2.6.2

CO – PO Mapping and Articulation Matrix for all Courses

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DEPARTMENT OF ENGLISH

S.NO	SEMESTER	COURSE CODE	COURSE TITLE	COURSE OUTCOMES (COs)		PROGRAM OUTCOMES(POs)	PROGRAM SPECIFIC OUTCOMES (PSOs)
1	I	EHG1SK	1101-1K	CO1	Apply grammatical rules and become proficient in the use of English	PO1, PO2, PO3, PO4,PO7	PSO1, PSO2, PSO3
				CO2	Outline and interpret the critical ideas, values and themes of different writers of different genres.	PO1, PO2, PO3, PO4,PO7	PSO1, PSO2, PSO3
				CO3	Gain articulating the right sounds and intonation of english	PO1, PO2, PO3, PO4,PO7	PSO1, PSO2, PSO3
				CO4	Demonstrate with the practical, emotional ,intellectual and creative aspects of language by integrating knowledge and skill.	PO1, PO2, PO3, PO4,PO7	PSO1, PSO2, PSO3
				CO5	Functions on understanding ideas for yourself, applying knowledge to new situations and using novel examples to explain a concept.	PO1, PO2, PO3, PO4, PO6, PO7	PSO1, PSO2, PSO3

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COURSE -I:

POs/PSOs COs	Mapping(Cos & POs)							Mapping(Cos & PSOs)		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
CO1	3	3	3	3	-	-	3	3	3	2
CO2	3	3	2	2	-	-	2	3	3	3
CO3	3	3	1	2	-	-	3	3	2	2
CO4	3	2	2	2	-	-	2	3	3	2
CO5	2	3	3	3	-	3	2	3	3	3
Average	2.8	2.8	2.2	2.4	-	3	2.4	3	2.8	2.4

OVER ALL AVERAGE BETWEEN COS & POS =2.22   OVER ALL AVERAGE BETWEEN COS & PSOS = 2.73

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S.NO	SEMES TER	COURSE CODE	COURSE TITLE	COURSE OUTCOMES (COs)		PROGRAM OUTCOMES(POs)	PROGRAM SPECIFIC OUTCOMES (PSOs)
1	**II**	**ENG2SK**	1101-2K	CO1	Apply grammatical rules and become proficient in the use of English	PO1, PO2, PO3, PO4,PO7	PSO1, PSO2, PSO3
				CO2	Outline and interpret the critical ideas, values and themes of different writers of different genres.	PO1, PO2, PO3, PO4,PO7	PSO1, PSO2, PSO3
				CO3	Gain articulating the right sounds and intonation of english	PO1, PO2, PO3, PO4,PO7	PSO1, PSO2, PSO3
				CO4	Demonstrate with the practical, emotional ,intellectual and creative aspects of language by integrating knowledge and skill.	PO1, PO2, PO3, PO4,PO7	PSO1, PSO2, PSO3
				CO5	Functions on understanding ideas for yourself, applying knowledge to new situations and using novel examples to explain a concept.	PO1, PO2, PO3, PO4, PO6, PO7	PSO1, PSO2, PSO3

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COURSE -I:

POs/ PSOs COs	Mapping(Cos & POs)							Mapping(Cos & PSOs)		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
CO1	3	3	3	3	-	-	3	3	3	2
CO2	3	3	2	2	-	-	2	3	3	3
CO3	3	3	1	2	-	-	3	3	2	2
CO4	3	2	2	2	-	-	2	3	3	2
CO5	2	3	3	3	-	3	2	3	3	3
Average	2.8	2.8	2.2	2.4	-	3	2.4	3	2.8	2.4

OVER ALL AVERAGE BETWEEN COS & POS =2.22   **OVER ALL AVERAGE BETWEEN COS & PSOS = 2.73**

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S.NO	SEMES TER	COURSE CODE	COURSE TITLE	COURSE OUTCOMES (COs)		PROGRAM OUTCOMES(POs)	PROGRAM SPECIFIC OUTCOMES (PSOs)
1	**III**	**ENG3S**	2101-3	CO1	Apply grammatical rules and become proficient in the use of English	PO1, PO2, PO3, PO4,PO7	PSO1, PSO2, PSO3
				CO2	Outline and interpret the critical ideas, values and themes of different writers of different genres.	PO1, PO2, PO3, PO4,PO7	PSO1, PSO2, PSO3
				CO3	Gain articulating the right sounds and intonation of english	PO1, PO2, PO3, PO4,PO7	PSO1, PSO2, PSO3
				CO4	Demonstrate with the practical, emotional ,intellectual and creative aspects of language by integrating knowledge and skill.	PO1, PO2, PO3, PO4,PO7	PSO1, PSO2, PSO3
				CO5	Functions on understanding ideas for yourself, applying knowledge to new situations and using novel examples to explain a concept.	PO1, PO2, PO3, PO4, PO6, PO7	PSO1, PSO2, PSO3

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COURSE -I:

POs/ PSOs COs	Mapping(Cos & POs)							Mapping(Cos & PSOs)		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
CO1	3	3	3	3	-	-	3	3	3	2
CO2	3	3	2	2	-	-	2	3	3	3
CO3	3	3	1	2	-	-	3	3	2	2
CO4	3	2	2	2	-	-	2	3	3	2
CO5	2	3	3	3	-	3	2	3	3	3
Average	2.8	2.8	2.2	2.4	-	3	2.4	3	2.8	2.4

OVER ALL AVERAGE BETWEEN COS & POS =2.22   OVER ALL AVERAGE BETWEEN COS & PSOS = 2.73

DEPARTMENT OF TELUGU

S. No.	Sem	Course Code	Course Title		Course Outcomes (COs)	Programne Outcomes (POs)	Programme Specific Outcomes (PSOs)
1	I	1103-1K	ప్రాచీన తెలుగు కవిత్వం	CO1	ప్రాచీన తెలుగు సాహిత్యం యొక్క ప్రాచీనతను, విశిష్టతను గుర్తిస్తారు. తెలుగు సాహిత్యంలో ఆదికవి నన్నయ కాలంనాటి భాషా సంస్కృతులను, ఇతిహాసకాలం నాటి రాజనీతి విషయాల పట్ల పరిజ్ఞానాన్ని సంపాదించగలరు.	PO1, PO2, PO3, PO5	PSO1, PSO2
				CO2	శివకవుల కాలంనాటి మతపరిస్థితులను, భాషా విశేషాలను గ్రహిస్తారు. తెలుగు నుడికారం, సామెతలు, లోకోక్తులు మొదలైన భాషాంశాల పట్ల పరిజ్ఞానాన్ని పొందగలరు.	PO1, PO2, PO3, PO5	PSO1, PSO2,
				CO3	తిక్కన భారతంనాటి మత, ధార్మిక పరిస్థితులను, తిక్కన కవితాశిల్పాన్ని, నాటకీయతను అవగాహన చేసుకోగలరు.	PO1, PO2, PO3, PO5, PO7	PSO1, PSO2, PSO3
				CO4	ఎఱ్ఱన సూక్తివైచిత్రిని, ఇతిహాస కవిత్వంలోని విభిన్న రీతులపట్ల అభిరుచిని పొందగలరు. శ్రీనాథుని కాలం నాటి కవితావిశేషాలను, మొల్ల కవితా విశిష్టతను గుర్తించగలరు.	PO1, PO2, PO3, PO5	PSO1, PSO2
				CO5	తెలుగు పద్యం స్వరూప స్వభావాలను, సాహిత్యాభిరుచిని పెంపొందించుకుంటారు. ప్రాచీన కావ్య భాషలోని వ్యాకరణాంశాలను అధ్యయనం చేయడం ద్వారా భాషా సామర్ధ్యాన్ని రచనల మెళకువలను గ్రహించగలరు.	PO1, PO2, PO3, PO6, PO7	PSO2, PSO3

2	II	1103-2k	ఆధునిక తెలుగు సాహిత్యం	CO1	ఆంగ్లభాష ప్రభావం కారణంగా తెలుగులో వచ్చిన ఆధునిక సాహిత్యాన్ని, దాని విశిష్టతను గుర్తిస్తారు.	PO1, PO2, PO3, PO4, PO6	PSO2
				CO2	సమకాలీన ఆధునిక సాహిత్య ప్రక్రియలైన వచన కవిత్వం, కథ, నవల, నాటకం, విమర్శలపై అవగాహన పొందుతారు.	PO1, PO2, PO3, PO7	PSO2, PSO3,
				CO3	భావకవిత, అభ్యుదయ కవితాలక్ష్యాలను గూర్చిన జ్ఞానాన్ని పొందుతారు. అస్తిత్వవాద ఉద్యమాలపుట్టుకను, ఆవశ్యకతను గుర్తిస్తారు.	PO1, PO3, PO5,	PSO1
				CO4	కథాసాహిత్యం ద్వారా సామాజిక చైతన్యాన్ని పొందుతారు. సిద్ధాంతాల ద్వారా కాకుండా, వాస్తవ పరిస్థితులను తెలుసుకోవడం ద్వారా సిద్ధాంతాన్ని సమీక్షించగలరు.	PO1, PO3, PO5	PSO1
				CO5	ఆధునిక తెలుగు కల్పనాసాహిత్యం ద్వారా సామాజిక, సాంస్కృతిక, రాజకీయ చైతన్యాన్ని పొందుతారు.	PO1, PO2, PO3	PSO2
3	III	2103-3k	సృజనాత్మక రచన	CO1	తెలుగు సాహిత్య అభ్యసన ద్వారా నేర్చుకున్న నైపుణ్యాలను, సృజనాత్మక నైపుణ్యాలుగా మార్చుకోగలరు.	PO1, PO2, PO3, PO5, PO7	PSO1, PSO2, PSO3
				CO2	విద్యార్థులు భాషాతత్వాన్ని, భాష యొక్క ఆవశ్యకతను, భాష యొక్క ప్రాధాన్యాన్ని గుర్తిస్తారు. మనిషి వ్యక్తిగత జీవనానికి, సామాజికవ్యవస్థ పటిష్ఠతకు భాష ప్రధానమని తెలుసుకుంటారు. తెలుగుభాషలోని కీలకాంశాలైన 'వర్ణం - పదం - వాక్యాల ప్రాధాన్యాన్ని గుర్తిస్తూ, వాగ్రూప- లిఖితరూప వ్యక్తీకరణ ద్వారా భాషానైపుణ్యాలను మెరుగుపరచుకోగలరు.	PO1, PO2, PO3, PO4, PO5, PO7	PSO1, PSO2, PSO3
				CO3	భాషానైపుణ్యాలను అలవరచుకోవడంతో పాటు వినియోగించడం నేర్చుకుంటారు. రచనా, భాషణానైపుణ్యాలను సృజనాత్మక రూపంలో వ్యక్తీకరించ గలరు.	PO1, PO2, PO3, PO7	PSO1, PSO2, PSO3
				CO4	ప్రాచీన పద్యరచనతో పాటు ఆధునిక కవిత, కథ, వ్యాసం,	PO1, PO2, PO3,	PSO1, PSO2, PSO3

				మొదలైన సాహిత్య ప్రక్రియల నిర్మాణాలకు సంబంధించిన సిద్ధాంత విషయాలను నేర్పడంతో పాటు వారిలో రచనా నైపుణ్యాలను పెంపొందించుకోగలరు.	PO7	
			CO5	సృజన రంగం, ప్రసారమధ్యమ రంగాల్లో ఉపాధి అవకాశాలను అందిపుచ్చుకోగలరు. అనువాద రంగంలో నైపుణ్యం సంపాదించగలరు.	PO2, PO3, PO4, PO6	PSO3

YEAR & SEMESTER : 1-I
Course Code : 1103-1K
Course Title : ప్రాచీన తెలుగు కవిత్వం

Mapping of Course Outcomes (COs) with POs& PSOs

COs	MAPPING(COs & POs)							MAPPING(COs & PSOs)		
	PO1 Essential Domain Knowledge	PO2 Creative and critical thinking and problem-solving abilities	PO3 Communication skills and Teamwork	PO4 Digital Capabilities	PO5 Social Responsibilities, Ethical and Environmental Competency	PO6 Employability and Research related Skills	PO7 Lifelong Learning	PSO1	PSO2	PSO3
CO1	3	3	3	-	3	-	-	3	3	-
CO2	3	3	3	-	3	-	-	3	2	-
CO3	2	3	2	-	2	-	3	3	2	3
CO4	2	2	2	-	3	-	-	2	2	-
CO5	3	2	2	-	-	2	3	-	3	2
Average	2.6	2.6	2.4	-	2.75	2	3	2.75	2.4	2.5

OVER ALL AVERAGE BETWEEN COS & POS = 2.56   OVER ALL ACERAGE BETWEEN COS &PSOS =2.55

YEAR & SEMESTER   : 1-II
Course Code   : 1103-2K
Course Title   : ఆధునిక తెలుగు సాహిత్యం

COs	MAPPING(COs & POs)							MAPPING(COs & PSOs)		
	PO1 **Essential Domain Knowledge**	PO2 **Creative and critical thinking and problem-solving abilities**	PO3 **Communication skills and Teamwork**	PO4 **Digital Capabilities**	PO5 **Social Responsibilities, Ethical and Environmental Competency**	PO6 **Employability and Research related Skills**	PO7 **Lifelong Learning**	PSO1	PSO2	PSO3
CO1	3	3	3	3	-	3	-	-	3	-
CO2	3	3	3	-	-	-	2	-	3	2
CO3	3	-	3	-	3	-	-	3	-	-
CO4	3	-	2	-	2	-	-	3	-	-
CO5	3	-	2	-	-	-	-	-	2	-
Average	3	3	2.6	3	2.5	3	2	3	2.67	2

OVER ALL AVERAGE BETWEEN COS & POS = 2.73   OVER ALL ACERAGE BETWEEN COS & PSOS =2.56

YEAR & SEMESTER   : 2-III
Course Code   :2103-3K
Course Title   : సృజనాత్మక రచన

COs	MAPPING(COs & POs)							MAPPING(COs & PSOs)		
	PO1 **Essential Domain Knowledge**	PO2 **Creative and critical thinking and problem-solving abilities**	PO3 **Communication skills and Teamwork**	PO4 **Digital Capabilities**	PO5 **Social Responsibilities, Ethical and Environmental Competency**	PO6 **Employability and Research related Skills**	PO7 **Lifelong Learning**	PSO1	PSO2	PSO3
CO1	3	3	3	-	3	-	3	3	3	2
CO2	3	3	3	3	3	-	2	2	3	3
CO3	3	3	2	-	-	-	3	3	3	3
CO4	3	3	3	-	-	-	2	2	2	2
CO5	-	2	2	3	-	3	-	-	-	2
Average	3	2.8	2.6	3	3	3	2.5	2.5	2.75	2.4

OVER ALL AVERAGE BETWEEN COS & POS = 2.84   OVER ALL ACERAGE BETWEEN COS & PSOS =2.47

COs	MAPPING(COs & POs)							MAPPING(COs & PSOs)		
	PO1 **Essential Domain Knowledge**	PO2 **Creative and critical thinking and problem-solving abilities**	PO3 **Communication skills and Teamwork**	PO4 **Digital Capabilities**	PO5 **Social Responsibilities, Ethical and Environmental Competency**	PO6 **Employability and Research related Skills**	PO7 **Lifelong Learning**	PSO1	PSO2	PSO3
COURSE-I	2.6	2.6	2.4	-	2.75	2	3	2.75	2.4	2.5
COURSE-II	3	3	2.6	3	2.5	3	2	3	2.67	2
COURSE-III	3	2.8	2.6	3	3	3	2.5	2.5	2.75	2.4
Average	2.87	2.8	2.53	3	2.75	2.67	2.5	2.75	2.61	2.3

OVERALL AVERAGE BETWEEN COs & POs=2.73   **OVERALL AVERAGE BETWEEN COs & PSOs=2.55**

Levels : = L1 – Remembering, 2= L2-Understanding & L3-Applying, 3 = L4-Analysing, L5- Evaluating & L6- Creating

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DEPARTMENT OF SANSKRIT

Course Outcomes(COs) with POs &PSOs

S.No	Semester	Course Code	Course Title	COs	POs	PSOs
1	I	1105-1	Poetry,Prose , Grammar Sanskrit-I	CO1: इतिहासस्य प्रसस्त्यम् जानन्ति । नित्य नूतन धर्मानुसरणन्ति। नैतिका मूल्यान् अधिगचन्ति।	PO1,PO2, PO4	PSO1,PSO2
				CO2: मानाव धर्मान्,सामाजिका परिणामान् अधिगचन्ति।	PO1,PO2, PO5	PSO1,PS02
				CO3: नीतिकथां द्वारा मानाव विचक्षणा ग्नानं अधिगम्यन्ते।	PO1,PO2, PO8	PSO1,PSO2,PSO8
				CO4: भाषा परिग्नानम् अधिगचन्ति।	PO1,PO2, PO3	PSO1,PSO2
				CO1: वामसगौरव रक्षणं,नायकत्वलक्षणं आध्यात्मिकमूल्यान् विद्यार्धिनाह अधिगम्यन्ते।	PO1,PO2, PO3,PO4	PSO2,PSO4

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2	II	1105-2	Poetry,Prose , Grammar Sanskrit-II	CO2: इथिहासानं प्रआसस्त्यं, युवकानं परिणामक्रमे व्यक्तितत्व विकासं विद्यार्थिनः अभिजानन्ति ।	PO1,PO8	PSO1,PSO2
				CO3: धर्मिक मूल्यान्, राजाधर्मान्, धात्रुत्व भवान् विद्यार्द्थिना अवलम्बन्ति ।	PO1,PO2	PSO3,PSO4
				CO4: भाषा परिग्नानं अभिजानन्ति ।	PO1,PO3	PSO1,PSO2
3	III	1105-3	Poetry,Prose , Grammar Sanskrit-III	CO1: नैतिका मूल्यान् ,धर्मीक चिन्तनं गणनं लभते । प्राचीन नाटका विषाये ग्नान सम्पादनं ।	PO1,PO2, PO7	PSO1,PSO8
				CO2: आत्मविश्वासं, व्याक्तिगतसमर्द्यं महत्वां ग्नायते	PO2,PO4, PO8,PO9	PSO2,PS04
				CO3: आत्मविश्वासं, व्याक्तिगतसमर्द्यं महत्वां ग्नायते	PO1,PO2	PSO2,PSO3
				CO4: सातिविका भावान् ग्नान सम्पादनं ।	PO1,PO2, PO8	PSO2,PSO3
				CO5: प्राचीन सास्त्रकारणं परिचयः ग्नायते	PO1,PO7	PSO1,PSO2

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SEMESTER-I:

COURSE-I:

POs/ PSOs COs	Mapping(Cos & POs)									Mapping(Cos & PSOs)			
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PSO1	PSO2	PSO3	PSO 4
CO1	3	3	-	2	-	-	-	-	-	3	3	3	3
CO2	3	3	-	-	3	-	-	-	-	2	3	-	3
CO3	2	2	-	-	-	-	-	3	-	3	3	2	3
CO4	2	2	3	-	-	-	-	-	-	-	3	3	3
Average	2.5	2.5	3	2	3	-	-	3	-	2.6	3	2.6	3

OVER ALL AVERAGE BETWEEN COS & POS =2.6

OVER ALL AVERAGE BETWEEN COS & PSOS = 2.8

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SEMESTER-II:

