

GRADUATION REQUIREMENT (2021-22)

Batch: 2021

B. Tech. (Information Technology)



*Department of Information Technology
College of Technology
G.B. Pant University of Agriculture of
Technology Pantnagar-263145 (Uttarakhand)*

GRADUATION REQUIREMENT (2021-22)

B. Tech. (Information Technology)

(BATCH: 2021)

Sr. No.	Course Code	Course Title	Hours per week			Credits	Pre-requisite
			L	T	P		
1.	BPC-102	CHEMISTRY-I	3	0	3	4	NIL
2.	BPM-143	CALCULUS AND LINEAR ALGEBRA	3	1	0	4	NIL
3.	TEE-104	BASIC ELECTRICAL ENGINEERING	3	1	2	5	NIL
4.	TID/ TSW/ TCE/ TME-109	INTRODUCTION TO ENVIRONMENTAL ENGINEERING AND DISASTER MANAGEMENT	3	0	0	3	NIL
5.	TIT-121	PROGRAMMING FOR PROBLEM SOLVING	3	0	2	4	NIL
6.	TWP-101	WORK PROGRAMME	0	0	3	1	NIL
7.	TIC-100	INDUCTION PROGRAMME (2 WEEKS)	-	-	-	0	NIL
8.	BPP-151	PHYSICS WAVES AND OPTICS AND INTRODUCTION TO QUANTUM MECHANICS	3	1	2	5	NIL
9.	BPM-154	MULTIVARIABLE CALCULUS, TRANSFORMS & ORDINARY DIFFERENTIAL EQUATIONS	3	1	0	4	NIL
10.	TCE-114	ENGINEERING GRAPHICS & DESIGN	1	0	4	3	NIL
11.	TIP-103	WORKSHOP PRACTICES	1	0	4	3	NIL
12.	BHS-186	ENGLISH	2	0	2	3	NIL
13.	BHS-188	INDUSTRIAL SOCIOLOGY	3	0	0	3	NIL

14.	TIT/TCT-191	PRACTICAL TRAINING-I (2 WEEKS)	-	-	-	-	NIL
15.	TIT-233	DATASTRUCTURES	3	0	2	4	NIL
16.	TCT-202	DIGITAL ELECTRONICS	3	0	2	4	NIL
17.	BPS-228	PROBABILITY AND STATISTICS	3	1	0	4	NIL
18.	BHS-286	EFFECTIVE TECHNICAL COMMUNICATION	3	0	0	3	NIL
19.	NSS-201 or NCC-201	NATIONAL SERVICE SCHEME OR NATIONAL CADET CORPS	0	0	4	0	NIL
20.	TIT-234	FOUNDATIONS OF INFORMATION TECHNOLOGY	2	0	2	3	NIL
21.	TIT-235	FORMAL LANGUAGE & AUTOMATA THEORY	3	0	0	3	NIL
22.	TIT-241	DISCRETE MATHEMATICS	3	0	0	3	NIL
23.	TIT-245	COMPUTER ORGANIZATION	3	0	2	4	NIL
24.	TIT-243	OPERATING SYSTEMS	3	0	2	4	NIL
25.	NSS-202 or NCC-202	NATIONAL SERVICE SCHEME OR NATIONAL CADET CORPS	0	0	4	1	NIL
26.	TEC-301	ANALOG ELECTRONIC CIRCUITS	3	0	2	4	NIL
27.	TIT-244	OBJECT ORIENTED PROGRAMMING	2	0	4	4	NIL
28.	TIT/TCT-291	PRACTICAL TRAINING-II (2 weeks)	0	0	0	0	NIL
29.	TIT-351	DATABASE MANAGEMENT SYSTEMS	3	0	2	4	NIL
30.	TIT-352	JAVA PROGRAMMING	2	0	4	4	NIL
31.	TIT-*	ELECTIVE-I	3	0	0	3	NIL
32.	BHS-100	CONSTITUTION OF INDIA	1	0	0	1	NIL
33.	TIT-353	DESIGN & ANALYSIS OF ALGORITHMS	3	0	2	4	NIL
34.	TIT-362	E- COMMERCE	2	0	2	3	NIL
35.	NSS-301 or NCC-301	NATIONAL SERVICE SCHEME OR NATIONAL CADET CORPS	0	0	4	0	NIL
36.	TIT-*	ELECTIVE-II	3	0	0	3	NIL
37.	TIT-*	ELECTIVE-III	3	0	0	3	NIL
38.	*****	OPEN ELECTIVE-I	-	-	-	3	NIL

