

FACULTY OF ENGINEERING & TECHNOLOGY
INSTITUTE OF COMPUTER TECHNOLOGY
BACHELOR OF TECHNOLOGY IN COMPUTER SCIENCE & ENGINEERING (BIG DATA AND ANALYTICS) (B.TECH-CSE(BDA))
Syllabus Details

Effective Year 2021-2022

Program : B.TECH-CSE(BDA)
Total Course : 7
Total Elective Course : 1
Total Audit Course : 1

Semester : 1
Total Regular Course : 5
Total Open Course : 0

#	CourseCode	Course Title	Teaching Scheme				Examination Scheme				
			CREDIT			TOTAL HOURS	TH		PR		TOTAL
			TH	PR/TW	TOTAL		Internal	External	Internal	External	
1	2HS101	CALCULUS	4.00	0.00	4.00	4.00	0/40	0/60	-	-	100
2	2CSE101	INTERNET PROGRAMMING	3.00	2.00	5.00	7.00	0/40	0/60	0/60	0/40	200
3	2CSE102	ESSENTIALS OF SOFTWARE FOUNDATION & PROGRAMMING - I	3.00	2.00	5.00	7.00	0/40	0/60	0/60	0/40	200
4	2CSE103	DIGITAL ELECTRONICS	3.00	1.00	4.00	5.00	0/40	0/60	0/30	0/20	150
5	2CSE104	BASIC ELECTRONICS	3.00	1.00	4.00	5.00	0/40	0/60	0/30	0/20	150
6		AUDIT SUBJECT - 1	0.00	0.00	0.00	2.00	-	-	-	-	0
7		ELECTIVE SUBJECT - 1 (UHV_Elective-I)	2.00	0.00	2.00	2.00	0/100	-	-	-	100
			18.00	6.00	24.00	32.00					900

List of Elective Subjects

Group Name	Course Code	Name of Course
UHV_ELECTIVE-I	UHV1IPDC1	UNIVERSAL HUMAN VALUE (INTEGRATED PERSONALITY DEVELOPMENT COURSE-1)
	UHV3DYSBG1	UNIVERSAL HUMAN VALUE (DISCOVER YOURSELF THROUGH BHAGAVAD GITA-1)

List of Audit Subjects

Group Name	Course Code	Name of Course
AUDIT	2OS101	CAREER DEVELOPMENT PROGRAM - I

Examination Grade Range & Value

Marks/Perc. Range	Grade (Regular)	Grade Point (Regular)	Grade (Remedial)	Grade Point (Remedial)
90>=	A+	10	A	9
80 To 89	A	9	B+	8
70 To 79	B+	8	B	7
60 To 69	B	7	C+	6
50 To 59	C+	6	C	5
40 To 49	C	5	C	5
<40	F	0	F	0

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Effective Year 2021-2022

Program : B.TECH-CSE(BDA)
Total Course : 9
Total Elective Course : 2
Total Audit Course : 1

Semester : II
Total Regular Course : 6
Total Open Course : 0

#	CourseCode	Course Title	Teaching Scheme				Examination Scheme				
			CREDIT			TOTAL HOURS	TH		PR		TOTAL
			TH	PR/TW	TOTAL		Internal	External	Internal	External	
1	2HS102	LINEAR ALGEBRA	4.00	0.00	4.00	4.00	0/40	0/60	-	-	100
2	2CSE201	APTITUDE SKILL BUILDING	3.00	0.00	3.00	3.00	0/40	0/60	-	-	100
3	2CSE202	BASICS OF COMMUNICATION SYSTEM	3.00	1.00	4.00	5.00	0/40	0/60	0/30	0/20	150
4	2CSE203	ESSENTIALS OF SOFTWARE FOUNDATION & PROGRAMMING - II	3.00	2.00	5.00	7.00	0/40	0/60	0/60	0/40	200
5	2CSE204	BASICS OF OPERATING SYSTEM AND SCRIPTING	0.00	2.00	2.00	4.00	-	-	0/60	0/40	100
6	2CSE205	COMPUTER ORGANIZATION	3.00	1.00	4.00	5.00	0/40	0/60	0/30	0/20	150
7		AUDIT SUBJECT - 1	0.00	0.00	0.00	1.00	-	-	-	-	0
8		ELECTIVE SUBJECT - 1 (UHV_Elective-I)	2.00	0.00	2.00	2.00	0/100	-	-	-	100
			18.00	6.00	24.00	31.00					900