COURSE-II:

POs/ PSOs COs	Mapping(Cos & POs)									Mapping(Cos & PSOs)			
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PSO1	PSO2	PSO3	PSO 4
CO1	3	3	3	3	-	2	2	-	-	3	3	3	3
CO2	3	-	-	-	-	-	-	3	-	3	3	3	3
CO3	3	3	3	2	-	-	-	3	3	3	2	3	3
CO4	2	-	-	-	-	-	-	-	-	3	2	3	2
Average	2.75	3	2.5	2.5	-	2	2	3	3	3	2.5	3	2.75

OVER ALL AVERAGE BETWEEN COS & POS =2.6

OVER ALL AVERAGE BETWEEN COS & PSOS = 2.8

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SEMESTER-III:

COURSE-III:

POs/PSOs COs	Mapping(Cos & POs)									Mapping(Cos & PSOs)			
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PSO1	PSO2	PSO3	PSO4
CO1	3	3	-	-	-	-	3	-	-	3	3	3	3
CO2	-	3	-	3	-	-	-	3	3	3	2	3	3
CO3	3	3	-	-	-	-	-	-	-	3	-	3	3
CO4	3	3	-	-	-	-	-	2	-	3	-	2	-
CO5	3	-	-	-	-	-	2	-	-	3	2	-	-
Average	3	3	-	3	-	-	2.5	2.5	3	3	2.3	2.2	3

OVER ALL AVERAGE BETWEEN COS & POS =2.8

OVER ALL AVERAGE BETWEEN COS & PSOS = 2.6

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DEPARTMENT OF MATHEMATICS

Sl. No	Seme ster	Course Code	Course Title	Course Outcomes(Cos)		Program Outcomes (POs)	Program Specific Outcomes (PSOs)
1	I	UG-102	Differential Equations	CO1	Students can develop a solid understanding of the fundamental concepts of differential equations, including the definitions of differential equations, order, linearity, and solutions.	PO1, PO2, PO3, PO4, PO5, PO6, PO7.	PSO1, PSO2, PSO3.
				CO2	Students can be able to convert non exact homogeneous equations to exact differential equations by using integrating factors.	PO1, PO2, PO3, PO4, PO5, PO6, PO7.	PSO1, PSO2, PSO3.
				CO3	Students were capable to analyze the methods of finding solutions of differential equations of the first order but not of the first degree.	PO1, PO2, PO4, PO6, PO7.	PSO1, PSO2, PSO3.
				CO4	Students can solve higher-order linear differential equations, both homogeneous and non-homogeneous, with constant coefficients.	PO1, PO2, PO3, PO4, PO6.	PSO1, PSO2, PSO3.
				CO5	Students can understanding on the concepts and apply appropriate methods for solving differential equations.	PO1, PO2, PO3, PO4, PO5, PO6, PO7.	PSO1, PSO2, PSO3.
2	II	UG-102	Three Dimensional Analytical Solid Geometry	CO1	Students can be able to understand and analyze the concepts on planes.	PO1, PO2, PO3, PO4, PO7.	PSO1, PSO2, PSO3
				CO2	Students may be able to understand and analyze the concepts on lines.	PO1, PO2, PO4, PO6, PO7.	PSO1, PSO2, PSO3.
				CO3	Students may be able to understand and analyze the concepts on sphere and cone	PO1, PO2, PO3, PO4, PO7.	PSO1, PSO2, PSO3.

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				CO4	Students can be able to understand and analyze the properties of planes, lines, spheres and cones.	PO1, PO2, PO3, PO4, PO5, PO6.	PSO1, PSO2, PSO3.
				CO5	Students can be able to analyze the concepts and express the problems geometrically and then to get the solution	PO1, PO2, PO3, PO6, PO7.	PSO1, PSO2, PSO3.
3	**III**	UG-102	Abstract algebra	CO1	Students can able to Basic concepts from abstract algebra, especially the notion of a group.Acquire the basic knowledge and structure of groups, subgroups and cyclic groups.	PO1, PO2, PO3, PO4. PO7.	PSO1, PSO2, PSO3.
				CO2	Students can Get the significance of the notation of normal subgroups. Get the behaviour of permutations and operations on them.	PO1, PO2, PO3, PO4, PO7.	PSO1, PSO2, PSO3.
				CO3	Students can Study the homomorphisms and isomorphisms with applications.	PO1, PO2, PO3, PO4, PO6, PO7.	PSO1, PSO2, PSO3.
				CO4	Students can able to Understand the Group theory and to prove the theorems.	PO1, PO2, PO3, PO5, PO6, PO7.	PSO1, PSO2, PSO3.
				CO5	Students can able to Understand the applications of Numerical Analysis in various fields.	PO1, PO2, PO3, PO4,PO7.	PSO1, PSO2, PSO3.
4	**IV**	UG-102	Real Analysis	CO1	Students can Get a clear idea about the real numbers and real valued functions.	PO1, PO2, PO3, PO4, PO6, PO7.	PSO1, PSO2, PSO3..
				CO2	Students may Obtain the skills of analyzing the concepts and applying appropriate methods for testing convergence of a sequence or series.	PO1, PO2, PO3, PO4, PO5, PO6, PO7.	PSO1, PSO2, PSO3.
				CO3	Students may able to Test the continuity and differentiability of the function	PO1, PO2, PO4, PO5, PO6, PO7.	PSO1, PSO2, PSO3.
				CO4	Students can able to Test the Riemann integration of a function.	PO1, PO2, PO3, PO4, PO5, PO6, PO7.	PSO1, PSO2, PSO3.
				CO5	Students can learn and Know the geometrical interpretation of mean value theorems.	PO1, PO2, PO3, PO4, PO6.	PSO1, PSO2, PSO3.

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5	V	UG-102	Linear Algebra	CO1	Students must understand the concepts of vector spaces, subspaces, basises, dimension and their properties	PO1, PO2, PO3, PO4, PO5, PO6, PO7.	PSO1, PSO2, PSO3.
				CO2	Students must understand the concepts of linear transformations and their properties	PO1, PO2, PO3, PO4, PO6, PO7.	PSO1, PSO2, PSO3.
				CO3	Students must understand the concepts of Characteristic equations, Characteristic Values & Vectors of square matrix and their properties	PO1, PO2, PO3, PO4, PO5,PO6, PO7.	PSO1, PSO2, PSO3.
				CO4	Students must analyze and apply Cayley- Hamilton theorem to problems for finding the inverse of a matrix and higher powers of matrices without using routine methods	PO1, PO2, PO3, PO4, PO5, PO6, PO7.	PSO1, PSO2, PSO3
				CO5	Students must analyze and apply tensor analysis in some of the physics Related Formulas	PO1, PO2, PO3, PO4, PO5, PO6.	PSO1, PSO2, PSO3.
6	VI	UG-102	Numerical Methods	CO1	Students can able to Understand the subject of various numerical methods that are used to obtain approximate solutions	PO1, PO2, PO3, PO4, PO5.	PSO1, PSO2, PSO3.
				CO2	Students can able to learn various finite difference concepts and interpolation methods.	PO1, PO2, PO3, PO4, PO5, PO6, PO7.	PSO1, PSO2, PSO3.
				CO3	Students can able to analyze and Work out numerical differentiation and integration whenever and wherever routine methods are not applicable.	PO1, PO2, PO3, PO5, PO6.	PSO1, PSO2, PSO3.
				CO4	Students can able to Find numerical solutions of ordinary differential equations by using various numerical methods.	PO1, PO2, PO3, PO4, PO5, PO7.	PSO1, PSO2, PSO3.
				CO5	Students can able to Analyze and evaluate the accuracy of numerical methods	PO1, PO2, PO3, PO4, PO7.	PSO1, PSO2, PSO3.
7	VII	UG-102	Special Functions	CO1	Students must understand the Beta and Gamma functions, their properties and relation between these two functions, understand the	PO1, PO2, PO3, PO4, PO5, PO6,	PSO1, PSO2, PSO3.

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					orthogonal properties of Chebyshev polynomials and recurrence relations.	PO7.	
				CO2	Students must find power series solutions of ordinary differential equations.	PO1, PO2, PO3, PO4, PO5.	PSO1, PSO2, PSO3.
				CO3	Students must be able to solve Hermite equations and write the Hermite Polynomial of order (degree) n, also find the generating function for Hermite Polynomials, study the orthogonal properties of Hermite Polynomials and recurrence relations	PO1,PO2,PO5, PO6,PO7.	PSO1, PSO2, PSO3.
				CO4	Students must be able to solve Legendre equation and write the Legendre equation of the first kind, also find the generating function for the Legendre polynomial, Understand the orthogonal properties of Legendre polynomials	PO1, PO2,PO4, PO5, PO6,PO7.	PSO1, PSO2, PSO3
				CO5	Students must be able to solve Bessel equation and write the Bessel equation of the first kind of order n, also find the generating function for Bessel function and understand the orthogonal properties of Bessel equation.	PO1, PO2, PO3, PO4, PO5, PO6, PO7.	PSO1, PSO2, PSO3..
8	VIII	UG-102	PROJECT	CO1	Analyze and interpret and take appropriate decisions in solving real life problems using statistical tools.	PO1, PO2, PO3, PO4, PO5,PO6, PO7.	PSO1, PSO2, PSO3.
				CO2	Use different Statistical packages for graphical interface, data analysis and interpretation	PO1, PO2, PO3, PO4, PO5,PO6, PO7.	PSO1, PSO2, PSO3.
				CO3	Write a systematic Statistical project report.	PO1, PO2, PO3, PO4, PO5,PO6, PO7.	PSO1, PSO2, PSO3.

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I YEAR – B.Sc – I SEMESTER – PAPER – I

		MAPPING(COs & POs)							MAPPING(COs & PSOs)		
		PO1 Essential Domain Knowledge	PO2 Creative and critical thinking and problem solving abilities	PO3 Communication Skills and Team Work	PO4 Digital Capabilities	PO5 Social Responsibilities, Ethical and Environmental Competency	PO6 Employability and Research related Skills	PO7 Life-Long Learning	PSO1	PSO2	PSO3
CO1		3	2	2	3	2	3	3	3	2	2
CO2		2	3	3	3	2	3	3	2	2	3
CO3		3	2	3	3	2	2	3	2	2	3
CO4		2	2	3	2	-	3	3	3	3	2
CO5		3	3	3	3	-	2	3	3	2	3
Ave Rage		2.6	2.4	2.8	2.8	1.2	2.6	3	2.6	2.2	2.6

OVER ALL AVERAGE BETWEEN COS & POS = 2.48OVER ALL AVERAGE BETWEEN COS & PSOS = 2.46 Levels :

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I YEAR – B.Sc – I SEMESTER – PAPER – II

	MAPPING(COs & POs)							MAPPING(COs & PSOs)		
	PO1 Essential Domain Knowledge	PO2 Creative and critical thinking and problem solving abilities	PO3 Communication Skills and Team Work	PO4 Digital Capabilities	PO5 Social Responsibilities, Ethical and Environmental Competency	PO6 Employability and Research related Skills	PO7 Life-Long Learning	PSO1	PSO2	PSO3
CO1	3	2	3	2	2	-	3	3	2	3
CO2	2	3	2	2	3	-	2	2	3	3
CO3	3	3	3	3	2	2	3	2	2	3
CO4	2	3	2	3	-	2	3	3	3	2
CO5	3	3	2	2	-	3	3	3	3	3
Ave Rage	2.6	2.8	2.4	2.4	1.4	1.4	2.8	2.6	2.6	2.8

OVER ALL AVERAGE BETWEEN COS & POS = 2.25OVER ALL AVERAGE BETWEEN COS & PSOS = 2.66 Levels :

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II YEAR – B.Sc – III SEMESTER – PAPER – III

		MAPPING(COs & POs)							MAPPING(COs & PSOs)		
		PO1 Essential Domain Knowledge	PO2 Creative and critical thinking and problem solving abilities	PO3 Communication Skills and Team Work	PO4 Digital Capabilities	PO5 Social Responsibilities, Ethical and Environmental Competency	PO6 Employability and Research related Skills	PO7 Life-Long Learning	PSO1	PSO2	PSO3
CO1		3	2	3	2	2	3	3	3	3	3
CO2		2	2	3	2	2	2	3	3	2	2
CO3		3	3	3	3	3	3	3	2	2	3
CO4		2	2	3	3	3	2	3	2	2	2
CO5		2	2	3	3	2	2	3	3	3	3
Ave Rage		2.8	2.2	3	2.6	2.4	2.4	3	2.6	2.4	2.6

OVER ALL AVERAGE BETWEEN COS & POS = 2.62OVER ALL AVERAGE BETWEEN COS & PSOS = 2.53 Levels :

II YEAR – B.Sc – IV SEMESTER – PAPER – IV

| | MAPPING(COs & POs) | | | | | | | MAPPING(COs & PSOs) | | |
	PO1 Essential Domain Knowledge	PO2 Creative and critical thinking and problem solving abilities	PO3 Communication Skills and Team Work	PO4 Digital Capabilities	PO5 Social Responsibilities, Ethical and Environmental Competency	PO6 Employability and Research related Skills	PO7 Life-Long Learning	PSO1	PSO2	PSO3
CO1	3	2	2	2	2	-	3	3	3	3
CO2	2	3	3	3	-	-	2	3	3	3
CO3	3	3	3	3	-	2	2	2	2	2
CO4	2	2	3	3	2	3	3	3	2	2
CO5	3	3	3	3	3	3	3	2	2	3
Ave Rage	2.6	2.6	2.8	2.8	1.4	1.6	2.6	2.4	2.4	2.6

OVER ALL AVERAGE BETWEEN COS & POS = 2.34OVER ALL AVERAGE BETWEEN COS & PSOS = 2.46 Levels :

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II YEAR – B.Sc – IV SEMESTER – PAPER – V

		MAPPING(COs & POs)							MAPPING(COs & PSOs)		
	PO1 Essential Domain Knowledge	PO2 Creative and critical thinking and problem solving abilities	PO3 Communication Skills and Team Work	PO4 Digital Capabilities	PO5 Social Responsibilities, Ethical and Environmental Competency	PO6 Employability and Research related Skills	PO7 Life-Long Learning	PSO1	PSO2	PSO3
CO1	3	2	3	2	2	3	3	2	2	2
CO2	2	3	3	3	2	2	3	3	2	3
CO3	3	2	2	2	3	3	3	2	2	3
CO4	3	3	3	3	2	3	3	3	2	2
CO5	2	2	3	3	3	3	3	2	3	3
Ave Rage	2.6	2.4	2.8	2.6	2.4	2.8	3	2.4	2.2	2.6

OVER ALL AVERAGE BETWEEN COS & POS = 2.65OVER ALL AVERAGE BETWEEN COS & PSOS = 2.4

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III YEAR – B.Sc – V SEMESTER – PAPER – VI-A

	MAPPING(COs & POs)							MAPPING(COs & PSOs)		
	PO1 Essential Domain Knowledge	PO2 Creative and critical thinking and problem solving abilities	PO3 Communication Skills and Team Work	PO4 Digital Capabilities	PO5 Social Responsibilities, Ethical and Environmental Competency	PO6 Employability and Research related Skills	PO7 Life-Long Learning	PSO1	PSO2	PSO3
CO1	3	3	3	2	2	3	3	3	3	3
CO2	2	3	3	3	3	2	3	3	2	2
CO3	2	2	3	3	2	3	2	3	2	3
CO4	2	2	3	3	-	2	3	3	3	2
CO5	2	2	3	3	-	3	2	2	3	3
Ave Rage	2.2	2.2	3	2.8	1.4	2.6	2.6	2.8	2.6	2.6

OVER ALL AVERAGE BETWEEN COS & POS = 2.4OVER ALL AVERAGE BETWEEN COS & PSOS = 2.66 Levels : 1

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III YEAR – B.Sc – V SEMESTER – PAPER – VII-A

	MAPPING(COs & POs)							MAPPING(COs & PSOs)		
	PO1 Essential Domain Knowledge	PO2 Creative and critical thinking and problem solving abilities	PO3 Communication Skills and Team Work	PO4 Digital Capabilities	PO5 Social Responsibilities, Ethical and Environmental Competency	PO6 Employability and Research related Skills	PO7 Life-Long Learning	PSO1	PSO2	PSO3
CO1	3	2	3	2	2	-	3	3	3	3
CO2	2	2	3	3	2	-	3	3	2	3
CO3	3	3	2	2	3	2	3	2	2	3
CO4	3	2	3	3	-	3	3	3	2	2
CO5	3	2	3	2	-	3	3	3	3	3
Ave Rage	2.8	2.2	2.8	2.4	1.4	1.6	3	2.8	2.4	2.8

OVER ALL AVERAGE BETWEEN COS & POS = 2.31OVER ALL AVERAGE BETWEEN COS & PSOS = 2.66 Levels :

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III YEAR – B.Sc – VISEMESTER –PAPER- VIII- PROJECT

	MAPPING(COs & PSOs)									
	PO1 **Essential Domain Knowledge**	PO2 **Creative and critical thinking and problem solving abilities**	PO3 **Communication Skills and Team Work**	PO4 **Digital Capabilities**	PO5 **Social Responsibilities, Ethical and Environmental Competency**	PO6 **Employability and Research related Skills**	PO7 **Life-Long Learning**	PSO1	PSO2	PSO3
CO1	3	3	2	2	2	3	3	3	2	3
CO2	3	3	3	2	2	3	3	3	2	3
CO3	3	2	3	3	2	3	3	3	3	2
Ave Rage	3	3	2.6	2.3	2	3	3	3	2.3	2.6

OVER ALL AVERAGE BETWEEN COS & POS = 2.7 OVER ALL AVERAGE BETWEEN COS & PSOS = 2.67

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IIIYEAR – B.Sc –MATHEMATICS- THEORY

COs	MAPPING (COs & POs)							MAPPING (COs & PSOs)		
	PO1 Essential Domain Knowledge	PO2 Creative and critical thinking and problem solving abilities	PO3 Communication Skills and Team Work	PO4 Digital Capabilities	PO5 Social Responsibilities, Ethical and Environmental Competency	PO6 Employability and Research related Skills	PO7 Life-Long Learning	PSO1	PSO2	PSO3
PAPER -I	2.6	2.4	2.8	2.8	1.2	2.6	3	2.6	2.2	2.6
PAPER -II	2.6	2.8	2.4	2.4	1.4	1.4	2.8	2.6	2.6	2.8
PAPER -III	2.8	2.2	3	2.6	2.4	2.4	3	2.6	2.4	2.6
PAPER -IV	2.6	2.6	2.8	2.8	1.4	1.6	2.6	2.4	2.4	2.6
PAPER -V	2.6	2.4	2.8	2.6	2.4	2.8	3	2.4	2.2	2.6
PAPER -VI	2.2	2.2	3	2.8	1.4	2.6	2.6	2.8	2.6	2.6
PAPER -VII	2.8	2.2	2.8	2.4	1.4	1.6	3	2.8	2.4	2.8
PAPER -VIII	3	3	2.6	2.3	2	3	3	3	2.3	2.6
Average	**2.65**	**2.47**	**2.77**	**2.58**	**1.7**	**2.25**	**2.87**	**2.65**	**2.38**	**2.65**

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DEPARTMENT OF PHYSICS

SUBJECT NAME : Mechanics, waves and oscillations
Course-I, Semester -I
Course Outcomes: Upon the completion of the course, the student will be able to,

