

BHAGWANT GLOBAL UNIVERSITYUTTARI JHANDICHAUR KOTDWAR

Approved by UGC &Established by Govt. of Uttarakhand under Act.No.39 of 20

Uttari Jhandi Chaur, Kotdwar Uttarkhand-246149



SYLLABUS

For

Bachelor of Technology Programs

(For admission in 2023-24 and onwards)

Semester - I

S. No.	Subject Codes	Subject Name	Periods			Sessional Exam			ESE		Subject Total	Credit
			L	T	P	CT	TA	Total	TE	PE		
1	02BTCS101/ 01BTCS101	Engineering Physics/ Engineering Chemistry	3	1	0	15	25	40	60		100	4
2	01BTCS102	Introduction to Engineering Mathematics	3	1	0	15	25	40	60		100	4
3	01BTCS103/ 02BTCS103	Basic Electrical Engineering/ Basic Electronics Engineering	3	1	0	15	25	40	60		100	4
4	02BTCS104/ 01BTCS104	Programming for Problem Solving/ Basic Mechanical Engineering	3	1	0	15	25	40	60		100	4
5	02BTCS201/ 01BTCS201	Engineering Physics Lab/ Engineering Chemistry Lab	0	0	2		25			25	50	1
6	01BTCS202/ 02BTCS202	Basic Electrical Engineering Lab/ Basic Electronics Engineering Lab	0	0	2		25			25	50	1
7	02BTCS203/ 01BTCS203	Programming for Problem Solving Lab/Basic Mechanical Engineering Lab	0	0	2		25			25	50	1
8	02BTCS204/ 01BTCS204	Engineering Graphics & Design Lab/ Workshop Practices Lab	0	1	2		50			50	100	2
9	02BTCS205/ 01BTCS205	Introduction to Digital Marketing/ Emerging Technologies in Engineering	0	0	2		25			25	50	1
10	01BTCS206/ 02BTCS206	Self Employment and Entrepreneurship Development/ Computer Applications and IOT	0	0	2		25			25	50	1
11	01BTCS105/	Environmental Studies	2	0	0	15	25	40	60		100	4
12	01BTCS301	General Proficiency						100			100	
13		Internship-I/Mini Project - I	3-4 Weeks internship to be completed at the end of first or second semester during vacation period and its evaluation/ credit to be added in third semester of relevant branch.									
		Total									950	27

Abbreviations: L-No. of Lecture hours per week, T-No. of Tutorial hours per week, P-No. of Practical hours per week,

CT-Class Test Marks, TA-Marks of teacher's assessment including student's class performance and attendance,

PS-Practical Sessional Marks, ESE-End Semester Examination, TE- Theory Examination

Marks, PE- Practical External Examination Marks

1 Hr Lecture	1 Hr Tutorial	2 or 3 Hr Practica
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1 Credit	1 Credit	1 Credit
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Semester - II

S. No.	Subject Codes	Subject Name	Periods			Sessional Exam			ESE		Subject Total	Credit
			L	T	P	CT	TA	Total	TE	PE		
1	02BTCS101/ 01BTCS101	Engineering Physics/ Engineering Chemistry	3	1	0	15	25	40	60		100	4
2	02BTCS102	Analytical Mathematics	3	1	0	15	25	40	60		100	4
3	01BTCS103/ 02BTCS103	Basic Electrical Engineering/ Basic Electronics Engineering	3	1	0	15	25	40	60		100	4
4	02BTCS104/ 01BTCS104	Programming for Problem Solving/ Basic Mechanical Engineering	3	1	0	15	25	40	60		100	4
5	02BTCS201/ 01BTCS201	Engineering Physics Lab/ Engineering Chemistry Lab	0	0	2		25	25		25	50	1
6	01BTCS202/ 02BTCS202	Basic Electrical Engineering Lab/ Basic Electronics Engineering Lab	0	0	2		25	25		25	50	1
7	02BTCS203/ 01BTCS203	Programming for Problem Solving Lab/Basic Mechanical Engineering Lab	0	0	2		25	25		25	50	1
8	02BTCS204/ 01BTCS204	Engineering Graphics & Design Lab/ Workshop Practices Lab	0	1	2		50	50		50	100	2
9	01BTCS205/ 02BTCS205	Emerging Technologies in Engineering/ Introduction to Digital Marketing	0	0	2		25	25		25	50	1
10	02BTCS206/ 01BTCS206	Computer Applications and IOT/ Self Employment and Entrepreneurship Development	0	0	2		25	25		25	50	1
11												
12	02BTCS301	General Proficiency						100			100	
13		Internship-I/Mini Project-I	3-4 Weeks internship to be completed at the end of first or second semester during vacation period and its evaluation/ credit to be added in third semester of relevant branch.									
		Total									850	23