List of Elective Subjects

Group Name	Course Code	Name of Course
UHV_ELECTIVE-I	UHV1IPDC1	UNIVERSAL HUMAN VALUE (INTEGRATED PERSONALITY DEVELOPMENT COURSE-1)
	UHV3DYSBG1	UNIVERSAL HUMAN VALUE (DISCOVER YOURSELF THROUGH BHAGAVAD GITA-1)

List of Audit Subjects

Group Name	Course Code	Name of Course
AUDIT	2OS201	CAREER DEVELOPMENT PROGRAM – II

Examination Grade Range & Value

Marks/Perc. Range	Grade (Regular)	Grade Point (Regular)	Grade (Remedial)	Grade Point (Remedial)
90>=	A+	10	A	9
80 To 89	A	9	B+	8
70 To 79	B+	8	B	7
60 To 69	B	7	C+	6
50 To 59	C+	6	C	5
40 To 49	C	5	C	5
<40	F	0	F	0

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Effective Year 2021-2022

Program	: B.TECH-CSE(BDA)	Semester	: III
Total Course	: 8	Total Regular Course	: 6
Total Elective Course	: 1	Total Open Course	: 0
Total Audit Course	: 1		

#	CourseCode	Course Title	Teaching Scheme				Examination Scheme				
			CREDIT			TOTAL HOURS	TH		PR		TOTAL
			TH	PR/TW	TOTAL		Internal	External	Internal	External	
1	2HS306	APPLIED ENGINEERING MATHEMATICS	4.00	0.00	4.00	4.00	0/40	0/60	-	-	100
2	2HS309	ENTREPRENEURSHIP DEVELOPMENT	3.00	0.00	3.00	3.00	0/40	0/60	-	-	100
3	2CSE301	DATABASE MANAGEMENT SYSTEM	4.00	2.00	6.00	8.00	0/40	0/60	0/60	0/40	200
4	2CSE302	DATA STRUCTURES	3.00	2.00	5.00	7.00	0/40	0/60	0/60	0/40	200
5	2CSE303	OBJECT ORIENTED PROGRAMMING	3.00	2.00	5.00	7.00	0/40	0/60	0/60	0/40	200
6	2HS308	SOCIETAL INTERNSHIP	0.00	1.00	1.00	2.00	-	-	0/30	0/20	50
7		AUDIT SUBJECT - 1	0.00	0.00	0.00	1.00	-	-	-	-	0
8		ELECTIVE SUBJECT - 1 (UHV_Elective-I)	2.00	0.00	2.00	2.00	0/100	-	-	-	100
			19.00	7.00	26.00	34.00					950

List of Elective Subjects

Group Name	Course Code	Name of Course
UHV_ELECTIVE-I	UHV2IPDC2	UNIVERSAL HUMAN VALUE (INTEGRATED PERSONALITY DEVELOPMENT COURSE-2)
	UHV4DYSBG2	UNIVERSAL HUMAN VALUE (DISCOVER YOURSELF THROUGH BHAGAVAD GITA-2)

List of Audit Subjects

Group Name	Course Code	Name of Course
AUDIT	2OS301	PROFESSIONAL SKILL BUILDING - I

Examination Grade Range & Value

Marks/Perc. Range	Grade (Regular)	Grade Point (Regular)	Grade (Remedial)	Grade Point (Remedial)
90>=	A+	10	A	9
80 To 89	A	9	B+	8
70 To 79	B+	8	B	7
60 To 69	B	7	C+	6
50 To 59	C+	6	C	5
40 To 49	C	5	C	5
<40	F	0	F	0

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Effective Year 2021-2022

Program	: B.TECH-CSE(BDA)	Semester	: IV
Total Course	: 7	Total Regular Course	: 6
Total Elective Course	: 0	Total Open Course	: 0
Total Audit Course	: 1		