S. No	SEMESTER	COURSE CODE	COURSE TITLE		COURSE OUTCOMES (COs)	PROGRAM OUTCOMES	PROGRAM SPECIFIC OUTCOMES
1	**I**	**PHY1SK**	Mechanics, waves and oscillations	CO1	Explain Newton's laws of motion and motion of variable mass system and its application to rocket motion and the concepts of impact parameter, scattering cross section.	PO1, PO2, PO3, PO4,PO7	PSO1, PSO2, PSO3
				CO2	Apply the rotational kinematic relations, the principle and working of gyroscope and it applications and the precessional motion of a freely rotating symmetric top.	PO1, PO2, PO3, PO4,PO7	PSO1, PSO2, PSO3
				CO3	Interpret the general characteristics of central forces and the application of Kepler's laws to describe the motion of planets and satellite in circular orbit through the study of law of Gravitation.	PO1, PO2, PO3, PO4,PO7	PSO1, PSO2, PSO3
				CO4	Examine phenomena of simple harmonic motion and the distinction between un damped, damped and forced oscillations and the concepts of resonance and quality factor with reference to damped harmonic oscillator.	PO1, PO2, PO3, PO4,PO7	PSO1, PSO2, PSO3
				CO5	Discuss the coupled oscillations and solve them to obtain normal modes of oscillation and their frequencies in simple mechanical systems.Acquire the knowledge on Ultrasonic waves, their production and detection and their applications in different fields.	PO1, PO2, PO3, PO4, PO6, PO7	PSO1, PSO2, PSO3

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2	I	PHY1SK	Mechanics, Waves and Oscillations (Lab)	CO1	Outline the operations of basic measuring instruments.	PO1, PO2, PO3, PO4,PO6,PO7	PSO1, PSO2, PSO3
				CO2	Measure viscosity of liquid by the flow method and surface tension by capillary rise method.	PO1, PO2, PO3, PO4,PO6,PO7	PSO1, PSO2, PSO3
				CO3	Apply the knowledge of Elastic constants to measure young's modulus of material of a rod by uniform bending methods.	PO1, PO2, PO3, PO4,PO6,PO7	PSO1, PSO2, PSO3
				CO4	Verify the concept of acceleration due to gravity using simple pendulum by method of errors.	PO1, PO2, PO3, PO4,PO6,PO7	PSO1, PSO2, PSO3
				CO5	Determine the rigidity modulus of material of a wire using torsional pendulum	PO1, PO2, PO3, PO4,PO6,PO7	PSO1, PSO2, PSO3

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COURSE -I: (Theory)

POs/ PSOs COs	Mapping(Cos & POs)							Mapping(Cos & PSOs)		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
CO1	3	3	3	3	-	-	3	3	3	2
CO2	3	3	2	2	-	-	2	3	3	3
CO3	3	3	1	2	-	-	3	3	2	2
CO4	3	2	2	2	-	-	2	3	3	2
CO5	2	3	3	3	-	3	2	3	3	3
Average	2.8	2.8	2.2	2.4	-	3	2.4	3	2.8	2.4

OVER ALL AVERAGE BETWEEN COS & POS =2.22   **OVER ALL AVERAGE BETWEEN COS & PSOS = 2.7**

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COURSE -I: (Lab)

POs/PSOs COs	Mapping(Cos & POs)							Mapping(Cos & PSOs)		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
CO1	3	3	3	-	2	-	1	3	3	2
CO2	3	2	3	-	3	-	2	3	2	3
CO3	3	3	2	-	2	-	3	2	3	3
CO4	3	3	3	-	3	-	2	2	3	3
CO5	2	2	2	-	2	-	3	2	3	3
Average	2.8	2.6	2.6	-	2.4	-	2.2	2.4	2.8	2.8

OVER ALL AVERAGE BETWEEN COS & POS =2.52   OVER ALL AVERAGE BETWEEN COS & PSOS = 2.66

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Course -II, Semester -II

Course Outcomes: Upon the completion of the course, the student will be able to,

SUBJECT NAME : Wave Optics

3	II	**PHY2SK**	Wave Optics	CO1	Explain the phenomenon of interference of light and its formation in (i) Lloyd's single mirror due to division of wave front and (ii) Thin films, Newton's rings and Michelson interferometer due to division of amplitude.	PO1, PO2, PO3, PO4,PO7	PSO1, PSO2, PSO3
				CO2	Distinguish between Fresnel's diffraction and Fraunhoffer diffraction and observe the diffraction patterns in the case of single slit and the diffraction grating.	PO1, PO2, PO3, PO4,PO6,PO7	PSO1, PSO2, PSO3
				CO3	Describe the construction and working of zone plate and make the comparison of zone plate with convex lens.	PO1, PO2, PO3, PO4,PO7	PSO1, PSO2, PSO3
				CO4	Explain the various methods of production of plane, circularly and polarized light and their detection and the concept of optical activity.	PO1, PO2, PO3, PO4,PO7	PSO1, PSO2, PSO3

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				CO5	Comprehend the basic principle of laser, the working of He-Ne laser and Ruby lasers and their applications in different fields.	PO1, PO2, PO3, PO4,PO5, PO6,PO7	PSO1, PSO2, PSO3
				CO6	Explain about the different aberrations in lenses and discuss the methods of minimizing them.	PO1, PO2, PO3, PO4,PO7	PSO1, PSO2, PSO3
4	II	PHY2SK	Wave Optics (Lab)	CO1	Gain hands-on experience of using various optical instruments like spectrometer, polarimeter and making finer measurements of wavelength of light using Newton Rings experiment, diffraction grating etc.	PO1, PO2, PO3, PO4,PO6,PO7	PSO1, PSO2, PSO3
				CO2	Know the techniques involved in measuring the resolving power of telescope and dispersive power of the material of the prism.	PO1, PO2, PO3, PO4,PO6,PO7	PSO1, PSO2, PSO3
				CO3	Be familiar with the determination of refractive index of liquid by Boy's method and the determination of thickness of a thin wire by wedge method.	PO1, PO2, PO3, PO4,PO6,PO7	PSO1, PSO2, PSO3
				CO4	Determine the wavelength of diffraction grating-Minimum deviation method	PO1, PO2, PO3, PO4,PO6,PO7	PSO1, PSO2, PSO3

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COURSE -II: (Theory)

POs/ PSOs COs	Mapping(Cos & POs)							Mapping(Cos & PSOs)		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
CO1	3	3	3	3	-	-	2	3	3	2
CO2	3	2	3	2	-	-	1	3	3	3
CO3	3	3	1	3	-	-	3	3	2	2
CO4	3	2	2	3	-	-	2	3	3	2
CO5	2	3	3	1	3	3	2	3	3	2
CO6	3	3	2	2	-	-	3	3	3	3
Average	2.8	2.6	2.3	2.3	3	3	2.1	3	2.8	2.3

OVER ALL AVERAGE BETWEEN COS & POS =2.58   OVER ALL AVERAGE BETWEEN COS & PSOS = 2.7

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COURSE -II: (Lab)

POs/ PSOs COs	Mapping(Cos & POs)							Mapping(Cos & PSOs)		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
CO1	3	3	3	2	-	3	1	3	3	2
CO2	3	2	3	2	-	2	2	3	2	3
CO3	3	3	2	2	-	3	3	2	3	3
CO4	3	3	3	3	-	3	2	2	3	3
Average	3	2.7	2.7	2.2	-	2.7	2	2.5	2.7	2.7

OVER ALL AVERAGE BETWEEN COS & POS =2.55   OVER ALL AVERAGE BETWEEN COS & PSOS = 2.63

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SUBJECT NAME : Heat and Thermodynamics
Course -III, Semester -III
Course Outcomes: Upon the completion of the course, the student will be able to,

5	III	PHY3SK	Heat and Thermodynamics	CO1	Explain the basic aspects of kinetic theory of gases, Maxwell-Boltzmann distribution law, equipartition of energies, mean free path of molecular collisions and the transport phenomenon in ideal gases	PO1, PO2, PO3, PO4,PO7	PSO1, PSO2, PSO3
				CO2	Describe on the basic concepts of thermodynamics, the first and the second law of thermodynamics, the basic principles of refrigeration, the concept of entropy, the thermodynamic potentials and their physical interpretations.	PO1, PO2, PO3, PO4, PO5, PO7	PSO1, PSO2, PSO3
				CO3	Explain the working of Carnot's ideal heat engine, Carnot cycle and its efficiency	PO1, PO2, PO3, PO4,PO7	PSO1, PSO2, PSO3
				CO4	Develop critical understanding of concept of Thermodynamic potentials, the formulation of Maxwell's equations and its applications.	PO1, PO2, PO3, PO4,PO7	PSO1, PSO2, PSO3
				CO5	Differentiate between principles and methods to produce low temperature and liquefy air and also understand the practical applications of substances at low temperatures.	PO1, PO2, PO3, PO4, PO6, PO7	PSO1, PSO2, PSO3
				CO6	Examine the nature of black body radiations and the basic theories.	PO1, PO2, PO3, PO4,PO7	PSO1, PSO2, PSO3

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6	III	PHY3SK	Heat and Thermodynamics (Lab)	CO1	Determination of Stefan's constant	PO1, PO2, PO3, PO4,PO6,PO7	PSO1, PSO2, PSO3
				CO2	Determination of coefficient of thermal conductivity	PO1, PO2, PO3, PO4,PO6,PO7	PSO1, PSO2, PSO3
				CO3	Variation of thermo-emf of a thermocouple with temperature difference at its two junctions	PO1, PO2, PO3, PO4,PO6,PO7	PSO1, PSO2, PSO3
				CO4	Calibration of a thermocouple and Specific heat of a liquid.	PO1, PO2, PO3, PO4,PO6,PO7	PSO1, PSO2, PSO3

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COURSE -III: (Theory)

POs/ PSOs COs	Mapping(Cos & POs)							Mapping(Cos & PSOs)		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
CO1	3	3	2	3	-	-	3	3	3	3
CO2	3	2	3	2	3	-	2	3	3	2
CO3	3	3	3	2	-	-	3	3	2	3
CO4	3	2	3	3	-	-	2	3	3	2
CO5	2	3	3	3	-	3	2	3	3	2
CO6	3	3	3	2	-	-	3	3	3	3
Average	3	2.6	2.8	2.5	3	3	2.5	3	2.8	2.5

OVER ALL AVERAGE BETWEEN COS & POS =2.77   **OVER ALL AVERAGE BETWEEN COS & PSOS = 2.76**

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COURSE -III: (Lab)

POs/ PSOs COs	Mapping(Cos & POs)							Mapping(Cos & PSOs)		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
CO1	3	3	3	2	-	3	1	3	3	3
CO2	3	2	3	3	-	3	2	3	2	3
CO3	3	3	2	3	-	3	3	2	3	2
CO4	3	3	3	2	-	3	2	3	3	3
Average	3	2.7	2.7	2.5	-	3	2	2.75	2.75	2.75

OVER ALL AVERAGE BETWEEN COS & POS =2.65   **OVER ALL AVERAGE BETWEEN COS & PSOS = 2.75**

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7	IV	**PHY4SKA**	Electricity, Magnetism & Electronics	CO1	Apply Gauss's law to get relations connecting dielectric parameters and their applications.	PO1, PO2, PO3, PO4,PO7	PSO1, PSO2, PSO3
				CO2	Derive expressions for the magnetic field at a point due to current carrying conductors using Biot- Savart Law.	PO1, PO2, PO3, PO4,PO7	PSO1, PSO2, PSO3
				CO3	Distinguish self and mutual inductance phenomena and their real -time applications	PO1, PO2, PO3, PO4, PO6,PO7	PSO1, PSO2, PSO3
				CO4	Compute Maxwell's electromagnetic wave equations and their role in communications	PO1, PO2, PO3, PO4,PO7	PSO1, PSO2, PSO3
				CO5	Summarize the basic concepts of semiconductors and digital electronics and their applications	PO1, PO2, PO3, PO4,PO5, PO6, PO7	PSO1, PSO2, PSO3
8	IV	**PHY4SKA**	Electricity, Magnetism & Electronics (Lab)	CO1	Describe the resonance condition in LCR series and parallel circuits.	PO1, PO2, PO3, PO4,PO6,PO7	PSO1, PSO2, PSO3
				CO2	Study the variation of magnetic field along the axis of a circular coil carrying current using Stewart and Gee's apparatus.	PO1, PO2, PO3, PO4,PO6,PO7	PSO1, PSO2, PSO3

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				CO3	Summarize the operation of PN junction diode, Zener diode and a transistor and their V -I characteristics.	PO1, PO2, PO3, PO4,PO6,PO7	PSO1, PSO2, PSO3
				CO4	Verify De Morgan's Theorems, Half and Full Adders.	PO1, PO2, PO3, PO4,PO6,PO7	PSO1, PSO2, PSO3
				CO5	Summarize the basic concepts of semiconductors, and digital electronics and their applications	PO1, PO2, PO3, PO4,PO6,PO7	PSO1, PSO2, PSO3

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COURSE -IV: (Theory)

POs/ PSOs COs	Mapping(Cos & POs)							Mapping(Cos & PSOs)		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
CO1	3	3	2	3	-	-	2	3	2	3
CO2	3	3	2	3	-	-	2	3	2	3
CO3	3	3	2	2	-	3	2	3	2	3
CO4	3	3	3	2	-	-	3	3	3	3
CO5	3	3	3	3	3	3	3	3	3	1
Average	3	3	2.4	2.6	3	3	2.4	3	2.4	2.6

OVER ALL AVERAGE BETWEEN COS & POS =2.77   OVER ALL AVERAGE BETWEEN COS & PSOS = 2.66

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COURSE -IV: (Lab)

POs/ PSOs COs	Mapping(Cos & POs)							Mapping(Cos & PSOs)		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
CO1	3	3	3	3	-	3	1	3	3	2
CO2	3	2	3	3	-	2	2	3	2	3
CO3	3	3	2	2	-	3	3	2	3	3
CO4	3	3	3	2	-	3	2	2	3	3
CO5	2	2	2	3	-	3	3	2	3	3
Average	2.8	2.6	2.6	2.6	-	2.8	2.2	2.4	2.8	2.8

OVER ALL AVERAGE BETWEEN COS & POS =2.6   OVER ALL AVERAGE BETWEEN COS & PSOS = 2.66

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COURSE NAME : Modern physics
Course -V, Semester -IV
Course Outcomes: Upon the completion of the course, the student will be able to,

9	IV	**PHY4SKB**	Modern physics	CO1	Develop an understanding on the concepts of Atomic and Modern Physics, basicelementary quantum mechanics and nuclear physics.	PO1, PO2, PO3, PO4,PO7	PSO1, PSO2, PSO3
				CO2	Develop critical understanding of concept of Matter waves and Uncertainty principle	PO1, PO2, PO3, PO4,PO7	PSO1, PSO2, PSO3
				CO3	Get familiarized with the principles of quantum mechanics and the formulation ofSchrodinger wave equation and its applications & Examine the basic properties of nuclei, characteristics of Nuclear forces, salientfeatures of Nuclear models and different nuclear radiation detectors.	PO1, PO2, PO3, PO4,PO5, PO6,PO7	PSO1, PSO2, PSO3
				CO4	Classify Elementary particles based on their mass, charge, spin, half life and interaction.	PO1, PO2, PO3, PO4,PO7	PSO1, PSO2, PSO3
				CO5	Get familiarized with the nano materials, their unique properties and applications.	PO1, PO2, PO3, PO4,PO7	PSO1, PSO2, PSO3
				CO6	Increase the awareness and appreciation of superconductors and their practicalapplications	PO1, PO2, PO3, PO4,PO6, PO7	PSO1, PSO2, PSO3
10	IV	**PHY4SKB**	Modern physics	CO1	Determine Planck's constant from photocell characteristics.	PO1, PO2, PO3, PO4,PO6,PO7	PSO1, PSO2, PSO3

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			(Lab)				
				CO2	Verify inverse square law of light using photovoltaic cell	PO1, PO2, PO3, PO4,PO6,PO7	PSO1, PSO2, PSO3
				CO3	Determine energy gap of a semiconductor using junction diode.	PO1, PO2, PO3, PO4,PO6,PO7	PSO1, PSO2, PSO3
				CO4	Determine energy gap of a semiconductor using thermistor.	PO1, PO2, PO3, PO4,PO6,PO7	PSO1, PSO2, PSO3
				CO5	Measure charge of an electron and e/m value of an electron by Thomson method.	PO1, PO2, PO3, PO4,PO6,PO7	PSO1, PSO2, PSO3

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COURSE-V: (Theory)

POs/ PSOs COs	Mapping(Cos & POs)							Mapping(Cos &PSOs)		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
CO1	3	3	3	3	-	-	2	3	2	3
CO2	3	3	2	3	-	-	2	3	2	3
CO3	3	3	2	2	3	3	2	3	2	3
CO4	3	3	3	2	-	-	3	3	3	3
CO5	3	3	3	3	-	-	3	3	3	1
CO6	3	2	2	3		3	3	3	3	2
Average	3	2.8	2.5	2.6	3	3	2.5	3	2.5	2.5

OVER ALL AVERAGE BETWEEN COS & POS =2.77   **OVER ALL AVERAGE BETWEEN COS & PSOS = 2.66**

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COURSE-V: (Lab)

POs/ PSOs COs	Mapping(Cos & POs)							Mapping(Cos & PSOs)		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
CO1	3	3	3	2	-	3	2	3	3	2
CO2	3	2	3	1	-	2	2	3	2	3
CO3	3	3	2	2	-	2	3	2	3	3
CO4	3	3	3	2	-	3	2	2	3	3
CO5	2	2	1	3	-	1	3	2	3	3
Average	2.8	2.6	2.4	2	-	2.2	2.4	2.4	2.8	2.8

OVER ALL AVERAGE BETWEEN COS & POS =2.4   **OVER ALL AVERAGE BETWEEN COS & PSOS = 2.66**

11	V	**PHY5SKC**	Low Temperature	CO1	Identify various methods and techniques used to produce low temperatures in the Laboratory.	PO1, PO2, PO3, PO4,PO7	PSO1, PSO2, PSO3

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				CO2	Explain refrigeration and air conditioning.	PO1, PO2, PO3, PO4,PO5, PO7	PSO1, PSO2, PSO3
				CO3	Demonstrate skills through hands on experience about refrigeration components and their accessories in a Refrigerator.	PO1, PO2, PO3, PO4,PO7	PSO1, PSO2, PSO3
				CO4	Describe the classification, properties of refrigerants and their effects on environment.	PO1, PO2, PO3, PO4,PO7	PSO1, PSO2, PSO3
				CO5	Outline the applications of Low Temperature Physics and refrigeration	PO1, PO2, PO3, PO4,PO6, PO7	PSO1, PSO2, PSO3
12	V	**PHY5SKC**	Low Temperature Physics & Refrigeration (Lab)	CO1	List out, identify and handle equipment used in low temperature lab.	PO1, PO2, PO3, PO4,PO6,PO7	PSO1, PSO2, PSO3
				CO2	Describe the procedures of preparation of Freezing Mixtures.	PO1, PO2, PO3, PO4,PO6,PO7	PSO1, PSO2, PSO3
				CO3	Demonstrate skills on developing various Freezing mixtures and materials.	PO1, PO2, PO3, PO4,PO6,PO7	PSO1, PSO2, PSO3
				CO4	Explain the various methodologies of creating very low temperatures.	PO1, PO2, PO3, PO4,PO6,PO7	PSO1, PSO2, PSO3
				CO5	Outline the applications of low temperature physics in day to day life.	PO1, PO2, PO3, PO4,PO6,PO7	PSO1, PSO2, PSO3