Abbreviations: L-No. of Lecture hours per week, T-No. of Tutorial hours per week, P-No. of Practical hours per week,

CT-Class Test Marks, TA-Marks of teacher's assessment including student's class performance and attendance,

PS-Practical Sessional Marks, ESE-End Semester Examination, TE- Theory Examination

Marks, PE- Practical External Examination Marks

**1 Hr
Lecture**

**1 Hr
Tutorial**

2 or 3 Hr Practical

1 Credit

1 Credit

1 Credit

Semester - III

S. NO.	Subject Codes	Subject	Periods			Evaluation Scheme					Subject Total	Credit
			L	T	P	Sessional Exam			ESE			
						CT	TA	Total	TE	PE		
1	04BTCS101/ 03BTCS101	Advanced Applied Mathematics / Digital Electronics	3	1	0	15	25	40	60		100	4
2	03BTCS102/ 04BTCS101	Technical Communication/ Universal Human Value	2	1	0	15	25	40	60		100	3
3	03BTCS103	Discrete Structure	3	1	0	15	25	40	60		100	4
4	03BTCS104	Data Structures and Algorithms	3	1	0	15	25	40	60		100	4
5	03BTCS105	Object Oriented Programming	3	1	0	15	25	40	60		100	4
6	03BTCS201	Data Structures and Algorithms Lab	0	0	2		25	25		25	50	1
7	03BTCS202	Object Oriented Programming Lab	0	0	2		25	25		25	50	1
8	03BTCS203	Python Programming Lab	0	0	2		25	25		25	50	1
9	03BTCS204	Internship-I/Mini Project-I*	0	0	2			50			50	1
10	04BTCS107/ 03BTCS106	Python Programming/ Cyber Security	2	0	0	15	10	25	50			
11	03BTCS301	General Proficiency						100			100	
		Total									850	23
12		Minor Course (Optional)**	3	1	0	30	20	50	100			4
	*The Mini Project-I or Internship-I(3-4weeks) will be conducted during summer break after the II semester and will be assessed during the III semester MOOCs course											

Abbreviations: L-No. of Lecture hours per week, T-No. of Tutorial hours per week, P-No. of Practical hours per week, CT-Class Test Marks, TA-Marks of teacher's assessment including student's class performance and attendance, PS-Practical Sessional Marks, ESE-End Semester Examination, TE- Theory Examination Marks, PE- Practical External Examination Marks

Minor Courses (Optional) **: Select any subject from Annexure – II from other departments

1 Hr Lecture 1 Hr Tutorial 2 or 3 Hr Practical

1 Credit 1 Credit 1 Credit

Semester - IV

S. NO.	Subject Codes	Subject	Periods			Evaluation Scheme					Subject Total	Credit
						Sessional Exam			ESE			
			L	T	P	CT	TA	Total	TE	PE		
1	04BTCS101/ 03BTCS101	Advanced Applied Mathematics / Digital Electronics	3	0	0	15	25	40	60		100	3
2	03BTCS102/ 04BTCS101	Technical Communication/ Universal Human Value	2	1	0	15	25	40	60		100	3
3	04BTCS103	Computer Organization and Architecture	3	1	0	15	25	40	60		100	4
4	04BTCS104	JAVA Programming	3	1	0	15	25	40	60		100	4
5	04BTCS105	Formal Languages & Automata Theory	3	1	0	15	25	40	60		100	4
6	04BTCS201	Computer Organization and Architecture Lab	0	0	2		25	25		25	50	1
7	04BTCS202	JAVA Programming Lab	0	0	2		25	25		25	50	1
8	04BTCS203	UNIX/LINUX Lab	0	0	2		25	25		25	50	1
9	04BTCS107/ 03BTCS106	Python Programming/ Cyber Security	2	0	0	15	25	40	60		100	
10	04BTCS301	General Proficiency						100			100	
		Total									850	21
11		Minor Course (Optional)	3	1	0	30	20	50	100			4
		Internship-II/Mini Project-II*	To be completed at the end of the fourth semester (during the Summer).									
	MOOCs course											