#	CourseCode	Course Title	Teaching Scheme				Examination Scheme				
			CREDIT			TOTAL HOURS	TH		PR		TOTAL
			TH	PR/TW	TOTAL		Internal	External	Internal	External	
1	2CSE401	PROBABILITY & STATISTICS	3.00	1.00	4.00	5.00	0/40	0/60	0/30	0/20	150
2	2CSE402	OPERATING SYSTEM	3.00	1.00	4.00	5.00	0/40	0/60	0/30	0/20	150
3	2CSE403	FUNCTIONAL PROGRAMMING	3.00	1.00	4.00	5.00	0/40	0/60	0/30	0/20	150
4	2CSE404	MICROPROCESSOR & MICROCONTROLLER	3.00	1.00	4.00	5.00	0/40	0/60	0/30	0/20	150
5	2CSE408	WEB APPLICATION DEVELOPMENT	3.00	2.00	5.00	7.00	0/40	0/60	0/60	0/40	200
6	2CSE409	USER EXPERIENCE AND DESIGN	0.00	1.00	1.00	2.00	-	-	0/30	0/20	50
7		AUDIT SUBJECT - 1	0.00	0.00	0.00	1.00	-	-	-	-	0
			15.00	7.00	22.00	30.00					850

List of Audit Subjects

Group Name	Course Code	Name of Course
AUDIT	2OS401	PROFESSIONAL SKILL BUILDING - II

Examination Grade Range & Value

Marks/Perc. Range	Grade (Regular)	Grade Point (Regular)	Grade (Remedial)	Grade Point (Remedial)
90 >=	A+	10	A	9
80 To 89	A	9	B+	8
70 To 79	B+	8	B	7
60 To 69	B	7	C+	6
50 To 59	C+	6	C	5
40 To 49	C	5	C	5
<40	F	0	F	0

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Effective Year 2021-2022

Program	: B.TECH-CSE(BDA)	Semester	: V
Total Course	: 6	Total Regular Course	: 5
Total Elective Course	: 1	Total Open Course	: 0
Total Audit Course	: 0		

#	CourseCode	Course Title	Teaching Scheme				Examination Scheme				
			CREDIT			TOTAL HOURS	TH		PR		TOTAL
			TH	PR/TW	TOTAL		Internal	External	Internal	External	
1	2CSE501	SOFTWARE ENGINEERING	3.00	1.00	4.00	5.00	0/40	0/60	0/30	0/20	150
2	2CSE502	COMPUTER NETWORKS	3.00	1.00	4.00	5.00	0/40	0/60	0/30	0/20	150
3	2CSE503	ALGORITHM ANALYSIS & DESIGN	3.00	2.00	5.00	7.00	0/40	0/60	0/60	0/40	200
4	2CSE504	SUMMER INTERNSHIP	0.00	2.00	2.00	4.00	-	-	0/60	0/40	100
5	2CSE506	BIG DATA ANALYTICS	3.00	2.00	5.00	7.00	0/40	0/60	0/60	0/40	200
6		ELECTIVE SUBJECT - 1 (ELECTIVE-I)	3.00	1.00	4.00	5.00	0/40	0/60	0/30	0/20	150
			15.00	9.00	24.00	33.00					950

List of Elective Subjects

Group Name	Course Code	Name of Course
ELECTIVE-I	2CSE50E27	DATA SCIENCE & MODELING USING R
	2CSE50E20	VIRTUALIZATION

Examination Grade Range & Value

Marks/Perc. Range	Grade (Regular)	Grade Point (Regular)	Grade (Remedial)	Grade Point (Remedial)
90>=	A+	10	A	9
80 To 89	A	9	B+	8
70 To 79	B+	8	B	7
60 To 69	B	7	C+	6
50 To 59	C+	6	C	5
40 To 49	C	5	C	5
<40	F	0	F	0

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Effective Year 2021-2022

Program	: B.TECH-CSE(BDA)	Semester	: VI
Total Course	: 6	Total Regular Course	: 4
Total Elective Course	: 2	Total Open Course	: 0
Total Audit Course	: 0		

#	CourseCode	Course Title	Teaching Scheme				Examination Scheme				
			CREDIT			TOTAL HOURS	TH		PR		TOTAL
			TH	PR/TW	TOTAL		Internal	External	Internal	External	
1	2CSE601	THEORY OF COMPUTATION	3.00	1.00	4.00	5.00	0/40	0/60	0/30	0/20	150
2	2CSE602	INFORMATION SECURITY	3.00	1.00	4.00	5.00	0/40	0/60	0/30	0/20	150
3	2CSE607	DISCRETE MATHEMATICS	2.00	1.00	3.00	4.00	0/40	0/60	0/30	0/20	150
4	2CSE608	PREDICTIVE MODELING	3.00	2.00	5.00	7.00	0/40	0/60	0/60	0/40	200
5		ELECTIVE SUBJECT - 1 (ELECTIVE-II)	2.00	1.00	3.00	4.00	0/40	0/60	0/30	0/20	150
6		ELECTIVE SUBJECT - 1 (ELECTIVE-III)	3.00	1.00	4.00	5.00	0/40	0/60	0/30	0/20	150
			16.00	7.00	23.00	30.00					950