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COURSE NAME : Low Temperature Physics & Refrigeration
Course -VI, Semester -V
Course Outcomes: Upon the completion of the course, the student will be able to,

COURSE -VI: (Theory)

POs/ PSOs COs	Mapping(Cos & POs)							Mapping(Cos & PSOs)		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
CO1	3	3	3	3	-	-	2	3	2	3
CO2	3	3	2	3	3	-	2	3	2	3
CO3	3	3	2	2	-	-	2	3	2	3
CO4	3	3	3	2	-	-	3	3	3	3
CO5	3	3	3	3	-	3	3	3	3	1
Average	3	3	2.6	2.6	3	3	2.4	3	2.4	2.6

OVER ALL AVERAGE BETWEEN COS & POS =2.8   OVER ALL AVERAGE BETWEEN COS & PSOS = 2.66

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COURSE VI: (Lab)

POs/ PSOs COs	Mapping(Cos & POs)							Mapping(Cos & PSOs)		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
CO1	3	3	3	3	-	2	2	3	3	2
CO2	3	2	3	2	-	1	2	3	2	3
CO3	3	3	2	3	-	2	3	2	3	3
CO4	3	3	3	3	-	2	2	2	3	3
CO5	2	2	1	3	-	3	3	2	3	3
Average	2.8	2.6	2.4	2.8	-	2	2.4	2.4	2.8	2.8

OVER ALL AVERAGE BETWEEN COS & POS =2.5   **OVER ALL AVERAGE BETWEEN COS & PSOS = 2.66**

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COURSE NAME: Solar Energy and Applications
Course -VII,Semester -V
Course Outcomes: Upon the completion of the course, the student will be able to,

13	V	**PHY5SKD**	Solar Energy and Applications	CO1	Explain the sun's structure, forms of energy coming from the sun and its measurement .	PO1, PO2, PO3, PO4,PO7	PSO1, PSO2, PSO3
				CO2	Acquire a critical knowledge on the working of thermal and photovoltaic collectors.	PO1, PO2, PO3, PO4,PO7	PSO1, PSO2, PSO3
				CO3	Demonstrate skills related to on solar cells and its applications.	PO1, PO2, PO3, PO4,PO6, PO7	PSO1, PSO2, PSO3
				CO4	Explain testing procedures and fault analysis of thermal collectors and PV modules.	PO1, PO2, PO3, PO4,PO7	PSO1, PSO2, PSO3
				CO5	Comprehend applications of thermal collectors and PV modules.	PO1, PO2, PO3, PO4,PO6, PO7	PSO1, PSO2, PSO3
14	V	**PHY5SKD**	Solar Energy and Applications (Lab)	CO1	List out and identify various components of solar thermal collectors and systems, solar photovoltaic modules and systems.	PO1, PO2, PO3, PO4,PO6,PO7	PSO1, PSO2, PSO3
				CO2	Learn the procedures for measurement of direct, global and diffuse solar radiation. I-V characteristics and efficiency analysis of solar cells and modules.	PO1, PO2, PO3, PO4,PO6,PO7	PSO1, PSO2, PSO3
				CO3	Demonstrate skills acquired in evaluating the performance of solar cell/ module in connecting them approximately to get required power output.	PO1, PO2, PO3, PO4,PO6,PO7	PSO1, PSO2, PSO3

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				CO4	Acquire skills in identification and elimination of the damaged panels without affecting the output power/array.	PO1, PO2, PO3, PO4,PO6,PO7	PSO1, PSO2, PSO3
				CO5	Perform procedures and techniques related to general maintenance solar thermal and photovoltaic modules.	PO1, PO2, PO3, PO4,PO6,PO7	PSO1, PSO2, PSO3

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COURSE VII: (Theory)

POs/ PSOs COs	Mapping(Cos & POs)							Mapping(Cos & PSOs)		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
CO1	3	3	2	3	-	-	3	3	2	2
CO2	3	3	2	3	-	-	3	3	3	2
CO3	3	2	2	2	-	3	2	3	3	2
CO4	3	3	3	2	-	-	3	3	3	3
CO5	2	3	3	3	-	3	3	3	3	3
Average	2.8	2.8	2.4	2.6	-	3	2.8	3	2.8	2.4

OVER ALL AVERAGE BETWEEN COS & POS =2.73   **OVER ALL AVERAGE BETWEEN COS & PSOS = 2.73**

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COURSE -VII: (Lab)

POs/ PSOs COs	Mapping(Cos & POs)							Mapping(Cos & PSOs)		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
CO1	3	3	3	2	-	2	3	3	3	3
CO2	3	2	3	2	-	3	2	3	2	3
CO3	3	3	2	3	-	3	3	3	3	3
CO4	3	3	3	2	-	3	2	3	3	3
CO5	3	3	2	3	-	2	3	3	3	3
Average	3	2.8	2.6	2.4	-	2.6	2.6	3	2.8	3

OVER ALL AVERAGE BETWEEN COS & POS =2.66   OVER ALL AVERAGE BETWEEN COS & PSOS = 2.93

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COURSE NAME:PROJECT

Course -VIII, Semester -VI

Course Outcomes: Upon the completion of the course, the student will be able to,

8	**VIII**		PROJECT	CO1	Analyze and interpret and take appropriate decisions in solving real life problems using statistical tools.	PO1, PO2, PO3, PO4, PO5,PO6, PO7.	PSO1, PSO2, PSO3.
				CO2	Use different Statistical packages for graphical interface, data analysis and interpretation	PO1, PO2, PO3, PO4, PO5,PO6, PO7.	PSO1, PSO2, PSO3.
				CO3	Write a systematic Statistical project report.	PO1, PO2, PO3, PO4, PO5,PO6, PO7.	PSO1, PSO2, PSO3.

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COURSE: VIII - PROJECT

COs	Mapping(Cos & POs)							Mapping(Cos & PSOs)		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
CO1	3	3	2	2	2	3	3	3	2	3
CO2	3	3	3	2	2	3	3	3	2	3
CO3	3	2	3	3	2	3	3	3	3	2
Average	3	3	2.67	2.33	2	3	3	3	2.33	2.67

OVER ALL AVERAGE BETWEEN COS & POS =2.7   **OVER ALL AVERAGE BETWEEN COS & PSOS = 2.6**

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B. Sc THEORY

COs	MAPPING (Cos & POs)							MAPPING (Cos & PSOs)		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
COURSE-I	2.8	2.8	2.2	2.4	-	3	2.4	3	2.8	2.4
COURSE-II	2.8	2.6	2.3	2.3	3	3	2.1	3	2.8	2.3
COURSE-III	3	2.6	2.8	:2.5	3	3	2.5	3	2.8	2.5
COURSE-IV	3	3	2.4	2.6	3	3	2.4	3	2.4	2.6
COURSE-V	3	2.8	2.5	2.6	3	3	2.5	3	2.5	2.5
COURSE-VI	3	3	2.6	2.6	3	3	2.4	3	2.4	2.6
COURSE-VII	2.8	2.8	2.4	2.6	-	3	2.8	3	2.8	2.4
Average	**2.4**	**2.8**	**2.4**	**2.5**	**3**	**3**	**2.4**	**3**	**2.6**	**2.47**

OVERALL AVERAGE BETWEEN COs & POs=2.64   **OVERALL AVERAGE BETWEEN COs & PSOs=2.69**

Levels : = L1 – Remembering   2= L2-Understanding & L3-Applying   3 = L4-Analysing, L5- Evaluating & L6- Creating

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B. Sc Practical

COs	MAPPING (Cos & POs)							MAPPING (Cos & PSOs)		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
COURSE-I	2.8	2.6	2.6	-	2.4	-	2.2	2.4	2.8	2.8
COURSE-II	3	2.7	2.7	2.2	-	2.7	2	2.5	2.7	2.7
COURSE-III	3	2.7	2.7	2.5	-	3	2	2.75	2.75	2.75
COURSE-IV	2.8	2.6	2.6	2.6	-	2.8	2.2	2.4	2.8	2.8
COURSE-V	2.8	2.6	2.4	2	-	2.2	2.4	2.4	2.8	2.8
COURSE-VI	2.8	2.6	2.4	2.8	-	2	2.4	2.4	2.8	2.8
COURSE-VII	3	2.8	2.6	2.4	-	2.6	2.6	3	2.8	3
Average	2.88	2.65	2.57	2.41	2.4	2.55	2.25	2.54	2.77	2.8

OVERALL AVERAGE BETWEEN COs & POs=2.53   **OVERALL AVERAGE BETWEEN COs & PSOs=2.7**

Levels : = L1 – Remembering   2= L2-Understanding & L3-Applying   3 = L4-Analysing, L5- Evaluating & L6- Creating

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DEPARTMENT OF STATISTICS

STATISTICS -THEORY

Sl. No	Semester	Course Code	Course Title		Course Outcomes(Cos)	Program Outcomes (POs)	Program Specific Outcomes (PSOs)
1	I	UG-102	DESCRIPTIVE STATISTICS	CO1	knowledge of Statistics and its scope and importance in various areas such as Medical, Engineering, Agricultural and Social Sciences etc.	PO1, PO2, PO3, PO4, PO5, PO6, PO7.	PSO1, PSO2, PSO3.
				CO2	knowledge of various types of data, their organization and evaluation of summary measures such as measures of central tendency and dispersion etc.	PO1, PO2, PO3, PO4, PO5, PO6, PO7.	PSO1, PSO2, PSO3.
				CO3	knowledge of other types of data reflecting quality characteristics including concepts of independence and association between two attributes,	PO1, PO2, PO3, PO4, PO6, PO7.	PSO1, PSO2, PSO3.
				CO4	Insights into preliminary exploration of different types of data.	PO1, PO2, PO3, PO4, PO6, PO7.	PSO1, PSO2, PSO3.
				CO5	Knowledge of correlation, regression analysis, regression diagnostics, partial and multiple correlations.	PO1, PO2, PO3, PO4, PO5, PO6, PO7.	PSO1, PSO2, PSO3.
2	II	UG-102	PROBABILITY THEORY AND DISTRIBUTIONS	CO1	Ability to distinguish between random and non-random experiments,	PO1, PO2, PO3, PO4, PO7.	PSO1, PSO2, PSO3
				CO2	Knowledge to conceptualize the probabilities of events including frequentist and axiomatic approach. Simultaneously, they will learn the notion of conditional probability including the concept of Baye's Theorem.	PO1, PO2, PO3, PO4, PO6, PO7.	PSO1, PSO2, PSO3.

4				CO3	Knowledge related to concept of discrete and continuous random variables and their probability distributions including expectation and moments.	PO1, PO2, PO3, PO4, PO7.	PSO1, PSO2, PSO3.
				CO4	Knowledge of important discrete and continuous distributions such as Binomial, Poisson, Geometric, Negative Binomial and Hyper-geometric, Normal, uniform, exponential, beta and gamma distributions.	PO1, PO2, PO3, PO4, PO5, PO6, PO7.	PSO1, PSO2, PSO3.
				CO5	Acumen to apply standard discrete and continuous probability distributions to different situations.	PO1, PO2, PO3, PO4, PO6, PO7.	PSO1, PSO2, PSO3.
3	**III**	UG-102	STATISTIC AL INFERENCE	CO1	Concept of law large numbers and their uses	PO1, PO2, PO3, PO4. PO7.	PSO1, PSO2, PSO3.
				CO2	Concept of central limit theorem and its uses in statistics	PO1, PO2, PO3, PO4, PO7.	PSO1, PSO2, PSO3.
				CO3	Concept of random sample from a distribution, sampling distribution of a statistic, standard error of important estimates such as mean and proportions.	PO1, PO2, PO3, PO4, PO6, PO7.	PSO1, PSO2, PSO3.
				CO4	Knowledge about important inferential aspects such as point estimation, test of hypotheses and associated concepts.	PO1, PO2, PO3, PO4, PO6, PO7.	PSO1, PSO2, PSO3.
				CO5	Knowledge about inferences from Binomial, Poisson and Normal distributions as illustrations.	PO1, PO2, PO3, PO4, PO6, PO7.	PSO1, PSO2, PSO3.
				CO6	Concept about non-parametric method and some important non-parametric tests.	PO1, PO2, PO3, PO4, PO6, PO7.	PSO1, PSO2, PSO3.
4	**IV**	UG-102	SAMPLING TECHNIQU ES AND DESIGNS OF EXPERIME NTS	CO1	Introduced to various statistical sampling schemes such as simple, stratified and systematic sampling.	PO1, PO2, PO3, PO4, PO6, PO7.	PSO1, PSO2, PSO3..
				CO2	An idea of conducting the sample surveys and selecting appropriate sampling techniques.	PO1, PO2, PO3, PO4, PO5, PO6, PO7.	PSO1, PSO2, PSO3.
				CO3	Knowledge about comparing various sampling techniques.	PO1, PO2, PO3, PO4, PO5, PO6, PO7.	PSO1, PSO2, PSO3.
				CO4	Carry out one way and two way Analysis of Variance.	PO1, PO2, PO3, PO4, PO5, PO6, PO7.	PSO1, PSO2, PSO3.

				CO5	Understand the basic terms used in design of experiments.	PO1, PO2, PO3, PO4, PO7.	PSO1, PSO2, PSO3.
				CO6	Use appropriate experimental designs to analyze the experimental data.	PO1, PO2, PO3, PO4, PO5, PO6, PO7.	PSO1, PSO2, PSO3.
5	V	UG-102	APPLIED STATISTICS	CO1	Time series data, its applications to various fields and components of time series.	PO1, PO2, PO3, PO4, PO5, PO6, PO7.	PSO1, PSO2, PSO3.
				CO2	Fitting and plotting of various growth curves such as modified exponential, Gompertz and logistic curve and also Fitting of trend by Moving Average method.	PO1, PO2, PO3, PO4, PO5, PO6, PO7.	PSO1, PSO2, PSO3.
				CO3	Measurement of Seasonal Indices by Ratio-to-Trend, Ratio-to-Moving Average and Link Relative methods.	PO1, PO2, PO3, PO4, PO5,PO6, PO7.	PSO1, PSO2, PSO3.
				CO4	Interpret and use a range of index numbers commonly used in the business sector.	PO1, PO2, PO3, PO4, PO5, PO6, PO7.	PSO1, PSO2, PSO3
				CO5	Perform calculations involving simple and weighted index numbers.	PO1, PO2, PO3, PO4, PO5, PO6, PO7.	PSO1, PSO2, PSO3, PSO4.
				CO6	Measuring of consumer price index and perform calculations.	PO1, PO2, PO3, PO4, PO5,PO6, PO7.	PSO1, PSO2, PSO3.
				CO7	Construction and implementation of life tables, Population growth curves, population estimates and projections.	PO1, PO2, PO3, PO4, PO5,PO6, PO7.	PSO1, PSO2, PSO3.
6	VI	UG-102	OPERA TIONS RESEARCH - I	CO1	To know the scope of Operations Research.	PO1, PO2, PO3, PO4, PO7.	PSO1, PSO2, PSO3.
				CO2	To link the OR techniques with business environment and life sciences.	PO1, PO2, PO3, PO4, PO5, PO6, PO7.	PSO1, PSO2, PSO3.
				CO3	To convert real life problems into mathematical models.	PO1, PO2, PO3, PO4, PO5, PO6, PO7.	PSO1, PSO2, PSO3.
				CO4	To find a solution to the problem in different cases.	PO1, PO2, PO3, PO4, PO5, PO7.	PSO1, PSO2, PSO3.

				CO5	To inculcate logical thinking to find a solution to the problem.	PO1, PO2, PO3, PO4, PO7.	PSO1, PSO2, PSO3.
7	**VII**	UG-102	OPERA TIONS RESEARCH – II	CO1	To solve the problems in logistics.	PO1, PO2, PO3, PO4, PO7.	PSO1, PSO2, PSO3.
				CO2	To find a solution for the problems having space constraints	PO1, PO2, PO3, PO4. PO7	PSO1, PSO2, PSO3.
				CO3	To minimize the total elapsed time in an industry by efficient allocation of jobs to the suitable persons.	PO1, PO2, PO3, PO4, PO6, PO7.	PSO1, PSO2, PSO3.
				CO4	To find a solution for an adequate usage of human resources	PO1, PO2, PO3, PO4, PO6, PO7.	PSO1, PSO2, PSO3.
				CO5	To find the most plausible solutions in industries and agriculture when a random environment exists.	PO1, PO2, PO3, PO4, PO5, PO6, PO7.	PSO1, PSO2, PSO3.
8	**VIII**	UG-102	PROJECT	CO1	Analyze and interpret and take appropriate decisions in solving real life problems using statistical tools.	PO1, PO2, PO3, PO4, PO5, PO6, PO7.	PSO1, PSO2, PSO3.
				CO2	Use different Statistical packages for graphical interface, data analysis and interpretation	PO1, PO2, PO3, PO4, PO5, PO6, PO7.	PSO1, PSO2, PSO3.
				CO3	Write a systematic Statistical project report.	PO1, PO2, PO3, PO4, PO5, PO6, PO7.	PSO1, PSO2, PSO3.