39.	NSS-302 or NCC-302	NATIONAL SERVICE SCHEME OR NATIONAL CADET CORPS	0	0	4	1	NIL
40.	TIT-363	MODERN TRENDS IN INFORMATION TECHNOLOGY	2	0	2	3	NIL
41.	TIT-365	WEB AND INTERNET TECHNOLOGY	3	0	2	4	NIL
42.	TIT-364	COMPUTER NETWORKS	3	0	2	4	NIL
43.	TIT/TCT- 391	PRACTICAL TRAINING-III (4 WEEKS)	0	0	0	0	NIL
44.	TIT-483	COMPUTER SYSTEM SECURITY	2	0	2	3	NIL
45.	TIT-*	ELECTIVE-IV	3	0	0	3	NIL
46.	TIT-*	ELECTIVE-V	3	0	0	3	NIL
47.	TIT-484	IT WORKSHOP	1	0	2	2	NIL
48.	*****	OPEN ELECTIVE-II	-	-	-	3	NIL
49.	TIT-495A	PROJECT-I	0	0	8	4	NIL
50.	TIT-492	SEMINAR	0	0	2	1	NIL
51.	TIT-486	OPEN SOURCE SYSTEMS	2	0	2	3	NIL
52.	TIT-*	ELECTIVE-VI	3	0	0	3	NIL
53.	*****	OPEN ELECTIVE-III	-	-	-	3	NIL
54.	*****	OPEN ELECTIVE-IV	-	-	-	3	NIL
55.	TIT-495B	PROJECT-II	0	0	16	8	NIL
TOTAL CREDITS						162	

Note:

1. Those students who have not taken Hindi at the High School or equivalent level will also require to register the course BHS-173, Elementary Hindi – 2 Credits.
2. An Induction Programme of Two week is to be offered to the students at the start of first year.
3. The Students can take open elective from any department of the University.

**GRADUATION REQUIREMENTS FOR
B. TECH. (INFORMATION TECHNOLOGY) (REGULAR)
SEMESTER-WISE DISTRIBUTION OF COURSES, BATCH-2021**

SEMESTER I (FIRST YEAR I-SEMESTER)						
Sr. No.	Course Code	Course Title	Hours per week			Credits
			L	T	P	
1	TIC-100	Induction Programme (2 Weeks)	-	-	-	-
2	TWP-101	Work Programme	0	0	3	1
3	BPC-102	Chemistry-I	3	0	3	4
4	TEE-104	Basic Electrical Engineering	3	1	2	5
5	TID/ TSW/ TCE/ TME-109	Introduction to Environmental Engineering and Disaster Management	3	0	0	3
6	TIT-121	Programming for Problem Solving	3	0	2	4
7	BPM-143	Calculus and Linear Algebra	3	1	0	4
Total Credits						21
SEMESTER II (FIRST YEAR II-SEMESTER)						
1	TIP-103	Workshop Practices	1	0	4	3
2	TCE-114	Engineering Graphics & Design	1	0	4	3
3	BPP-151	Physics Waves and Optics and Introduction to Quantum Mechanics	3	1	2	5
4	BPM-154	Multivariable Calculus, Transforms & Ordinary differential equations	3	1	0	4
5	BHS-186	English	2	0	2	3
6	BHS-188	Industrial Sociology	3	0	0	3
7	TIT/TCT-191	Practical Training-I (2 weeks)	-	-	-	-
Total Credits						21