List of Elective Subjects

Group Name	Course Code	Name of Course
ELECTIVE-II	2CSE60E27	DATA MINING & WAREHOUSING
	2CSE60E20	IMAGE PROCESSING
ELECTIVE-III	2CSE60E25	HIGH PERFORMANCE COMPUTING
	2CSE60E14	ARTIFICIAL INTELLIGENCE

Examination Grade Range & Value

Marks/Perc. Range	Grade (Regular)	Grade Point (Regular)	Grade (Remedial)	Grade Point (Remedial)
90>=	A+	10	A	9
80 To 89	A	9	B+	8
70 To 79	B+	8	B	7
60 To 69	B	7	C+	6
50 To 59	C+	6	C	5
40 To 49	C	5	C	5
<40	F	0	F	0

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Effective Year 2021-2022

Program : B.TECH-CSE(BDA)
Total Course : 6
Total Elective Course : 3
Total Audit Course : 0

Semester : VII
Total Regular Course : 3
Total Open Course : 0

#	CourseCode	Course Title	Teaching Scheme				Examination Scheme				
			CREDIT			TOTAL HOURS	TH		PR		TOTAL
			TH	PR/TW	TOTAL		Internal	External	Internal	External	
1	2CSE701	COMPILER DESIGN	3.00	1.00	4.00	5.00	0/40	0/60	0/30	0/20	150
2	2CSE702	MACHINE LEARNING	3.00	1.00	4.00	5.00	0/40	0/60	0/30	0/20	150
3	2CSE705	BIG DATA APPLICATION DEVELOPMENT	0.00	1.00	1.00	2.00	-	-	0/30	0/20	50
4		ELECTIVE SUBJECT - 1 (ELECTIVE-I)	3.00	1.00	4.00	5.00	0/40	0/60	0/30	0/20	150
5		ELECTIVE SUBJECT - 1 (ELECTIVE-II)	3.00	1.00	4.00	5.00	0/40	0/60	0/30	0/20	150
6		ELECTIVE SUBJECT - 1 (ELECTIVE-III)	3.00	2.00	5.00	7.00	0/40	0/60	0/60	0/40	200
			15.00	7.00	22.00	29.00					850

List of Elective Subjects

Group Name	Course Code	Name of Course
ELECTIVE-I	2CSE70E13	ADVANCED BIG DATA ANALYTICS
	2CSE70E14	PREDICTIVE MODELLING
ELECTIVE-II	2CSE70E16	INTERNET OF THINGS
	2CSE70E19	CLOUD COMPUTING ESSENTIALS
ELECTIVE-III	2CSE70E23	COGNITIVE COMPUTING
	2CSE70E18	DISTRIBUTED SYSTEMS

Examination Grade Range & Value

Marks/Perc. Range	Grade (Regular)	Grade Point (Regular)	Grade (Remedial)	Grade Point (Remedial)
90>=	A+	10	A	9
80 To 89	A	9	B+	8
70 To 79	B+	8	B	7
60 To 69	B	7	C+	6
50 To 59	C+	6	C	5
40 To 49	C	5	C	5
<40	F	0	F	0

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Syllabus Details

Effective Year 2021-2022

Program	: B.TECH-CSE(BDA)	Semester	: VIII
Total Course	: 1	Total Regular Course	: 1
Total Elective Course	: 0	Total Open Course	: 0
Total Audit Course	: 0		

#	CourseCode	Course Title	Teaching Scheme				Examination Scheme				
			CREDIT			TOTAL HOURS	TH		PR		TOTAL
			TH	PR/TW	TOTAL		Internal	External	Internal	External	
1	2CSE801	INDUSTRIAL PROJECT	0.00	16.00	16.00	32.00	-	-	0/200	0/200	400
			0.00	16.00	16.00	32.00					400

Examination Grade Range & Value

Marks/Perc. Range	Grade (Regular)	Grade Point (Regular)	Grade (Remedial)	Grade Point (Remedial)
90>=	A+	10	A	9
80 To 89	A	9	B+	8
70 To 79	B+	8	B	7
60 To 69	B	7	C+	6
50 To 59	C+	6	C	5
40 To 49	C	5	C	5
<40	F	0	F	0