STATSITICS - PRACTICALS

Sl. No	Semester	Course Code	Course Title		Course Outcomes(Cos)	Program Outcomes (POs)	Program Specific Outcomes (PSOs)
1	**I**	UG-102	DESCRIPTIVE STATISTICS - PRACTICALS	CO1	Interpret Graphical and Diagrammatic data presentation which makes it easier for a common man to understand the given data.	PO1,PO2,PO3, PO4, PO6, PO7.	PSO1, PSO2, PSO3
				CO2	Determine Various measures of Central Tendency and Dispersion and interpret the results.	PO1, PO2, PO3, PO4, PO6, PO7.	PSO1, PSO2, PSO3
				CO3	Interpret problem solving skills using Moments	PO1, PO2, PO3, PO4, PO7.	PSO1, PSO2, PSO3
				CO4	Apply the Karl Pearson's coefficient of Skewness and Bowley's Coefficient of Skewness for the given data and compare the results.	PO1, PO2, PO3, PO4, PO6, PO7.	PSO1, PSO2, PSO3
				CO5	Apply the Curve fitting Methods to analyze the given Bivariate data.	PO1, PO2, PO3, PO4, PO6, PO7.	PSO1, PSO2, PSO3
				CO6	To Apply and Solve the given Bivariate data using Correlation and Regression methods.	PO1, PO2, PO3, PO4, PO5, PO6, PO7.	PSO1, PSO2, PSO3
				CO7	Apply association and Contingency Techniques for Qualitative data using Attributes and compare the results	PO1, PO2, PO3, PO4, PO7.	PSO1, PSO2, PSO3
2	**II**	UG-102	PROBABILITY THEORY AND DISTRIBUTIONS - PRACTICALS	CO1	Identify different types of Real Life Problems	PO1, PO2, PO3, PO4, PO6, PO7.	PSO1, PSO2, PSO3
				CO2	Apply and analyze the Discrete Probability distributions – Binomial, Poisson, Negative Binomial and Geometric – to the real life situations to draw valid conclusions.	PO1, PO2, PO3, PO4, PO6, PO7.	PSO1, PSO2, PSO3
				CO3	Interpret Continuous Probability distributions – Normal and Exponential – in day to day life to draw valid inferences.	PO1, PO2, PO3, PO4, PO6, PO7.	PSO1, PSO2, PSO3
3	**III**	UG-102	STATISTICAL	CO1	Apply Large Sample Tests to solve different real life situations.	PO1, PO2, PO3, PO4, PO5,PO6, PO7.	PSO1, PSO2, PSO3

				CO2	Apply Small Sample Tests to solve different real life situations.	PO1, PO2, PO3, PO4, PO5, PO6, PO7.	PSO1, PSO2, PSO3
			INFERENCE - PRACTICALS	CO3	Distinguish between Parametric and Non-Parametric tests and apply them for the real life data problems.	PO1, PO2, PO3, PO4, PO5, PO6, PO7.	PSO1, PSO2, PSO3
4	**IV**	UG-102	SAMPLING TECHNIQUES AND DESIGNS OF EXPERIMENTS - PRACTICALS	CO1	Design and Implement Surveys with the random sampling designs – Simple, Stratified and Systematic.	PO1, PO2, PO3, PO4, PO5, PO6, PO7.	PSO1, PSO2, PSO3
				CO2	Compute and Interpret the results of ANOVA and F-test.	PO1, PO2, PO3, PO4, PO6, PO7.	PSO1, PSO2, PSO3
				CO3	Apply the Basic Designs of Experiments – CRD, RBD and LSD – to analyze real life situations.	PO1, PO2, PO3, PO4, PO6, PO7.	PSO1, PSO2, PSO3
				CO4	Demonstrate how to analyze and interpret the results of the full Factorial Designs.	PO1, PO2, PO3, PO4, PO7.	PSO1, PSO2, PSO3
5	**V**	UG-102	APPLIED STATISTICS - PRACTICALS	CO1	Apply various Trend methods to solve the different Time Series data in real life situations.	PO1, PO2, PO3, PO4, PO6, PO7.	PSO1, PSO2, PSO3
				CO2	Discuss and Analyze the economy and Standard of living in different countries using Index Numbers.	PO1, PO2, PO3, PO4, PO6, PO7.	PSO1, PSO2, PSO3
				CO3	Interpret the Methods of predicting Birth and Death Rates.	PO1, PO2, PO3, PO4, PO6, PO7.	PSO1, PSO2, PSO3
				CO4	Construct the Life Tables for living beings from different age groups.	PO1, PO2, PO3, PO4, PO6, PO7.	PSO1, PSO2, PSO3
6	**VI**	UG-102	OPERATIONS RESEARCH – I - PRACTICALS	CO1	To construct a linear programming problems to the given data.	PO1, PO2, PO3, PO4, PO7.	PSO1, PSO2, PSO3
				CO2	Apply Graphical Method, Simplex Method, Big-M method and Two-Phase Simplex Methods to solve Optimization Problems.	PO1, PO2, PO3, PO4, PO6, PO7.	PSO1, PSO2, PSO3
				CO3	To determine IBFS and OS to the given Linear Programming Problems.	PO1, PO2, PO3, PO4, PO7.	PSO1, PSO2, PSO3
				CO4	Demonstrate how to apply the Principle of Duality to solve the Operations Research Problems.	PO1, PO2, PO3, PO4, PO7.	PSO1, PSO2, PSO3
				CO5	Interpret the Problems based on Post-Optimal Analysis.	PO1, PO2, PO3, PO4, PO7.	PSO1, PSO2, PSO3

7	VII	UG-102	OPERA TIONS RESEARCH – II - PRACTICALS	CO1	Apply and Analyze various types of Deterministic Models – Transportation Problem and Assignment Problem.	PO1, PO2, PO3, PO4, PO6, PO7.	PSO1, PSO2, PSO3
				CO2	Maximize the Profits or Minimize the Cost of and Industry by efficient allocation of Jobs to the suitable Persons.	PO1, PO2, PO3, PO4, PO6, PO7.	PSO1, PSO2, PSO3
				CO3	Minimise the Total elapsed time of the projects by using CPM and PERT Models.	PO1, PO2, PO3, PO4, PO7.	PSO1, PSO2, PSO3
				CO4	Solve and Interpret the simple models of Game Theory.	PO1, PO2, PO3, PO4, PO7.	PSO1, PSO2, PSO3
				CO5	Demonstrate how to apply the Linear Programming Method for Solving the Games.	PO1, PO2, PO3, PO4, PO7.	PSO1, PSO2, PSO3

I YEAR – B.Sc – I SEMESTER – PAPER – I

	MAPPING(COs & POs)							MAPPING(COs & PSOs)		
	PO1 **Essential Domain Knowledge**	PO2 **Creative and critical thinking and problem solving abilities**	PO3 **Communication Skills and Team Work**	PO4 **Digital Capabilities**	PO5 **Social Responsibilities, Ethical and Environmental Competency**	PO6 **Employability and Research related Skills**	PO7 **Life-Long Learning**	PSO1	PSO2	PSO3
CO1	3	2	3	2	2	3	3	3	2	3
CO2	2	3	3	3	2	2	3	3	3	3
CO3	3	3	3	3	-	2	3	2	2	3
CO4	2	2	3	3	-	2	3	3	2	2
CO5	3	3	3	3	2	3	3	3	3	3
Ave rage	2.6	2.6	3	2.8	2	2.4	3	2.8	2.4	2.8

OVER ALL AVERAGE BETWEEN COS & POS = 2.63　　　　　　　　**OVER ALL AVERAGE BETWEEN COS & PSOS = 2.65**

I YEAR – B.Sc – I SEMESTER – PAPER – I - PRACTICALS

	MAPPING(COs & PSOs)									
	PO1 Essential Domain Knowledge	PO2 Creative and critical thinking and problem solving abilities	PO3 Communication Skills and Team Work	PO4 Digital Capabilities	PO5 Social Responsibilities, Ethical and Environmental Competency	PO6 Employability and Research related Skills	PO7 Life-Long Learning	PSO1	PSO2	PSO3
CO1	3	3	3	3	-	2	2	3	3	3
CO2	3	3	3	3	-	2	3	3	3	3
CO3	2	3	2	2	-	1	2	3	2	2
CO4	3	3	3	3	-	2	2	2	3	3
CO5	3	3	3	2	-	2	3	3	2	2
CO6	3	3	3	2	2	3	3	3	2	2
CO7	2	3	2	2	-	-	2	2	2	2
Average	2.71	3	2.71	2.43	2	2	2.43	2.71	2.43	2.43

OVER ALL AVERAGE BETWEEN COS & POS = 2.47   **OVER ALL AVERAGE BETWEEN COS & PSOS = 2.52**

I YEAR – B.Sc – II SEMESTER – PAPER – II

	MAPPING(COs & PSOs)									
	PO1 Essential Domain Knowledge	PO2 Creative and critical thinking and problem solving abilities	PO3 Communication Skills and Team Work	PO4 Digital Capabilities	PO5 Social Responsibilities, Ethical and Environmental Competency	PO6 Employability and Research related Skills	PO7 Life-Long Learning	PSO1	PSO2	PSO3
CO1	3	3	3	2	-	-	3	3	2	2
CO2	3	3	3	3	-	2	3	3	3	3
CO3	3	3	3	3	-	-	2	2	2	3
CO4	2	2	3	3	2	2	3	3	2	2
CO5	3	3	3	3	-	3	3	3	3	3
Average	2.8	2.8	3	2.8	2	2.3	2.8	2.8	2.4	2.6

OVER ALL AVERAGE BETWEEN COS & POS = 2.64   **OVER ALL AVERAGE BETWEEN COS & PSOS = 2.6**

I YEAR – B.Sc – II SEMESTER – PAPER – II – PRACTICALS

	MAPPING(COs & PSOs)									
	PO1 Essential Domain Knowledge	PO2 Creative and critical thinking and problem solving abilities	PO3 Communication Skills and Team Work	PO4 Digital Capabilities	PO5 Social Responsibilities, Ethical and Environmental Competency	PO6 Employability and Research related Skills	PO7 Life-Long Learning	PSO1	PSO2	PSO3
CO1	3	2	3	3	-	2	3	3	3	2
CO2	3	3	3	3	-	3	3	3	3	3
CO3	3	3	3	3	-	3	3	3	3	3
Average	3	2.67	3	3	-	2.67	3	3	3	2.67

OVER ALL AVERAGE BETWEEN COS & POS = 2.89   **OVER ALL AVERAGE BETWEEN COS & PSOS = 2.89**

II YEAR – B.Sc – III SEMESTER – PAPER - III

	MAPPING(COs & PSOs)									
	PO1 Essential Domain Knowledge	PO2 Creative and critical thinking and problem solving abilities	PO3 Communication Skills and Team Work	PO4 Digital Capabilities	PO5 Social Responsibilities, Ethical and Environmental Competency	PO6 Employability and Research related Skills	PO7 Life-Long Learning	PSO1	PSO2	PSO3
CO1	3	3	3	2	-	-	2	3	2	2
CO2	3	2	3	3	-	-	3	2	3	3
CO3	3	3	3	3	-	2	2	3	3	2
CO4	3	3	3	3	-	3	3	3	3	3
CO5	3	3	3	3	-	3	3	3	3	3
CO6	3	3	3	3	-	3	2	3	2	3
Average	3	2.83	3	2.83	-	2.75	2.5	2.8	2.67	2.67

OVER ALL AVERAGE BETWEEN COS & POS = 2.82   **OVER ALL AVERAGE BETWEEN COS & PSOS = 2.71**

II YEAR – B.Sc – III SEMESTER – PAPER - III - PRACTICALS

	MAPPING(COs & PSOs)									
	PO1 **Essential Domain Knowledge**	PO2 **Creative and critical thinking and problem solving abilities**	PO3 **Communication Skills and Team Work**	PO4 **Digital Capabilities**	PO5 **Social Responsibilities, Ethical and Environmental Competency**	PO6 **Employability and Research related Skills**	PO7 **Life-Long Learning**	PSO1	PSO2	PSO3
CO1	3	3	3	3	1	3	3	3	3	3
CO2	3	3	3	3	2	3	3	3	3	2
CO3	3	3	2	2	2	3	3	3	2	2
Average	3	3	2.67	2.67	1.67	3	3	3	2.67	2.33

OVER ALL AVERAGE BETWEEN COS & POS = 2.72   **OVER ALL AVERAGE BETWEEN COS & PSOS = 2.67**

II YEAR – B.Sc – IV SEMESTER – PAPER – IV

	MAPPING(COs & PSOs)									
	PO1 Essential Domain Knowledge	PO2 Creative and critical thinking and problem solving abilities	PO3 Communication Skills and Team Work	PO4 Digital Capabilities	PO5 Social Responsibilities, Ethical and Environmental Competency	PO6 Employability and Research related Skills	PO7 Life-Long Learning	PSO1	PSO2	PSO3
CO1	3	3	3	3	-	2	3	3	3	2
CO2	3	2	3	3	3	3	3	3	3	3
CO3	3	2	3	3	2	3	3	2	3	3
CO4	3	3	3	2	2	2	3	3	2	3
CO5	3	2	3	2	-	-	3	2	2	2
CO6	3	3	2	2	1	2	3	3	3	3
Ave rage	3	2.5	2.83	2.5	2	2.4	3	2.67	2.67	2.67

OVER ALL AVERAGE BETWEEN COS & POS = 2.6   **OVER ALL AVERAGE BETWEEN COS & PSOS = 2.67**

II YEAR – B.Sc – IV SEMESTER – PAPER – IV – PRACTICALS

	MAPPING(COs & PSOs)									
	PO1 **Essential Domain Knowledge**	PO2 **Creative and critical thinking and problem solving abilities**	PO3 **Communication Skills and Team Work**	PO4 **Digital Capabilities**	PO5 **Social Responsibilities, Ethical and Environmental Competency**	PO6 **Employability and Research related Skills**	PO7 **Life-Long Learning**	PSO1	PSO2	PSO3
CO1	3	3	3	3	2	3	3	3	3	2
CO2	3	3	2	2	-	3	3	3	2	3
CO3	3	3	3	2	-	3	3	3	3	3
CO4	3	2	3	3	-	-	3	3	2	2
Ave rage	3	2.75	2.75	2.5	2	3	3	3	2.5	2.5

OVER ALL AVERAGE BETWEEN COS & POS = 2.71   **OVER ALL AVERAGE BETWEEN COS & PSOS = 2.67**

II YEAR – B.Sc – IV SEMESTER – PAPER – V

	MAPPING (COs & PSOs)									
	PO1 Essential Domain Knowledge	PO2 Creative and critical thinking and problem solving abilities	PO3 Communication Skills and Team Work	PO4 Digital Capabilities	PO5 Social Responsibilities, Ethical and Environmental Competency	PO6 Employability and Research related Skills	PO7 Life-Long Learning	PSO1	PSO2	PSO3
CO1	3	2	2	2	2	2	3	3	2	2
CO2	3	3	3	3	1	3	3	3	3	3
CO3	3	2	3	3	2	2	3	3	2	3
CO4	3	3	3	2	1	3	3	3	2	2
CO5	3	3	3	3	1	2	3	3	3	2
CO6	3	3	3	3	2	2	3	3	3	2
CO7	3	3	3	3	1	2	3	3	3	2
Average	3	2.71	2.86	2.71	1.43	2.29	3	3	2.57	2.29

OVER ALL AVERAGE BETWEEN COS & POS = 2.57   **OVER ALL AVERAGE BETWEEN COS & PSOS = 2.62**

II YEAR – B.Sc – IV SEMESTER – PAPER – V – PRACTICALS

	MAPPING(COs & PSOs)									
	PO1 Essential Domain Knowledge	PO2 Creative and critical thinking and problem solving abilities	PO3 Communication Skills and Team Work	PO4 Digital Capabilities	PO5 Social Responsibilities, Ethical and Environmental Competency	PO6 Employability and Research related Skills	PO7 Life-Long Learning	PSO1	PSO2	PSO3
CO1	3	3	3	3	-	2	3	3	3	3
CO2	3	3	3	2	-	3	3	3	2	3
CO3	3	2	2	2	-	2	3	3	3	2
CO4	3	3	2	2	-	2	3	3	2	2
Ave rage	3	2.75	2.50	2.25	-	2.25	3	3	2.5	2.5

OVER ALL AVERAGE BETWEEN COS & POS = 2.625   **OVER ALL AVERAGE BETWEEN COS & PSOS = 2.67**

III YEAR – B.Sc – V SEMESTER – PAPER - VI

	MAPPING(COs & PSOs)									
	PO1 Essential Domain Knowledge	PO2 Creative and critical thinking and problem solving abilities	PO3 Communication Skills and Team Work	PO4 Digital Capabilities	PO5 Social Responsibilities, Ethical and Environmental Competency	PO6 Employability and Research related Skills	PO7 Life-Long Learning	PSO1	PSO2	PSO3
CO1	3	2	3	3	-	-	2	3	2	2
CO2	3	2	3	3	1	2	3	3	2	2
CO3	3	2	3	3	2	2	3	2	3	3
CO4	3	3	2	2	2	-	3	3	3	2
CO5	3	3	3	3	-	-	3	3	3	2
Ave rage	3	2.4	2.8	2.8	1.67	2	2.8	2.8	2.6	2.2

OVER ALL AVERAGE BETWEEN COS & POS = 2.5　　　　　　　　**OVER ALL AVERAGE BETWEEN COS & PSOS = 2.53**

III YEAR – B.Sc – V SEMESTER – PAPER - VI – PRACTICALS

	MAPPING(COs & PSOs)									
	PO1 Essential Domain Knowledge	PO2 Creative and critical thinking and problem solving abilities	PO3 Communication Skills and Team Work	PO4 Digital Capabilities	PO5 Social Responsibilities, Ethical and Environmental Competency	PO6 Employability and Research related Skills	PO7 Life-Long Learning	PSO1	PSO2	PSO3
CO1	3	2	3	2	-	-	3	3	2	2
CO2	3	3	3	3	-	2	3	3	3	3
CO3	3	3	2	2	-	-	2	3	2	3
CO4	3	3	2	3	-	-	2	3	3	2
CO5	3	3	2	2	-	-	2	3	2	2
Average	3	2.8	2.4	2.4	-	2	2.4	3	2.4	2.4

OVER ALL AVERAGE BETWEEN COS & POS = 2.5   **OVER ALL AVERAGE BETWEEN COS & PSOS = 2.6**

III YEAR – B.Sc – V SEMESTER – PAPER - VII

	MAPPING(COs & PSOs)									
	PO1 **Essential Domain Knowledge**	PO2 **Creative and critical thinking and problem solving abilities**	PO3 **Communication Skills and Team Work**	PO4 **Digital Capabilities**	PO5 **Social Responsibilities, Ethical and Environmental Competency**	PO6 **Employability and Research related Skills**	PO7 **Life-Long Learning**	PSO1	PSO2	PSO3
CO1	3	2	2	2	-	-	3	3	2	3
CO2	2	3	3	2	-	1	3	3	2	3
CO3	3	3	3	3	1	3	3	3	2	2
CO4	3	3	3	3	2	2	3	3	3	2
CO5	3	3	3	3	2	2	3	3	3	2
Average	2.8	2.8	2.8	2.6	1.67	2	3	3	2.4	2.4

OVER ALL AVERAGE BETWEEN COS & POS = 2.52　　　　　　　　**OVER ALL AVERAGE BETWEEN COS & PSOS = 2.6**

III YEAR – B.Sc – V SEMESTER – PAPER – VII- PRACTICALS

	MAPPING(COs & PSOs)									
	PO1 Essential Domain Knowledge	PO2 Creative and critical thinking and problem solving abilities	PO3 Communication Skills and Team Work	PO4 Digital Capabilities	PO5 Social Responsibilities, Ethical and Environmental Competency	PO6 Employability and Research related Skills	PO7 Life-Long Learning	PSO1	PSO2	PSO3
CO1	3	3	3	2	-	2	3	3	2	3
CO2	3	3	3	3	-	3	3	3	3	3
CO3	3	3	3	2	-	-	2	3	3	2
CO4	3	3	3	3	-	-	3	3	3	3
CO5	3	3	3	2	-	-	2	3	3	2
Ave rage	3	3	3	2.4	-	2.5	2.6	3	2.8	2.6

OVER ALL AVERAGE BETWEEN COS & POS = 2.75   **OVER ALL AVERAGE BETWEEN COS & PSOS = 2.8**

III YEAR – B.Sc – VI SEMESTER – PAPER- VIII- PROJECT

	MAPPING(COs & PSOs)									
	PO1 Essential Domain Knowledge	PO2 Creative and critical thinking and problem solving abilities	PO3 Communication Skills and Team Work	PO4 Digital Capabilities	PO5 Social Responsibilities, Ethical and Environmental Competency	PO6 Employability and Research related Skills	PO7 Life-Long Learning	PSO1	PSO2	PSO3
CO1	3	3	2	2	2	3	3	3	2	3
CO2	3	3	3	2	2	3	3	3	2	3
CO3	3	2	3	3	2	3	3	3	3	2
Average	3	3	2.67	2.33	2	3	3	3	2.33	2.67