SEMESTER III (SECOND YEAR I-SEMESTER)

Sr. No.	Code	Course Title	Hours per week			Credits
			L	T	P	
1.	TCT-202	Digital Electronics	3	0	2	4
2.	BPS-228	Probability and Statistics	3	1	0	4
3.	TIT-233	Data Structures	3	0	2	4
4.	TIT-234	Foundations of Information Technology	2	0	2	3
5.	TIT-235	Formal Language & Automata Theory	3	0	0	3
6.	BHS-286	Effective Technical Communication	3	0	0	3
7.	NSS-201 or NCC-201	National Service Scheme or National Cadet Corps	0	0	4	0
TOTAL CREDITS						21

SEMESTER IV (SECOND YEAR II-SEMESTER)

Sr. No.	Code	Course Title	Hours per week			Credits
			L	T	P	
1.	TIT-241	Discrete Mathematics	3	0	0	3
	TIT-243	Operating Systems	3	0	2	4
	TIT-244	Object Oriented Programming	2	0	4	4
	TIT-245	Computer Organization	3	0	2	4
	TEC-301	Analog Electronic Circuits	3	0	2	4
	NSS-202 or NCC-202	National Service Scheme or National Cadet Corps	0	0	4	1
	TIT/TCT-291	Practical Training-II (2 Weeks)	0	0	0	0
TOTAL CREDITS						20

SEMESTER V (THIRD YEAR I-SEMESTER)

Sr. No.	Code	Course Title	Hours per week			Credits
			L	T	P	
1.	BHS-100	Constitution of India	1	0	0	1
2.	*****	Open Elective-I	-	-	-	3
3.	TIT-351	Database Management Systems	3	0	2	4
4.	TIT-352	Java Programming	2	0	4	4
5.	TIT-353	Design & Analysis of Algorithms	3	0	2	4
6.	TIT-362	E- Commerce	2	0	2	3
7.	TIT-*	Elective-I	3	0	0	3
8.	NSS-301 or NCC-301	National Service Scheme or National Cadet Corps	0	0	4	0
TOTAL CREDITS						22

SEMESTER VI (THIRD YEAR II-SEMESTER)

Sr. No.	Code	Course Title	Hours per week			Credits
			L	T	P	
1.	TIT-363	Modern Trends in Information Technology	2	0	2	3
2.	TIT-364	Computer Networks	3	0	2	4
3.	TIT-365	Web and Internet Technology	3	0	2	4
4.	*****	Open Elective-II	-	-	-	3
5.	TIT-*	Elective-II	3	0	0	3
6.	TIT-*	Elective-III	3	0	0	3
7.	NSS-302 or NCC-302	National Service Scheme Or National Cadet Corps	0	0	4	1
8.	TIT/TCT-391	Practical Training-III (4 Weeks)	0	0	0	0
TOTAL CREDITS						21

SEMESTER VII (FOURTH YEAR I-SEMESTER)

Sr. No.	Code	Course Title	Hours per week			Credits
			L	T	P	
1.	TIT-483	Computer System Security	2	0	2	3
2.	TIT-484	IT Workshop	1	0	2	2
3.	TIT-*	Elective-IV	3	0	0	3
4.	TIT-*	Elective-V	3	0	0	3
5.	*****	Open Elective-III	-	-	-	3
6.	TIT-492	Seminar	0	0	2	1
7.	TIT-495A	Project-I	0	0	8	4
TOTAL CREDITS						19

SEMESTER VIII (FOURTH YEAR II-SEMESTER)

Sr. No.	Code	Course Title	Hours per week			Credits
			L	T	P	
1.	*****	Open Elective-IV	-	-	-	3
2.	TIT-486	Open Source Systems	2	0	2	3
3.	TIT-*	Elective-VI	3	0	0	3
4.	TIT-495B	Project-II	0	0	16	8
TOTAL CREDITS						17

TIT-*: Elective Course- Course to be selected from the list of Programme Elective Courses.

