Oriented Programming using Java	3	0	0	20	10	30	70	100	3
BCE-C407	Operating System	3	0	0	20	10	30	70	100	3
BET-C411	Microprocessor and Interfacing	3	0	0	20	10	30	70	100	3
BKT-A403	Bhartiya Gyan Parampara (IKT)	2	0	0	20	10	30	70	100	0
	Summer training and Internship	**To be pursued during summer vacations, certificate of completion to be submitted in the department**								
PRACTICAL										
BCE-C455	DBMS Lab	0	0	2	10	5	15	35	50	1
BCE-C456	Object Oriented Programming using Java Lab	0	0	2	10	5	15	35	50	1
BET-C461	Microprocessor and Interfacing Lab	0	0	2	10	5	15	35	50	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

Coding

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C	: Discipline Specific Course	A	: Ability Enhancement Compulsory Course	S	: Skill Enhancement Course

E : Discipline ElectiveCourse G : Generic Elective ESE : End Semester Examination

BCE-C 101
- Semester
- 0, 5 & 6 stands for Theory, Practical & Seminar / Project respectively
- Paper Code

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GURUKULA KANGRI (Deemed to be University), HARIDWAR
Faculty of Engineering & Technology
Computer Science & Engineering

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

SEMESTER-V

DSC/SEC/DSE/AEC	SUBJECT	PERIODS			EVALUATION SCHEME				Subject Total	Credits
					SESSIONAL EVALUATION			EXAM		
		L	T	P	CT	TA	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
PRACTICAL										
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	04	06	170	85	255	595	850	25

*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.

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-O530	Advance Operating System
BCE-O531	Functional Programming Principles with Scala
BET-O532	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
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SEMESTER-VI

DSC/SEC/DSE/AEC	SUBJECT	PERIODS			EVALUATION SCHEME				Subject Total	Credits
					SESSIONAL EVALUATION			EXAM		
		L	T	P	CT	TA	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
PRACTICAL										
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	03	08	160	80	240	560	800	25

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-O630	Applied AI
BET-O631	Digital Image Processing
BCE-O632	Industrial Economics and Business Administration
BCE-O633	Introduction to Data Science and Design Thinking
BCE-O634	Data Mining
BCE-O635	Natural Language Processing
BCE-O636	E-commerce & Social Media Analysis
BCE-O637	Java Programming and Introduction to Python**
BCE-O657	Java Programming and Introduction to Python Lab**

GURUKULA KANGRI (Deemed to be University), HARIDWAR
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B. Tech. Fourth Year
Syllabus in accordance with AICTE Model Curriculum

SEMESTER-VII

DSC/SEC/DSE/ AEC	SUBJECT	PERIODS			EVALUATION SCHEME				Subject Total	Credits
					SESSIONAL EVALUATION			EXAM ESE		
		L	T	P	CT	TA	Total			
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-O7XX	Open Elective –III /	3	0	0	20	10	30	70	100	3
PRACTICAL										
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		12	2	10	110	55	165	385	550	21

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-O731	Optimization Techniques in Computing
BCE-O732	Parallel and Distributed System
BCE-O733	Adhoc and Sensor Networks
BET-O734	BioMedical Signal Processing
BCE-O735	Ecommerce
BCE-O736	Human Resource and Organization Behaviour
BCE-O737	Soft Computing
BCE-O738	Storage Management
BCE-O739	Quantum Computing
BCE-O740	Computer Vision
BCE-O741	AI in Healthcare
BCE-O742	Neural Networks and Deep Learning

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B. Tech. Fourth Year
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SEMESTER-VIII

DSC/SEC/DSE /AEC	SUBJECT	PERIODS			EVALUATION SCHEME				Subject Total	Credits
					SESSIONAL EVALUATION			EXAM ESE		
		L	T	P	CT	TA	TOTAL			
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	03	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/.