OVER ALL AVERAGE BETWEEN COS & POS = 2.7   **OVER ALL AVERAGE BETWEEN COS & PSOS = 2.67**

III YEAR – B.Sc – STATISTICS- THEORY

COs	MAPPING (COs & POs)							MAPPING (COs & PSOs)		
	PO1 Essential Domain Knowledge	PO2 Creative and critical thinking and problem solving abilities	PO3 Communication Skills and Team Work	PO4 Digital Capabilities	PO5 Social Responsibilities, Ethical and Environmental Competency	PO6 Employability and Research related Skills	PO7 Life-Long Learning	PSO1	PSO2	PSO3
PAPER -I	2.6	2.6	3	2.8	2	2.4	3	2.8	2.4	2.8
PAPER -II	2.8	2.8	3	2.8	2	2.3	2.8	2.8	2.4	2.6
PAPER - III	3	2.83	3	2.83	-	2.75	2.5	2.8	2.67	2.67
PAPER -IV	3	2.5	2.83	2.5	2	2.4	3	2.67	2.67	2.67
PAPER -V	3	2.71	2.86	2.71	1.43	2.29	3	3	2.57	2.29
PAPER -VI	3	2.4	2.8	2.8	1.67	2	2.8	2.8	2.6	2.2
PAPER - VII	2.8	2.8	2.8	2.6	1.67	2	3	3	2.4	2.4
PAPER - VIII	3	3	2.67	2.33	2	3	3	3	2.33	2.67

COs										
Ave rage	2.90	2.71	2.87	2.67	1.82	2.4	2.89	2.86	2.51	2.54

III YEAR – B.Sc – STATISTICS- PRACTICALS

COs	MAPPING (COs & POs)							MAPPING (COs & PSOs)		
	PO1 Essential Domain Knowledge	PO2 Creative and critical thinking and problem solving abilities	PO3 Communication Skills and Team Work	PO4 Digital Capabilities	PO5 Social Responsibilities, Ethical and Environmental Competency	PO6 Employability and Research related Skills	PO7 Life-Long Learning	PSO1	PSO2	PSO3
PAPER -I	2.71	3	2.71	2.43	2	2	2.43	2.71	2.43	2.43
PAPER -II	3	2.67	3	3	-	2.67	3	3	3	2.67
PAPER - III	3	3	2.67	2.67	1.67	3	3	3	2.67	2.33
PAPER -IV	3	2.75	2.75	2.5	2	3	3	3	2.5	2.5
PAPER -V	3	2.75	2.50	2.25	-	2.25	3	3	2.5	2.5
PAPER -VI	3	2.8	2.4	2.4	-	2	2.4	3	2.4	2.4
PAPER - VII	3	3	3	2.4	-	2.5	2.6	3	2.8	2.6
Ave rage	2.96	2.85	2.72	2.52	1.89	2.49	2.78	2.96	2.61	2.49

OVER ALL AVERAGE BETWEEN COS & POS =   OVER ALL AVERAGE BETWEEN COS & PSOS =

Levels : 1 = L1- Remembering   2 = L2- Understanding & L3- Applying   3 = L4-Analyzing, L5-Evaluating & L6- Creating

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DEPARTMENT OF COMPUTER SCIENCE

Sl. No	Sem ester	Course Code	Course Title	Course Outcomes(Cos)		Program Outcomes (POs)	Program Specific Outcomes (PSOs)
1	I	C1	Problem solving in c	CO1	Understand the basic terminology used in computer programming	PO1, PO2, PO3, PO4, PO6,PO7	PSO1, PSO2, PSO3
				CO2	Write, compile and debug programs in C language.	PO1, PO2, PO3, PO4, PO6,PO7.	PSO1, PSO2, PSO3.
				CO3	Use different data types in a computer program	PO1, PO2, PO3, PO4, PO6,PO7.	PSO1, PSO2, PSO3.
				CO4	Design programs involving decision structures, loops and functions	PO1, PO2, PO3, PO4, PO6,PO7.	PSO1, PSO2, PSO3.
				CO5	Understand the dynamics of memory by the use of pointers and Structures.	PO1, PO2, PO3, PO4, PO6,PO7.	PSO1, PSO2, PSO3.
				CO6	Apply different operations in File handling.	PO1, PO2, PO3, PO4, PO6,PO7	PSO1, PSO2, PSO3.
2	II	C2	DATA STRUCTURES	CO1	Identify data structures suitable to solve problems	PO1, PO2, PO3, PO4, PO6, PO7.	PSO1, PSO2, PSO3..
				CO2	Developing algorithms	PO1, PO2, PO3, PO4, PO5, PO6, PO7.	PSO1, PSO2, PSO3.
				CO3	Identifying the use of Time and Space Complexity.	PO1, PO2, PO3, PO4, PO6,PO7.	PSO1, PSO2, PSO3.

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				CO4	Implementing different sorting & searching techniques.	PO1, PO2, PO3, PO4, PO6,PO7.	PSO1, PSO2, PSO3.
3	III	C3	DATA BASE MANAGEMENT SYSTEM	CO1	Gain knowledge of Database, DBMS and SQL	PO1, PO2, PO3, PO4, PO6,PO7.	PSO1, PSO2, PSO3.
				CO2	Learn SQL as best analysis tool for extract data in different ways	PO1, PO2, PO3, PO4, PO5, PO6, PO7.	PSO1, PSO2, PSO3.
				CO3	Create a small database using SQL.	PO1, PO2, PO3, PO4, PO6,PO7.	PSO1, PSO2, PSO3.
				CO4	Able to construct SQL queries to Store, Retrieve data in database	PO1, PO2, PO3, PO4, PO6, PO7.	PSO1, PSO2, PSO3.
				CO5	Model database using ER Diagrams and design database schemas based on the model	PO1, PO2, PO3, PO4, PO5, PO6, PO7.	PSO1, PSO2, PSO3.
4	IV	C4	OBJECT ORIENTED PROGRAMMING THROUGH JAVA	CO1	Understand the concept and underlying principles of Object-Oriented Programming	PO1, PO2, PO3, PO4, PO5, PO6, PO7.	PSO1, PSO2, PSO3.
				CO2	Understand how object-oriented concepts are incorporated into the Java programming language	PO1, PO2, PO3, PO4, PO6,PO7.	PSO1, PSO2, PSO3.
				CO3	Develop problem-solving and programming skills using OOP concept	PO1, PO2, PO3, PO4, PO5, PO6, PO7.	PSO1, PSO2, PSO3.
				CO4	Understand the benefits of a well structured program	PO1, PO2, PO3, PO4, PO6,PO7.	PSO1, PSO2, PSO3.
				CO5	Develop the ability to solve real-world problems through software development in high-level programming language like Java	PO1, PO2, PO3, PO4, PO5, PO6, PO7.	PSO1, PSO2, PSO3.
				CO6	Develop efficient Java applets and applications using OOP concept	PO1, PO2, PO3,	PSO1, PSO2,

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							PO4, PO6,PO7.	PSO3.
5	IV	C5	OPERATING SYSTEM	CO1	Understand the main components and Structure of Operating System& their functions		PO1, PO2, PO3, PO4,PO6,PO7.	PSO1, PSO2, PSO3.
				CO2	Analyze various ways of Process Management & CPU Scheduling Algorithms		PO1, PO2, PO3, PO4, PO7.	PSO1, PSO2, PSO3.
				CO3	Evaluate various device and resources like Memory, Time and CPU Management techniques in distributed systems.		PO1, PO2, PO3, PO4, PO7.	PSO1, PSO2, PSO3.
				CO4	Apply different methods for Preventing Deadlocks in a Computer System.		PO1, PO2, PO3, PO7.	PSO1, PSO2, PSO3.
6.	V	C6	WEB INTERFACE DESIGNING TECHNOLOGIES	CO1	To understand the web architecture and web services.		PO1, PO2, PO3, PO4, PO6,PO7.	PSO1, PSO2, PSO3.
				CO2	To practice latest web technologies and tools by conducting experiments		PO1, PO2, PO3, PO4, PO6,PO7.	PSO1, PSO2, PSO3.
				CO3	To design interactive web pages using HTML and Style sheets.		PO1, PO2, PO3, PO4, PO5, PO6, PO7.	PSO1, PSO2, PSO3.
				CO4	To study the framework and building blocks of Integrated Development Environment		PO1, PO2, PO3, PO4, PO5, PO6, PO7.	PSO1, PSO2, PSO3.
				CO5	To provide solutions by identifying and formulating IT related problems.		PO1, PO2, PO3, PO4, PO6,PO7.	PSO1, PSO2, PSO3.
.7	V	C7	WEB APPLICATION DESIGNING WITH PHP &MYSQL	CO1	Write a simple program in PHP		PO1, PO2, PO3, PO4, PO6,PO7.	PSO1, PSO2, PSO3.
				CO2	Understand how to use regular expressions, handle and validate data using PHP		PO1, PO2, PO3, PO4, PO6,PO7.	PSO1, PSO2, PSO3.
				CO3	Apply In-Built functions and Create user defined functions in PHP programming		PO1, PO2, PO3, PO4, PO5, PO6, PO7.	PSO1, PSO2, PSO3.

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				CO4	Write programs to create dynamic &interactive web based applications using PHP & MYSQL.	PO1, PO2, PO3, PO4, PO5, PO6, PO7.	PSO1, PSO2, PSO3.
8	VI		LONG TERM INTERNSHIP PROJECT	CO1	Analyze and interpret and take appropriate decisions in solving real life problems using statistical tools.	PO1, PO2, PO3, PO4, PO5,PO6, PO7.	PSO1, PSO2, PSO3.
				CO2	Use different Statistical packages for graphical interface, data analysis and interpretation	PO1, PO2, PO3, PO4, PO5,PO6, PO7.	PSO1, PSO2, PSO3.
				CO3	Write a systematic Statistical project report.	PO1, PO2, PO3, PO4, PO5,PO6, PO7.	PSO1, PSO2, PSO3.

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I YEAR – BSC – I SEMESTER – COURCE– C1 - THEORY

	MAPPING(COs & POs)							MAPPING(COs & PSOs)		
	PO1 **Essential Domain Knowledge**	PO2 **Creative and critical thinking and problem solving abilities**	PO3 **Communication Skills and Team Work**	PO4 **Digital Capabilities**	PO5 **Social Responsibilities, Ethical and Environmental Competency**	PO6 **Employability and Research related Skills**	PO7 **Life-Long Learning**	PSO1	PSO2	PSO3
CO1	3	3	3	3	--	2	3	3	3	3
CO2	3	3	3	3	--	2	3	3	3	3
CO3	3	3	3	3	--	2	3	3	3	3
CO4	3	3	3	3	--	2	3	3	3	3
CO5	3	3	3	3	--	2	3	3	3	3
CO6	3	3	3	3	--	2	3	3	3	3
Ave rage	3	3	3	3	--	2	3	3	3	3

OVER ALL AVERAGE BETWEEN COS & POS =2.83   **OVER ALL AVERAGE BETWEEN COS & PSOS = 3**

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I YEAR – BSC – II SEMESTER – COURCE– C2 – THEORY

	MAPPING(COs & POs)							MAPPING(COs & PSOs)		
	PO1 Essential Domain Knowledge	PO2 Creative and critical thinking and problem solving abilities	PO3 Communication Skills and Team Work	PO4 Digital Capabilities	PO5 Social Responsibilities, Ethical and Environmental Competency	PO6 Employability and Research related Skills	PO7 Life-Long Learning	PSO1	PSO2	PSO3
CO1	3	3	3	3	---	3	3	3	3	3
CO2	3	3	3	3	1	3	3	3	3	3
CO3	3	3	3	3	--	3	3	3	3	3
CO4	3	3	3	3	--	3	3	3	3	3
Average	3	3	3	3	1	3	3	3	3	3

OVER ALL AVERAGE BETWEEN COS & POS =2.71   **OVER ALL AVERAGE BETWEEN COS & PSOS =3**

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II YEAR – BSC – III SEMESTER – COURCE– C3 - THEORY

	MAPPING(COs & POs)							MAPPING(COs & PSOs)		
	PO1 Essential Domain Knowledge	PO2 Creative and critical thinking and problem solving abilities	PO3 Communication Skills and Team Work	PO4 Digital Capabilities	PO5 Social Responsibilities, Ethical and Environmental Competency	PO6 Employability and Research related Skills	PO7 Life-Long Learning	PSO1	PSO2	PSO3
CO1	3	2	3	3	--	3	3	3	3	3
CO2	3	2	3	3	1	3	3	3	3	3
CO3	3	3	3	3	--	3	3	3	3	3
CO4	3	3	3	3	--	3	3	3	3	3
C05	3	3	3	3	1	2	3	3	3	3
Ave rage	3	2.6	3	3	1	2.8	3	3	3	3

OVER ALL AVERAGE BETWEEN COS & POS = 2.62   **OVER ALL AVERAGE BETWEEN COS & PSOS =3**

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II YEAR – BSC– IV SEMESTER – COURCE– C4 - THEORY

	MAPPING(COs & POs)							MAPPING(COs & PSOs)		
	PO1 **Essential Domain Knowledge**	PO2 **Creative and critical thinking and problem solving abilities**	PO3 **Communication Skills and Team Work**	PO4 **Digital Capabilities**	PO5 **Social Responsibilities, Ethical and Environmental Competency**	PO6 **Employability and Research related Skills**	PO7 **Life-Long Learning**	PSO1	PSO2	PSO3
CO1	3	3	3	3	1	2	3	3	3	3
CO2	3	3	2	3	--	3	3	3	3	3
CO3	3	3	3	3	2	3	3	3	3	3
CO4	3	3	3	3	--	3	3	3	3	3
CO5	3	3	3	3	3	3	3	3	3	3
CO6	3	3	3	3	--	3	3	3	3	3
Average	3	3	2.8	3	2	2.8	3	3	3	3

OVER ALL AVERAGE BETWEEN COS & POS = 2.8   **OVER ALL AVERAGE BETWEEN COS & PSOS = 3**

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II YEAR – BSC – IV SEMESTER – COURCE– C5 - THEORY

&	MAPPING(COs & POs)							MAPPING(COs & PSOs)		
	PO1 Essential Domain Knowledge	PO2 Creative and critical thinking and problem solving abilities	PO3 Communication Skills and Team Work	PO4 Digital Capabilities	PO5 Social Responsibilities, Ethical and Environmental Competency	PO6 Employability and Research related Skills	PO7 Life-Long Learning	PSO1	PSO2	PSO3
CO1	3	3	2	3	--	2	3	3	3	1
CO2	3	3	3	2	--	--	3	3	3	2
CO3	3	3	3	2	--	--	3	3	3	2
CO4	3	3	3	--	--	--	3	3	3	1
Average	3	3	2.75	2.3	--	2	3	3	3	1.5

OVER ALL AVERAGE BETWEEN COS & POS =2.67   **OVER ALL AVERAGE BETWEEN COS & PSOS = 2.5**

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III YEAR – BSC– VSEMESTER – COURCE– C6 - THEORY

&	MAPPING(COs & POs)							MAPPING(COs & PSOs)		
	PO1 Essential Domain Knowledge	PO2 Creative and critical thinking and problem solving abilities	PO3 Communication Skills and Team Work	PO4 Digital Capabilities	PO5 Social Responsibilities, Ethical and Environmental Competency	PO6 Employability and Research related Skills	PO7 Life-Long Learning	PSO1	PSO2	PSO3
CO1	3	3	3	3	--	1	2	3	2	3
CO2	3	3	3	3	---	3	3	3	3	3
CO3	3	3	3	3	1	2	3	3	3	3
CO4	3	3	3	3	1	2	3	3	3	3
CO5	3	3	3	3	--	3	3	3	3	3
Ave rage	3	3	3	3	1	2.2	2.8	3	2.8	3

OVER ALL AVERAGE BETWEEN COS & POS = 2.57   **OVER ALL AVERAGE BETWEEN COS & PSOS = 2.93**

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III YEAR – BSC – V SEMESTER – COURCE– C7 - THEORY

&	MAPPING(COs & POs)							MAPPING(COs & PSOs)		
	PO1 Essential Domain Knowledge	PO2 Creative and critical thinking and problem solving abilities	PO3 Communication Skills and Team Work	PO4 Digital Capabilities	PO5 Social Responsibilities, Ethical and Environmental Competency	PO6 Employability and Research related Skills	PO7 Life-Long Learning	PSO1	PSO2	PSO3
CO1	3	3	3	3	--	1	2	3	2	3
CO2	3	3	3	3	---	3	3	3	3	3
CO3	3	3	3	3	1	2	3	3	3	3
CO4	3	3	3	3	1	2	3	3	3	3
Ave rage	3	3	3	3	1	2	2.75	3	2.75	3

OVER ALL AVERAGE BETWEEN COS & POS =2.6   **OVER ALL AVERAGE BETWEEN COS & PSOS = 2.4**

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III YEAR – BSC– THEORY

Course Code	MAPPING (COs & POs)							MAPPING (COs & PSOs)		
	PO1 Essential Domain Knowledge	PO2 Creative and critical thinking and problem solving abilities	PO3 Communication Skills and Team Work	PO4 Digital Capabilities	PO5 Social Responsibilities, Ethical and Environmental Competency	PO6 Employability and Research related Skills	PO7 Life-Long Learning	PSO1	PSO2	PSO3
C1	3	3	3	3	--	2	3	3	3	3
C2	3	3	3	1	3	3	3	3	3	3
C3	3	2.6	3	3	1	2.8	3	3	3	3
C4	2	3	2.8	3	2	2.8	3	3	3	3
C5	3	3	2.75	2.3	--	2	3	3	3	1.5
C6	3	3	3	3	1	2.2	2.8	3	2.8	3
C7	3	3	3	3	1	2	2.75	3	2.75	3
AVERAGE	2.9	2.98	2.82	2.83	1.6	2.35	2.99	2.89	2.69	2.87

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PRACTICALS

Sl. No	Semester	Course Code	Course Title		Course Outcomes(Cos)	Program Outcomes (POs)	Program Specific Outcomes (PSOs)
1	**I**	C1	Problem solving in c	CO1	Write, compile and debug programs in C language.	PO1, PO2, PO3, PO4, PO6,PO7.	PSO1, PSO2, PSO3.
				CO2	Implement different data types in a computer program	PO1, PO2, PO3, PO4, PO6,PO7.	PSO1, PSO2, PSO3.
				CO3	Design programs involving decision structures, loops and functions	PO1, PO2, PO3, PO4, PO6,PO7.	PSO1, PSO2, PSO3.
				CO4	Write simple programs on pointers and Structures.	PO1, PO2, PO3, PO4, PO6,PO7.	PSO1, PSO2, PSO3.
				CO5	Write operations in File handling.	PO1, PO2, PO3, PO4, PO6,PO7	PSO1, PSO2, PSO3.
2	**II**	C2	DATA STRUCTURES	CO1	Implement data structures suitable for liner & non liner structures.	PO1, PO2, PO3, PO4, PO6, PO7.	PSO1, PSO2, PSO3..
				CO2	Design a program on linear Data structures.	PO1, PO2, PO3, PO4, PO5, PO6, PO7.	PSO1, PSO2, PSO3.
				CO3	Write simple programs on different sorting & searching techniques.	PO1, PO2, PO3, PO4, PO6,PO7.	PSO1, PSO2, PSO3.
3	**III**	C3	DATA BASE MANAGEMENT SYSTEM	CO1	Create a small database using SQL.	PO1, PO2, PO3, PO4, PO6,PO7.	PSO1, PSO2, PSO3.
				CO2	Write commands on SQL queries to Store, Retrieve data in database	PO1, PO2, PO3,	PSO1, PSO2,

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						PO4, PO6, PO7.	PSO3.
				CO3	Draw the ER Diagrams and design database schemas based on the model	PO1, PO2, PO3, PO4, PO5, PO6, PO7.	PSO1, PSO2, PSO3.
4	IV	C4	OBJECT ORIENTED PROGRAMMI NG THROUGH JAVA	CO1	Develop problem-solving and programming skills using OOP concept	PO1, PO2, PO3, PO4, PO5, PO6, PO7.	PSO1, PSO2, PSO3.
				CO2	Design a well structured program .	PO1, PO2, PO3, PO4, PO6,PO7.	PSO1, PSO2, PSO3.
				CO3	Develop the ability to solve real-world problems through software development in high-level programming language like Java	PO1, PO2, PO3, PO4, PO5, PO6, PO7.	PSO1, PSO2, PSO3.
				CO4	Develop efficient Java applets and applications using OOP concept	PO1, PO2, PO3, PO4, PO6,PO7.	PSO1, PSO2, PSO3.
5	IV	C5	OPERATING SYSTEM	CO1	Design Process Management & CPU Scheduling Techniques.	PO1, PO2, PO3, PO4, PO7.	PSO1, PSO2, PSO3.
				CO2	Write CPU Management techniques in distributed systems.	PO1, PO2, PO3, PO4, PO7.	PSO1, PSO2, PSO3.
				CO3	Apply different techniques for Preventing Deadlocks in a Computer System.	PO1, PO2, PO3, PO7.	PSO1, PSO2, PSO3.
6.	V	C6	WEB INTERFACE DESIGNING TECHNOLOGI ES	CO1	To Write latest web technologies and tools by conducting experiments	PO1, PO2, PO3, PO4, PO6,PO7.	PSO1, PSO2, PSO3.
				CO2	To design interactive web pages using HTML and Style sheets.	PO1, PO2, PO3, PO4, PO5, PO6, PO7.	PSO1, PSO2, PSO3.