*******:** Open Elective Course- The Students can take open elective from any department of the University.

Total Credit Hours: 162

NOTE: Students will take either NSS or NCC and once they have opted, students will not be able to change NSS to NCC or NCC to NSS.

**GRADUATION REQUIREMENTS FOR
B. TECH. IN INFORMATION TECHNOLOGY (REGULAR)
SEMESTER-WISE DISTRIBUTION OF COURSES
(DIPLOMA BATCH –2022)**

I-SEMESTER, B.TECH (I.T.), II YEAR

Sr. No.	Code	Course Title	Hours per week			Credits
			L	T	P	
1.	TCT-202	Digital Electronics	3	0	2	4
2.	BPS-228	Probability and Statistics	3	1	0	4
3.	TIT-233	Data Structures	3	0	2	4
4.	TIT-234	Foundations of Information Technology	2	0	2	3
5.	TIT-235	Formal Language & Automata Theory	3	0	0	3
6.	BHS-286	Effective Technical Communication	3	0	0	3
7.	NSS-201 or NCC-201	National Service Scheme or National Cadet Corps	0	0	4	0
8.	TWP-101	Work Programme	0	0	3	1
TOTAL CREDITS						22

II-SEMESTER, B.TECH (I.T.), II YEAR

Sr. No.	Code	Course Title	Hours per week			Credits
			Lecture	Tutorial	Practical	
1.	TIT-241	Discrete Mathematics	3	0	0	3
2.	TIT-243	Operating Systems	3	0	2	4
3.	TIT-244	Object Oriented Programming	2	0	4	4
4.	TIT-245	Computer Organization	3	0	2	4
5.	TEC-301	Analog Electronic Circuits	3	0	2	4
6.	NSS-202 or NCC-202	National Service Scheme or National Cadet Corps	0	0	4	1
7.	TIT/TCT-291	Practical Training-II (2 Weeks)	0	0	0	0
TOTAL CREDITS						20

I-SEMESTER, B.TECH (I.T.), III YEAR

Sr. No.	Code	Course Title	Hours per week			Credits
			L	T	P	
1.	BHS-100	Constitution of India	1	0	0	1
2.	*****	Open Elective-I	-	-	-	3
3.	TIT-351	Database Management Systems	3	0	2	4
4.	TIT-352	Java Programming	2	0	4	4
5.	TIT-353	Design Analysis of Algorithms	3	0	2	4
6.	TIT-362	E- Commerce	2	0	2	3
7.	TIT-*	Elective-I	3	0	0	3
8.	NSS-301 or NCC-301	National Service Scheme or National Cadet Corps	0	0	4	0
TOTAL CREDITS						22

II-SEMESTER, B.TECH (I.T.), III YEAR

Sr. No.	Code	Course Title	Hours per week			Credits
			L	T	P	
1.	TIT-363	Modern Trends in Information Technology	2	0	2	3
2.	TIT-364	Computer Networks	3	0	2	4
3.	TIT-365	Web and Internet Technology	3	0	2	4
4.	TIT-*	Elective-II	3	0	0	3
5.	TIT-*	Elective-III	3	0	0	3
6.	*****	Open Elective-II	-	-	-	3
7.	NSS-302 or NCC-302	National Service Scheme or National Cadet Corps	0	0	4	1
8.	TIT/TCT-	Practical Training-III (4 Weeks)	0	0	0	0
TOTAL CREDITS						21

I-SEMESTER, B.TECH (I.T.), IV YEAR

Sr. No.	Code	Course Title	Hours per week			Credits
			L	T	P	
1.	*****	Open Elective-III	-	-	-	3
2.	TIT-483	Computer System Security	2	0	2	3
3.	TIT-484	IT Workshop	1	0	2	2
4.	TIT-*	Elective-IV	3	0	0	3
5.	TIT-*	Elective-V	3	0	0	3
6.	TIT-495A	Project-I	0	0	8	4
7.	TIT-492	Seminar	0	0	2	1
TOTAL CREDITS						19