Abbreviations: L-No. of Lecture hours per week, T-No. of Tutorial hours per week, P-No. of Practical hours per week, CT-Class Test Marks, TA-Marks of teacher's assessment including students class performance and attendance, PS-Practical Sessional Marks, ESE-End Semester Examination, TE- Theory Examination Marks, PE- Practical External Examination Marks

Minor Courses (Optional) **: Select any subject from Annexure – II from other departments

1 Hr Lecture

1 Hr Tutorial

2 or 3 Hr Practical

1 Credit

1 Credit

1 Credit

Semester - V

S. NO.	Subject Codes	Subject	Periods			Evaluation Scheme					Subject Total	Credit
						Sessional Exam			ESE			
			L	T	P	CT	TA	Total	TE	PE		
1	05BTCS101	Design and Analysis of Algorithms	3	1	0	15	25	40	60		100	4
2	05BTCS102	Database Management System	3	1	0	15	25	40	60		100	4
3	05BTCS103	Compiler Design	3	1	0	15	25	40	60		100	4
4	05BTCS104	Departmental Elective-1	3	0	0	15	25	40	60		100	3
5	05BTCS105	Departmental Elective-2	3	0	0	15	25	40	60		100	3
6	CSP-010	Design and Analysis of Algorithms Lab	0	0	2		25	25		25	50	1
7	CSP-011	Database Management System Lab	0	0	2		25	25		25	50	1
8	CSP-012	Compiler Design Lab	0	0	2		25	25		25	50	1
9	CSP-013	Mini Project-II or Internship-II*	0	0	2			50			50	1
10	05BTCS106/ 05BTCS107	Constitution of India / Essence of Indian Traditional Knowledge	2	0	0	15	25	40	60		100	
11	05BTCS301	General Proficiency						100			100	
		Total	17	3	8						900	22
12		Minor Course(Optional)**	3	1	0	30	20	50	100			4
*The Mini Project-II or Internship-II (4-6weeks)will be conducted during summer break after IV semester and will be assessed during the V semester												
MOOCs course												

Departmental Elective-1		
S. No.	Subject Code	Subject Name
1	05BTCS-013	Graph Theory
2	05BTCS -014	Computer Graphics
3	05BTCS -015	Software Engineering
4	05BTCS -016	Queuing Theory & Modelling

Departmental Elective- 2		
S. No.	Subject Code	Subject Name
1	05BTCS -017	Fault Tolerant Computing
2	05BTCS -018	Real-Time System
3	05BTCS -019	Distributed System
4	05BTCS -020	Fuzzy Logic

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Minor Courses (Optional) **: Select any subject from Annexure – II from other departments

1 Hr Lecture

1 Hr Tutorial

2 or 3 Hr Practical

1 Credit

1 Credit

1 Credit

Semester - VI

S. NO.	Subject Codes	Subject	Periods			Evaluation Scheme					Subject Total	Credit
						Sessional Exam			ESE			
			L	T	P	CT	TA	Total	TE	PE		
1	06BTCS101	Computer Networks	3	1	0	15	25	40	60		100	4
2	06BTCS102	Artificial Intelligence	3	1	0	15	25	40	60		100	4
3	06BTCS103	Operating System	3	1	0	15	25	40	60		100	4
4	06BTCS104	Departmental Elective-3	3	0	0	15	25	40	60		100	3
5	06BTCS105	Open Elective-1	3	0	0	15	25	40	60		100	3
6	06BTCS201	Computer Networks Lab	0	0	2		25	25		25	50	1
7	06BTCS202	Artificial Intelligence Lab	0	0	2		25	25		25	50	1
8	06BTCS203	Operating System Lab	0	0	2		25	25		25	50	1
9	06BTCS106/ 06BTCS107	Constitution of India / Essence of Indian Traditional Knowledge	2	0	0	15	25	40	60		100	
10	06BTCS108	Happiness and Well-being	2	0	0	15	25	40	60		100	
11	06BTCS301	General Proficiency						100			100	
		Total	17	3	6						950	21
12		Minor Course (Optional)	3	1	0	30	20	50	100			4
		Internship-III/Mini Project-III*	To be completed at the end of the sixth semester (during the Summer).									
	MOOCs course											

Departmental Elective-3		
S. No.	Subject Code	Subject Name
1	BTCS-024	Internet of Things
2	BTCS -025	Quantum Computing
3	BTCS -026	Augmented Reality
4	BTCS -027	Web Technology
5	BTCS -028	Reliable Computing