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				CO3	To framework and building blocks of Integrated Development Environment	PO1, PO2, PO3, PO4, PO5, PO6, PO7.	PSO1, PSO2, PSO3.
.7	V	C7	WEB APPLICATION DESIGNING WITH PHP &MYSQL	CO1	Write a simple program in PHP	PO1, PO2, PO3, PO4, PO6,PO7.	PSO1, PSO2, PSO3.
				CO2	Write simple programs on handle and validate data using PHP	PO1, PO2, PO3, PO4, PO6,PO7.	PSO1, PSO2, PSO3.
				CO3	Write programs to create dynamic &interactive web based applications using PHP & MYSQL.	PO1, PO2, PO3, PO4, PO5, PO6, PO7.	PSO1, PSO2, PSO3.
8	VI		LONG TERM INTERNSHIP PROJECT	CO1	Analyze and interpret and take appropriate decisions in solving real life problems using statistical tools.	PO1, PO2, PO3, PO4, PO5, PO6, PO7.	PSO1, PSO2, PSO3.
				CO2	Use different Statistical packages for graphical interface, data analysis and interpretation	PO1, PO2, PO3, PO4, PO5, PO6, PO7.	PSO1, PSO2, PSO3.
				CO3	Write a systematic Statistical project report.	PO1, PO2, PO3, PO4, PO5, PO6, PO7.	PSO1, PSO2, PSO3.

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I YEAR – BSC – I SEMESTER – COURCE– C1 - PRACTICAL

	MAPPING(COs & POs)							MAPPING(COs & PSOs)		
	PO1 Essential Domain Knowledge	PO2 Creative and critical thinking and problem solving abilities	PO3 Communication Skills and Team Work	PO4 Digital Capabilities	PO5 Social Responsibilities, Ethical and Environmental Competency	PO6 Employability and Research related Skills	PO7 Life-Long Learning	PSO1	PSO2	PSO3
CO1	3	3	3	3	--	2	3	3	3	3
CO2	3	3	3	3	--	2	3	3	3	3
CO3	3	3	3	3	--	2	3	3	3	3
CO4	3	3	3	3	--	2	3	3	3	3
CO5	3	3	3	3	--	2	3	3	3	3
Ave rage	3	3	3	3	--	2	3	3	3	3

OVER ALL AVERAGE BETWEEN COS & POS = 2.8   **OVER ALL AVERAGE BETWEEN COS & PSOS = 3**

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I YEAR – BSC – II SEMESTER – COURCE– C2 - PRACTICAL

&	MAPPING(COs & POs)							MAPPING(COs & PSOs)		
	PO1 Essential Domain Knowledge	PO2 Creative and critical thinking and problem solving abilities	PO3 Communication Skills and Team Work	PO4 Digital Capabilities	PO5 Social Responsibilities, Ethical and Environmental Competency	PO6 Employability and Research related Skills	PO7 Life-Long Learning	PSO1	PSO2	PSO3
CO1	3	3	3	3	---	3	3	3	3	3
CO2	3	3	3	3	--	3	3	3	3	3
CO3	3	3	3	3	--	3	3	3	3	3
Ave rage	3	3	3	3	----	3	3	3	3	3

OVER ALL AVERAGE BETWEEN COS & POS = 2.71   **OVER ALL AVERAGE BETWEEN COS & PSOS =3**

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II YEAR – BSC – III SEMESTER – COURCE– C3 - PRACTICAL

		MAPPING(COs & POs)						MAPPING(COs & PSOs)		
	PO1 Essential Domain Knowledge	PO2 Creative and critical thinking and problem solving abilities	PO3 Communication Skills and Team Work	PO4 Digital Capabilities	PO5 Social Responsibilities, Ethical and Environmental Competency	PO6 Employability and Research related Skills	PO7 Life-Long Learning	PSO1	PSO2	PSO3
CO1	3	3	3	3	--	3	3	3	3	3
CO2	3	3	3	3	--	3	3	3	3	3
CO3	3	3	3	3	1	2	3	3	3	3
Average	3	3	3	3	1	2.6	3	3	3	3

OVER ALL AVERAGE BETWEEN COS & POS =2.65   **OVER ALL AVERAGE BETWEEN COS & PSOS =3**

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II YEAR – BSC– IV SEMESTER – COURCE– C4 - PRACTICAL

	MAPPING(COs & POs)							MAPPING(COs & PSOs)		
	PO1 **Essential Domain Knowledge**	PO2 **Creative and critical thinking and problem solving abilities**	PO3 **Communication Skills and Team Work**	PO4 **Digital Capabilities**	PO5 **Social Responsibilities, Ethical and Environmental Competency**	PO6 **Employability and Research related Skills**	PO7 **Life-Long Learning**	PSO1	PSO2	PSO3
CO1	3	3	3	3	2	3	3	3	3	3
CO2	3	3	3	3	--	3	3	3	3	3
CO3	3	3	3	3	3	3	3	3	3	3
CO4	3	3	3	3	--	3	3	3	3	3
Average	3	3	3	3	2.5	3	3	3	3	3

OVER ALL AVERAGE BETWEEN COS & POS =2.9   **OVER ALL AVERAGE BETWEEN COS & PSOS = 3**

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II YEAR – BSC – IV SEMESTER – COURCE– C5 - PRACTICAL

	MAPPING(COs & POs)							MAPPING(COs & PSOs)		
	PO1 **Essential Domain Knowledge**	PO2 **Creative and critical thinking and problem solving abilities**	PO3 **Communication Skills and Team Work**	PO4 **Digital Capabilities**	PO5 **Social Responsibilities, Ethical and Environmental Competency**	PO6 **Employability and Research related Skills**	PO7 **Life-Long Learning**	PSO1	PSO2	PSO3
CO1	3	3	3	2	--	--	3	3	3	2
CO2	3	3	3	2	--	--	3	3	3	2
CO3	3	3	3	--	--	--	3	3	3	2
Average	3	3	3	2	---	---	3	3	3	2

OVER ALL AVERAGE BETWEEN COS & POS = 2.8   **OVER ALL AVERAGE BETWEEN COS & PSOS = 2.6**

Levels : 1 = L1- Remembering   2 = L2- Understanding & L3- Applying   3 = L4-Analyzing, L5-Evaluating & L6-Creating

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III YEAR – BSC– V SEMESTER – COURCE– C6 - PRACTICAL

	MAPPING(COs & POs)							MAPPING(COs & PSOs)		
	PO1 Essential Domain Knowledge	PO2 Creative and critical thinking and problem solving abilities	PO3 Communication Skills and Team Work	PO4 Digital Capabilities	PO5 Social Responsibilities, Ethical and Environmental Competency	PO6 Employability and Research related Skills	PO7 Life-Long Learning	PSO1	PSO2	PSO3
CO1	3	3	3	3	1	2	3	3	3	3
CO2	3	3	3	3	1	2	3	3	3	3
CO3	3	3	3	3	--	3	3	3	3	3
Average	3	3	3	3	1	2.3	3	3	3	3

OVER ALL AVERAGE BETWEEN COS & POS = 2.61   **OVER ALL AVERAGE BETWEEN COS & PSOS = 3**

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III YEAR – BSC – V SEMESTER – COURCE– C7 - PRACTICAL

	MAPPING(COs & POs)							MAPPING(COs & PSOs)		
	PO1 Essential Domain Knowledge	PO2 Creative and critical thinking and problem solving abilities	PO3 Communication Skills and Team Work	PO4 Digital Capabilities	PO5 Social Responsibilities, Ethical and Environmental Competency	PO6 Employability and Research related Skills	PO7 Life-Long Learning	PSO1	PSO2	PSO3
CO1	3	3	3	3	---	3	3	3	3	3
CO2	3	3	3	3	1	2	3	3	3	3
CO3	3	3	3	3	1	2	3	3	3	3
Ave rage	3	3	3	3	1	2.3	3	3	3	3

OVER ALL AVERAGE BETWEEN COS & POS = 2.6   **OVER ALL AVERAGE BETWEEN COS & PSOS = 3**

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III YEAR – BSC– PRACTICALS

Course Code	MAPPING (COs & POs)							MAPPING (COs & PSOs)		
	PO1 Essential Domain Knowledge	PO2 Creative and critical thinking and problem solving abilities	PO3 Communication Skills and Team Work	PO4 Digital Capabilities	PO5 Social Responsibilities, Ethical and Environmental Competency	PO6 Employability and Research related Skills	PO7 Life-Long Learning	PSO1	PSO2	PSO3
C1	3	3	3	3	--	2	3	3	3	3
C2	3	3	3	3	----	3	3	3	3	3
C3	3	3	3	3	1	2.6	3	3	3	3
C4	3	3	3	3	2.5	3	3	3	3	3
C5	3	3	3	2	---	---	3	3	3	2
C6	3	3	3	3	1	2.3	3	3	3	3
C7	3	3	3	3	1	2.3	3	3	3	3
AVERAGE	**3**	**3**	**3**	**2.8**	**1.3**	**2.5**	**3**	**3**	**3**	**2.8**

DEPARTMENT OF BIOTECHNOLOGY

MICROBIOLOGY-THEORY

S.No	Semester	Course Code	Course Title	Course Outcomes(Cos)		Program Outcomes (POs)	Program Specific Outcomes (PSOs)
1	I	MCB1SK	Introduction to microbiology and microbial Diversity	CO1	Explain the evolution of the microbiology field and the scientific discoveries relating to each field.	PO1,PO2,PO3, PO4,PO6,PO7	PSO1, PSO2,PO3
				CO2	Summerize the techniques used to stain and observe the microorganisms under microscope	PO1,PO2,PO3, PO4,PO6	PSO1, PSO2,PO3
				CO3	Discuss the History , milestones of Microbiology	PO1,PO3,PO4' PO6,PO7	PSO1,PSO3
				CO4	Demonstarte different isolation ,preservation techniques	PO2,PO3,PO4, PO6,PO7	PSO1,

								PSO2,PO3
				CO5	Analyse the Ultrastructure of Prokaroyotic cell		PO1,PO2PO3, PO5PO2	PSO2 PSO3
2	II	MCB2SK	Microbial physiology and Biochemisty	CO1	Evaluate the roles of different biomolecules in a microbial cell		PO1,PO2,PO3	PSO1, PSO2
				CO2	Analysis the Biomolecule separation techniques: chromatography, gel electrophoresis, spectrophotometry		PO2, PO3, PO6	PSO2 PSO3
				CO3	Illustrate, differentiate and contrast between the structures of DNA and also discuss the DNA replication process		PO1,PO2,PO3,	PSO1, PSO2
				CO4	Explain the different metabolic pathways used by the microorganisms		PO1, PO2	PSO1, PSO2
				CO5	Describe the properties ,structure,function of enzymes		PO1,PO3	PSO1, PSO3
3	III	MCB3SK	Medical Microbiology and immunology	CO1	Differentiate between different types pathogenic organisms, and explain in details pathogenicity, diagnosis of pathogenic organisms		PO1,PO2,PO3, PO4,PO5,PO6	PSO1, PSO2
				CO2	Interpret the possible suggested preventive and treatment methods		PO1,PO2,PO3, PO4,PO5,PO6, PO7	PSO1, PSO2

				CO3	Explain various chemotherapeutic agents and their mode of actions and general account of various communicable diseases and their preventive methods	PO1,PO2,PO3, PO4,PO5'PO6, PO7	PSO1, PSO2
				CO4	Illustrate the basic concepts of different types of immunity and different cells and organs involved in combating pathogens	PO1,PO2,PO3, PO4,PO5,PO7	PSO1, PSO2
				CO5	Demonstrate the different types of antigen-antibody interactions and their application in diagnosing different infections	PO1,PO2,PO3, PO4,PO5'PO6, PO7	PSO1, PSO2, PSO3
4	IV	MCB4SKA	Industrial Microbiology	CO1	summarize the importance of industrially used microbes and screening techniques used, various methods stain improvement for microbial products	PO1,PO2, PO4,PO6, PO7	PSO1, PSO3
				CO2	Demonstrate the various types of fermentation process design of fermentor	PO1,PO2, PO3'PO4,PO6, PO7	PSO1, PSO2, PSO3
				CO3	Apply the industrial micro organisms involved in various industries	PO2,PO4,PO6, PO7	PSO3, PSO2
				CO4	Analyze the given pharmaceutical products for its sterility, Microbiological determine the potency of the products like antibiotics and vitamins	PO1,PO3,PO5, PO6,PO7	PSO3, PSO2
				CO5	Explain the importance of sterilization in Fermentation process and deferent sterilization methods`	PO1,PO2PO3, PO6,PO7	PSO1, PSO2,PO3

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5	IV	MCB4SKB	Molecular Biology & Microbial Genetics	CO1	Design experiments to perform DNA & RNA as Genetic material	PO1,PO4,PO6, PO7	PSO1, PSO2,PO3
				CO2	Summarize the chemical reactions leading to DNA damage	PO1,PO3,PO4 PO5,PO7	PSO1,PSO2 , PSO3
				CO3	Determine the modes of genetic recombination in bacteria	PO1,PO2,PO4,	PSO1,PSO2 , PSO3
				CO4	Explain the Structure,regulation of Lacoperon with gene expression in bacteria	PO1, PO4,	PSO2,PSO3
				CO5	Discuss the concept of Molecular biology types of RNA & protein synthesis in prokaryotes & Eukaryotes	PO1,PO3,PO2, PO4	PSO1,PSO2 , PSO3
6	V	MCB5SKA	Food agricultural & environmental microbiology	CO1	Explain the parameters that induce spoilage and process of intoxication in food borne diseases	PO1,PO4,PO6, PO7	PSO1, PSO2,PSO3
				CO2	Analysis the Methods of food preservation	PO1,PO2,PO3, PO7	PSO1,PSO2 , PSO3
				CO3	Develop knowledge on Role of microorganisms in production of fermented foods and probiotics	PO1,PO2,PO4, PO6,PO7	PSO1,PSO2 , PSO3
				CO4	Apply Skills in isolation of *Rhizobium* & other microflora from rhizosphere & rhizoplane	PO4PO5,PO6,	PSO2, PSO3
				CO5	Outlines of Role of microorganisms in degradation of solid/liquid wastes	PO1,PO3,PO2, PO5,PO7	PSO2, PSO3
7	V	MCB5SKB	Management of human microbial	CO1	Illustrate the data obtained from biochemical analyses of samples such as whole blood, serum, urine etc. with clinical symptoms and possible	PO1,PO2,PO3, PO4,PO6,	PSO1,PSO2 , PSO3

			disease and diagnsosis		pathologies		
				CO2	Apply the Methods & transport of clinical samples to Laboratory,storage	PO1,PO4,PO6,	PSO1,PSO2, PSO3
				CO3	Analyse the infected blood samples by using Gram Staining procedures	PO1,PO2,PO3 PO4,PO5,PO7	PSO1,PSO2, PSO3
				CO4	Demonstrate different types of antigen-antibody interactions and their application in diagnosing different infections	PO1,PO2,PO3, PO4, PO6,PO7	PSO1,PSO2, PSO3
				CO5	Determine the Drug Resistance in Bacteria	PO6	PSO1,PSO2, PSO3
8	VIII	Project		CO1	Explore career alternative prior to graduation.	PO2, PO6	PSO3
				CO2	Develop work habits and attitudes necessary for job success.	PO3,PO4, PO6	PSO2, PSO3
				CO3	Assess interests and abilities in their field of study.	PO2, PO6	PSO3

I YEAR – MBC – I SEMESTER – PAPER – I - THEORY

	MAPPING(COs & POs)							MAPPING(COs & PSOs)		
	PO1 Essential Domain Knowledge	PO2 Creative and critical thinking and problem solving abilities	PO3 Communication Skills and Team Work	PO4 Digital Capabilities	PO5 Social Responsibilities, Ethical and Environmental Competency	PO6 Employability and Research related Skills	PO7 Life-Long Learning	PSO1	PSO2	PSO3
CO1	3	2	3	3	-	2	3	3	1	2
CO2	3	3	3	3	-	2	-	3	3	2
CO3	3	-	1	1	-	1	1	3	-	3
CO4	-	3	1	3	-	3	3	3	3	2
CO5	2	2	3	-	2	3	-		2	2
Average	**2.75**	**2.5**	**2.75**	**2.5**	**2**	**2.25**	**2.33**	**3**	**2.5**	**2.75**

OVER ALL AVERAGE BETWEEN COS & POS = 2.5

OVER ALL AVERAGE BETWEEN COS & PSOS = 2.75

I YEAR – MBC – II SEMESTER – PAPER – II– THEORY

	MAPPING(COs & PSOs)									
	PO1 **Essential Domain Knowledge**	PO2 **Creative and critical thinking and problem solving abilities**	PO3 **Communication Skills and Team Work**	PO4 **Digital Capabilities**	PO5 **Social Responsibilities, Ethical and Environmental Competency**	PO6 **Employ ability and Resear ch related Skills**	PO7 **Life-Long Learn ing**	**PSO1**	**PSO2**	**PSO3**
CO1	-	3	2	-	-	3	-	2	3	-
CO2	3	3	1	3	-	-	-		3	2
CO3	3	2	2	-	-	-	2	3	2	3
CO4	3	2	3	-	-	-	2	3	2	-
CO5	3	-	1	-	-	-	-	3	-	2
Average	**3**	**2.5**	**2.25**	**3**	**-**	**3**	**2.51**	**2.75**	**2.5**	**2.33**