II-SEMESTER, B.TECH (I.T.), IV YEAR

Sr. No.	Code	Course Title	Hours per week			Credits
			L	T	P	
1.	*****	Open Elective-IV	-	-	-	3
2.	TIT-486	Open Source Systems	2	0	2	3
3.	TIT-*	Elective-VI	3	0	0	3
4.	TIT-495B	Project-II	0	0	16	8
TOTAL CREDITS						17

TIT-*: Elective Course- Course to be selected from the list of Programme Elective Courses.

*******:** Open Elective Course- The Students can take open elective from any department of the University.

Total Credit Hours: 121

NOTE: Students will take either NSS or NCC and once they have opted, students will not be able to change NSS to NCC or NCC to NSS.

LIST OF B.TECH. (I.T.) PROGRAMME ELECTIVE COURSES

Sr. No.	Course No	Course Name	Credit (L-T-P)	Pre-requisite
1.	TIT-301	COMPUTER ARCHITECTURE	3(3-0-0)	NIL
2.	TIT-302	IT MARKETING	3(3-0-0)	NIL
3.	TIT-303	THEORY OF COMPUTATION	3(3-0-0)	NIL
4.	TIT-304	SOFTWARE ENGINEERING	3(3-0-0)	NIL
5.	TIT-305	KNOWLEDGE MANAGEMENT	3(3-0-0)	NIL
6.	TIT-307	INTERNET OF THINGS	3(3-0-0)	NIL
7.	TIT-308	ARTIFICIAL INTELLIGENCE	3(3-0-0)	NIL
8.	TIT-309	DATA ANALYTICS	3(3-0-0)	NIL
9.	TIT-310	MULTIMEDIA TECHNOLOGY	3(3-0-0)	NIL
10.	TIT-311	COMPILER DESIGN	3(3-0-0)	NIL
11.	TIT-366	INTELLECTUAL PROPERTY RIGHTS	3(3-0-0)	NIL
12.	TIT-401	EMBEDDED SYSTEMS	3(3-0-0)	NIL
13.	TIT-402	MOBILE COMPUTING	3(3-0-0)	NIL
14.	TIT-403	CLOUD COMPUTING	3(3-0-0)	NIL
15.	TIT-404	COMPUTER GRAPHICS AND ANIMATION	3(3-0-0)	NIL
16.	TIT-405	DISTRIBUTED COMPUTING	3(3-0-0)	NIL
17.	TIT-406	IMAGE PROCESSING	3(3-0-0)	NIL
18.	TIT-407	DATA MINING & WARE HOUSING	3(3-0-0)	NIL
19.	TIT-408	DECISION SUPPORT SYSTEMS	3(3-0-0)	NIL
20.	TIT-409	AD-HOC & SENSOR NETWORKS	3(3-0-0)	NIL
21.	TIT-410	MACHINE LEARNING	3(3-0-0)	NIL
22.	TIT-411	MANAGEMENT INFORMATION SYSTEMS	3(3-0-0)	NIL
23.	TIT-412	SIMULATION & MODELING	3(3-0-0)	NIL

LIST OF B.TECH. (I.T.) PROGRAMME OPEN ELECTIVE COURSES

Sr. No.	Course No	Course Name	Credit (L-T-P)	Pre-requisite
1.	TIT-305	KNOWLEDGE MANAGEMENT	3(3-0-0)	NIL
2.	TIT-366	INTELLECTUAL PROPERTY RIGHTS	3(3-0-0)	NIL
3.	TIT-406	IMAGE PROCESSING	3(3-0-0)	NIL
4.	TIT-411	MANAGEMENT INFORMATION SYSTEMS	3(3-0-0)	NIL