Open Elective-1		
S. No.	Subject Code	Subject Name
1	BTCS -011	Total Quality Management
2	BTCS -012	Managing E-Commerce and Digital Communication
3	BTCS -013	Industrial safety and Hazard Management

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Minor Courses (Optional) **: Select any subject from Annexure – II from other departments

1 Hr Lecture

1 Hr Tutorial

2 or 3 Hr Practical

1 Credit

1 Credit

1 Credit

Semester - VII

S. NO.	Subject Codes	Subject	Periods			Evaluation Scheme					Subject Total	Credit
						Sessional Exam			ESE			
			L	T	P	CT	TA	Total	TE	PE		
1	07BTCS101/ 08BTCS101	Rural Development Administration and Planning/ Project Management and Entrepreneurship	3	1	0	15	25	40	60		100	3
2	07BTCS102	Departmental Elective-4	3	0	0	15	25	40	60		100	3
3	07BTCS103	Departmental Elective-5	3	0	0	15	25	40	60		100	3
4	07BTCS104	Open Elective-2	3	0	0	15	25	40	60		100	3
5	07BTCS201	Machine Learning Lab	0	0	2		25	25		25	50	1
6	07BTCS202	Project Seminar	0	0	2			50			50	1
7	07BTCS203	Design Project	0	0	4			100			100	2
8	07BTCS204	Mini Project-III or Internship-III*	0	0	2			50			50	1
9	07BTCS105	Disaster Management	2	0	0	15	25	40	60		100	2
10	07BTCS106	Innovations and Problem Solving	2	1	0	15	25	40	60		100	
11	07BTCS301	General Proficiency						100			100	
		Total	12	1	12						950	19
12		Minor Course (Optional)**	3	1	0	30	20	50	100			4
*The Internship-III (4-6weeks) will be conducted during summer break after the VI semester and will be assessed during VII semester.												
MOOCs course												

Departmental Elective-4

S. No.	Subject Code	Subject Name
1	BTCS-029	Ad-hoc & Sensor Networks
2	BTCS -030	Machine Learning
3	BTCS -031	Mobile Computing
4	BTCS -032	Data Mining
5	BTCS -033	Block Chain

Departmental Elective-5

S. No.	Subject Code	Subject Name
1	BTCS -034	Data Science
2	BTCS -035	Cryptography & Network Security
3	BTCS -036	DevOps
4	BTCS -037	Cloud Computing
5	BTCS -038	Natural Language Processing

Open Elective -2 (This course can be taken only by the students of branches other than CSE and specialized branches of CSE in VIIth semester. Students of CSE and specialized branches of CSE shall opt open electives floated by other departments)

Open Elective-2

S. No.	Subject Code	Subject Name
1	BTCS -051	Computer Network

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Minor Courses (Optional) **: Select any subject from Annexure – II from other departments

1 Hr Lecture

1 Hr Tutorial

2 or 3 Hr Practical

1 Credit

1 Credit

1 Credit

Semester- VIII

S. NO.	Subject Codes	Subject	Periods			Evaluation Scheme					Subject Total	Credit
						Sessional Exam			ESE			
			L	T	P	CT	TA	Total	TE	PE		
1	07BTCS1 01/08BTC S101	Rural Development Administration and Planning/ Project Management and Entrepreneurship	3	0	0	15	25	40	60		100	3
2	08BTCS102	Departmental Elective-6	3	0	0	15	25	40	60		100	3
3	08BTCS103	Open Elective-3	3	0	0	15	25	40	60		100	3
4	08BTCS104	Open Elective-4	3	0	0	15	25	40	60		100	3
5	08BTCS201	Project	0	0	12			250		250	500	6
6	08BTCS301	General Proficiency						100			100	
		Total	12	0	12						900	18
7		Minor Course (Optional)**	3	1	0	30	20	50	100			4
	MOOCs course											

Departmental Elective-6		
S. No.	Subject Code	Subject Name
1	BTCS-039	Soft Computing
2	BTCS -040	Software Project Management
3	BTCS -041	Cyber and Digital Forensics
4	BTCS -042	Digital Image Processing
5	BTCS -043	Big Data Analytics

Open Elective-3		
S. No.	Subject Code	Subject Name
1	BTCS -052	Software Engineering

Open Elective-4		
S. No.	Subject Code	Subject Name
1	BTCS -053	Object Oriented Programming

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Minor Courses (Optional) **: Select any subject from Annexure – II from other departments

1 Hr Lecture 1 Hr Tutorial 2 or 3 Hr Practical

1 Credit 1 Credit 1 Credit