OVER ALL AVERAGE BETWEEN COS & POS = 2.71
OVER ALL AVERAGE BETWEEN COS & PSOS = 2.52

II YEAR – MBC – III SEMESTER – PAPER-III – THEORY

	MAPPING(COs & PSOs)									
	PO1 Essential Domain Knowledge	PO2 Creative and critical thinking and problem solving abilities	PO3 Communication Skills and Team Work	PO4 Digital Capabilities	PO5 Social Responsibilities, Ethical and Environmental Competency	PO6 Employability and Research related Skills	PO7 Life-Long Learning	PSO1	PSO2	PSO3
CO1	3	3	1	3	-	3	-	2	3	-
CO2	3	2	3	2	-	3	3	3	3	-
CO3	3	3	3	3	2	3	3	3	3	-
CO4	3	3	2	1	2	-	2	3	2	-
CO5	2	2	2	3	3	3	2	2	3	3
Average	**3**	**2.6**	**2.75**	**2.75**	**2.3**	**3**	**2.5**	**2.6**	**2.8**	**3**

OVER ALL AVERAGE BETWEEN COS & POS = 2.65

OVER ALL AVERAGE BETWEEN COS & PSOS = 2.8

II YEAR – MBC – IV SEMESTER – PAPER- IV- THEORY

	MAPPING(COs & PSOs)									
	PO1 Essential Domain Knowledge	PO2 Creative and critical thinking and problem solving abilities	PO3 Communication Skills and Team Work	PO4 Digital Capabilities	PO5 Social Responsibilities, Ethical and Environmental Competency	PO6 Employability and Research related Skills	PO7 Life-Long Learning	PSO 1	PSO2	PSO3
CO1	3	3	-	2	-	3	-	2	-	2
CO2	2	2	-	2	3	3	-	2	3	3
CO3	3	3	-	3	-	3	-	-	3	3
CO4	2	3	3	-	2	3	2	-	3	3
CO5	3	2	2	-	-	3	2	3	2	2
Average	2.6	2.6	2.5	2.33	2.5	3	2	2.33	2.75	2.6

OVER ALL AVERAGE BETWEEN COS & POS = 2.50

OVER ALL AVERAGE BETWEEN COS & PSOS = 2.44

II YEAR – MBC – IV SEMESTER – PAPER- V- THEORY

	MAPPING(COs & PSOs)									
	PO1 Essential Domain Knowledge	PO2 Creative and critical thinking and problem solving abilities	PO3 Communication Skills and Team Work	PO4 Digital Capabilities	PO5 Social Responsibilities, Ethical and Environmental Competency	PO6 Employability and Research related Skills	PO7 Life-Long Learning	PSO1	PSO2	PSO3
CO1	3	2	-	3	-	3	3	3	3	1
CO2	3	-	2	-	2	-	2	2	2	3
CO3	3	3	-	2	-	3	2	-	3	2
CO4	3	-	-	2	-	-	-	-	2	3
CO5	3	3	2	-	-	-	2	2	1	2
Average	**3**	**3**	**2**	**2.33**	**2**	**3**	**2.25**	**2.5**	**2.75**	**2.75**

OVER ALL AVERAGE BETWEEN COS & POS = 2.51

OVER ALL AVERAGE BETWEEN COS & PSOS = 2.33

III YEAR – MBC– V SEMESTER – PAPER- VI– THEORY

	MAPPING(Cos & PSOs)									
	PO1 **Essential Domain Knowledge**	PO2 **Creative and critical thinking and problem solving abilities**	PO3 **Communication Skills and Team Work**	PO4 **Digital Capabilities**	PO5 **Social Responsibilities, Ethical and Environmental Competency**	PO6 **Employability and Research related Skills**	PO7 **Life-Long Learning**	PSO1	PSO2	PSO3
CO1	3	-	-	2	2	3	2	3	3	1
CO2	2	-	3	2	-	-	3	2	3	2
CO3	3	3	-	2	2	3	3	2	2	3
CO4	-	2	-	3	3	3	-	-	3	3
CO5	3	2	3	-	3	2	2	3	2	2
Average	**2.75**	**2.33**	**3**	**2.25**	**2.5**	**2.75**	**2.5**	**2.5**	**2.6**	**2.75**

OVER ALL AVERAGE BETWEEN COS & POS = 2.6

OVER ALL AVERAGE BETWEEN COS & PSOS = 2.6

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III YEAR – MBC – V SEMESTER – PAPER- VII- THEORY

	MAPPING(Cos & PSOs)									
	PO1 Essential Domain Knowledge	PO2 Creative and critical thinking and problem solving abilities	PO3 Communication Skills and Team Work	PO4 Digital Capabilities	PO5 Social Responsibilities, Ethical and Environmental Competency	PO6 Employability and Research related Skills	PO7 Life-Long Learning	PSO1	PSO2	PSO3
CO1	3	3	2	3	-	3	2	2	3	3
CO2	3	2	2	3	2	3	2	2	3	3
CO3	2	3	2	3	1	-	2	2	3	3
CO4	3	3	3	3	2	3	2	2	3	3
CO5	-	2	2	3	-	3	2	2	3	2
Average	**2.75**	**2.6**	**2.75**	**3**	**1.66**	**3**	**2**	**2**	**3**	**2.8**

OVER ALL AVERAGE BETWEEN COS & POS = 2.53
OVER ALL AVERAGE BETWEEN COS & PSOS = 2.61

III YEAR – MBC – VI SEMESTER – PAPER- VIII- PROJECT

	MAPPING(Cos & PSOs)									
	PO1 Essential Domain Knowledge	PO2 Creative and critical thinking and problem solving abilities	PO3 Communication Skills and Team Work	PO4 Digital Capabilities	PO5 Social Responsibilities, Ethical and Environmental Competency	PO6 Employability and Research related Skills	PO7 Life-Long Learning	PSO1	PSO2	PSO3
CO1	-	3	-	-	-	3	-	-	3	3
CO2	-	-	3	3	-	3	-	-	3	3
CO3	-	3	-	-	-	3	-	-	3	3
Average	**-**	**3**	**3**	**3**	**-**	**3**	**-**	**-**	**3**	**3**

OVER ALL AVERAGE BETWEEN COS & POS = 3
OVER ALL AVERAGE BETWEEN COS & PSOS = 3

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III YEAR – MBC – MICROBIOLOGY- THEORY

Cos	MAPPING (Cos & Pos)							MAPPING (Cos & PSOs)		
	PO1 Essential Domain Knowledge	PO2 Creative and critical thinking and problem solving abilities	PO3 Communication Skills and Team Work	PO4 Digital Capabilities	PO5 Social Responsibilities, Ethical and Environmental Competency	PO6 Employability and Research related Skills	PO7 Life-Long Learning	PSO 1	PSO 2	PSO 3
MCB1SK	2.75	2.5	2.75	2.5	2	2.25	2.33	3	2.5	2.75
MCB2SK	3	2.5	2.25	3	-	3	2.51	2.75	2.5	2.33
MCB3SK	3	2.6	2.75	2.75	2.3	3	2.5	2.6	2.8	3
MCB4SKA	2.6	2.6	2.5	2.33	2.5	3	2	2.33	2.75	2.6
MCB4SKB	3	3	2	2.33	2	3	2.25	2.5	2.75	2.75
MCB5SKA	2.75	2.33	3	2.25	2.5	2.75	2.5	2.5	2.6	2.75
MCB5SKB	2.75	2.6	2.75	3	1.66	3	2	2	3	2.8
PROJECT	-	3	3	3	-	3	-	-	3	3
Average	2.83	2.64	2.62	2.64	2.16	2.87	2.29	2.52	2.73	2.74

OVER ALL AVERAGE BETWEEN COS & POS =   2.57
OVER ALL AVERAGE BETWEEN COS & PSOS = 2.66

MICROBIOLOGY-PRACTICAL

S.No	Semester	Course Code	Course Title	Course Outcomes(Cos)		Program Outcomes (POs)	Program Specific Outcomes (PSOs)
1	I	MCB1SK	Introduction to microbiology and microbial Diversity	CO1	Demonstrate the basic instruments & their operation	PO1,PO4,PO6 PO7	PSO1,PSO2,PSO3
				CO2	Examine the process of staining techniques	PO1,PO2,PO3 PO4,PO6,PO7	PSO1,PSO2,PSO3
				CO3	Preparation of different types of culture media.	PO1,PO2,PO4, PO6,PO7	PSO1,PSO2,PSO3
				CO4	Isolation of bacteria by using pure culture techniques.	PO1,PO2,PO3, PO4,PO6,PO7	PSO1,PSO2,PSO3
				CO5	Examine the Gram positive and Gram negative Bacteria.	PO1,PO2,PO3, PO4,PO6,PO7	PSO1,PSO2,PSO3
2	II	MCB2SK	Microbial physiology and Biochemisty	CO1	Qualitative Analysis of Carbohydrates & aminoacids	PO1,PO2,PO3, PO6,PO7	PSO1,PSO2,PSO3
				CO2	Estimation of DNA & RNA by diphenyl & oricinol method	PO1,PO2,PO3, PO6,PO7	PSO1,PSO2,PSO3
				CO3	Estimation of reducing sugar- anthrone method	PO1,PO2,PO3, PO6,PO7	PSO1,PSO2,PSO3
				CO4	Detrermination of Pk & Pi activity of aminoacids	PO1,PO2,PO4, PO6,PO7	PSO1,PSO2,PSO3
				CO5	Demonstration of immobilization of enzyme	PO1,PO2,PO4,	PSO1,PSO2,PSO3

						activity	PO6,PO7	
3	III	MCB3SK	Medical Microbiology and immunology	CO1		Identification of human blood groups	PO1,PO2,PO3, PO4,PO6,PO7	PSO1,PSO2,PSO3
				CO2		Estimation of blood hemoglobin	PO1,PO2,PO3, PO4,PO6,PO7	PSO1,PSO2,PSO3
				CO3		Demonstration on separation on serum from blood sample	PO1,PO2,PO4, PO6,PO7	PSO1,PSO2,PSO3
				CO4		Isolation and identify the bacterial floral by skin swab method	PO1,PO2,PO3, PO6,PO7	PSO1,PSO2,PSO3
				CO5		Analyze the antibiotic resistance	PO1,PO2,PO4 PO6,PO7	PSO1,PSO2,PSO3
4	IV	MCB4SKA P	Industrial Microbiology	CO1		Formulate the Production of ethanol	PO1,PO2,PO4, PO6,PO7	PSO1, PSO2,PSO3
				CO2		Isolation of amylase producing microorganisms from soil	PO1,PO2,PO4 PO5,PO6,PO7	PSO1, PSO2,PSO3
				CO3		Estimation of ethanol	PO2,PO4,PO6, PO7	PSO1, PSO2,PSO3
				CO4		Demonstration of Fermentor	PO1,PO2,PO3, PO4,PO6 ,PO7	PSO1, PSO2,PSO3
				CO5		Analyze the growth curve of industrially microorganisms	,PO2,PO3,PO5, PO6,PO7	PSO1, PSO2,PSO3
5	IV	MCB4SKB	Molecular Biology & Microbial	CO1		Demonstrate the different types of DNA & RNA	PO1,PO2,PO4, PO6,PO7	PSO1, PSO2

				Genetics	CO2	Isolation & Identify the genomic DNA from E.coli	PO1,PO2,PO3, PO4,PO6,PO7	PSO1,PSO2, PSO3
					CO3	Estimation of DNA using UV spectrophotometer	PO1,PO2,PO3, PO4,PO6,PO7,	PSO1,PSO2, PSO3
					CO4	Detect the Mutations in bacteria by UV light	PO2,PO3,PO4, PO6,PO7,	PSO1,PSO2, PSO3
					CO5	Analyse the proteins by Gel Electrophoresis	PO2,PO3,PO4, PO6,PO7,,	PSO1,PSO2, PSO3
6	V	MCB5SKA P	Food agricultural & environmental microbiology	CO1	Isolate & identify of bacteria and fungi from spoiled fruits & vegetables	PO1,PO2,PO3, PO6,PO7	PSO1,PSO2, PSO3
				CO2	Determination of microbiological quality of milk sample by MBRT	PO1,PO2,PO3, PO4,PO7	PSO1,PSO2, PSO3
				CO3	Identification of Rhizosphere microflora from the soil	PO1,PO2,PO4, PO5,PO6,PO7	PSO1,PSO2, PSO3
				CO4	Analysis of potable water presumptive,confirmed,completed test by MPN method	PO1,PO2,PO4, PO5,PO6,PO7,	PSO1,PSO2, PSO3
				CO5	Study of airflora by petriplate exposure method	PO1,PO2,PO4, PO5,PO6,PO7	PSO1,PSO2, PSO3
7	V	MCB5SKB P	Management of human microbial disease and diagnsosis	CO1	Examine the clinical samples of Urine,puss,sputum	PO1,PO2,PO3, PO4,PO6,PO7	PSO1,PSO2, PSO3
				CO2	Demonsration of permanent slides of different parasitis	PO1,PO2,PO4, PO6,PO7,	PSO1,PSO2, PSO3
				CO3	Estimation of Haemoglobin	PO1,PO2,PO3,	PSO1,PSO2, PSO3

						PO5, PO6,PO7	
				CO4	Determination of ESR & PCV	PO1,PO2,PO4, PO6,PO7	PSO1,PSO2, PSO3
				CO5	Isolate & Identify the bacteria in pure culture	PO1,PO2,PO3, PO6,PO7	PSO1,PSO2, PSO3

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I YEAR – MBC – I SEMESTER – PAPER – I - PRACTICAL

	MAPPING(COs & POs)							MAPPING(COs & PSOs)		
	PO1 Essential Domain Knowledge	PO2 Creative and critical thinking and problem solving abilities	PO3 Communication Skills and Team Work	PO4 Digital Capabilities	PO5 Social Responsibilities, Ethical and Environmental Competency	PO6 Employability and Research related Skills	PO7 Life-Long Learning	PSO1	PSO2	PSO3
CO1	3	-	-	3	-	3	3	3	3	3
CO2	3	3	2	1	-	3	2	3	2	2
CO3	3	2	-	2	-	3	2	3	2	3
CO4	2	3	2	2	2	3	3	3	2	2
CO5	2	3	2	2	-	3	3	3	2	2
Average	**2.6**	**2.75**	**2**	**2**	**2**	**3**	**2.6**	**3**	**2.2**	**2.3**

OVER ALL AVERAGE BETWEEN COS & POS = 2.42

OVER ALL AVERAGE BETWEEN COS & PSOS = 2.5

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I YEAR – MBC – II SEMESTER – PAPER – II– PRACTICAL

	MAPPING(COs & PSOs)									
	PO1 Essential Domain Knowledge	PO2 Creative and critical thinking and problem solving abilities	PO3 Communication Skills and Team Work	PO4 Digital Capabilities	PO5 Social Responsibilities, Ethical and Environmental Competency	PO6 Employability and Research related Skills	PO7 Life-Long Learning	PSO1	PSO2	PSO3
CO1	2	3	2	-	-	3	3	2	3	3
CO2	3	3	2	-	-	3	3	3	3	2
CO3	3	2	2	-	-	3	3	3	2	3
CO4	3	3	-	2	-	2	2	3	2	2
CO5	3	3	-	3	-	3	2	3	2	2
Average	**3**	**2.4**	**2**	**2.5**	**-**	**3**	**2.6**	**3**	**2.4**	**2.4**

OVER ALL AVERAGE BETWEEN COS & POS = 2.58
OVER ALL AVERAGE BETWEEN COS & PSOS = 2.6

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II YEAR – MBC – III SEMESTER – PAPER-III – PRACTICAL

	MAPPING(COs & PSOs)									
	PO1 Essential Domain Knowledge	PO2 Creative and critical thinking and problem solving abilities	PO3 Communication Skills and Team Work	PO4 Digital Capabilities	PO5 Social Responsibilities, Ethical and Environmental Competency	PO6 Employability and Research related Skills	PO7 Life-Long Learning	PSO1	PSO2	PSO3
CO1	3	3	2	1	2	3	3	2	3	3
CO2	2	3	2	1	2	3	2	2	3	3
CO3	3	3	2	-	2	3	2	3	3	2
CO4	2	3	2	2	3	3	3	3	3	3
CO5	2	3	2	2	-	3	2	2	3	3
Average	2.4	3	2	1.5	2.25	3	2.4	2.4	3	2.8

OVER ALL AVERAGE BETWEEN COS & POS = 2.36

OVER ALL AVERAGE BETWEEN COS & PSOS = 2.73

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II YEAR – MBC – IV SEMESTER – PAPER- IV- PRACTICAL

	MAPPING(COs & PSOs)									
	PO1 Essential Domain Knowledge	PO2 Creative and critical thinking and problem solving abilities	PO3 Communication Skills and Team Work	PO4 Digital Capabilities	PO5 Social Responsibilities, Ethical and Environmental Competency	PO6 Employability and Research related Skills	PO7 Life-Long Learning	PSO 1	PSO2	PSO3
CO1	3	3	2	2	-	3	3	3	3	2
CO2	2	3	-	2	3	3	3	3	3	3
CO3	-	3	2	3	-	3	3	2	3	2
CO4	3	3	2	-	2	3	2	3	3	2
CO5	2	3	2	2	-	3	2	2	3	3
Average	**2.5**	**3**	**2**	**2.25**	**2.5**	**3**	**2.6**	**2.6**	**3**	**2.4**

OVER ALL AVERAGE BETWEEN COS & POS = 2.55

OVER ALL AVERAGE BETWEEN COS & PSOS = 2.66

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II YEAR – MBC – IV SEMESTER – PAPER- V- PRACTICAL

	MAPPING(COs & PSOs)									
	PO1 **Essential Domain Knowledge**	PO2 **Creative and critical thinking and problem solving abilities**	PO3 **Communi cation Skills and Team Work**	PO4 **Digital Capabilitie s**	PO5 **Social Responsibiliti es, Ethical and Environment al Competency**	PO6 **Employabi lity and Research related Skills**	PO7 **Life-Long Learnin g**	PSO1	PSO2	PSO3
CO1	3	2	-	2	-	3	2	3	3	2
CO2	2	3	-	2	3	3	3	3	3	3
CO3	2	3	2	-	-	3	2	3	3	2
CO4	-	3	1	2	-	2	3	3	3	3
CO5	-	2	2	-	-	3	3	2	3	2
Average	**2.33**	**2.6**	**1.66**	**2**	**3**	**3**	**2.6**	**2.8**	**3**	**2.4**

OVER ALL AVERAGE BETWEEN COS & POS = 2.45

OVER ALL AVERAGE BETWEEN COS & PSOS = 2.73

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III YEAR – MBC– V SEMESTER – PAPER- VI– PRACTICAL

	MAPPING(COs & PSOs)									
	PO1 Essential Domain Knowledge	PO2 Creative and critical thinking and problem solving abilities	PO3 Communication Skills and Team Work	PO4 Digital Capabilities	PO5 Social Responsibilities, Ethical and Environmental Competency	PO6 Employability and Research related Skills	PO7 Life-Long Learning	PSO1	PSO2	PSO3
CO1	3	3	1	-	-	3	3	3	3	2
CO2	2	3	2	2	-	3	3	2	3	3
CO3	3	3	2	2	3	3	3	3	3	3
CO4	2	2	-	3	2	3	3	2	3	3
CO5	2	2	-	3	2	3	3	3	3	3
Average	**2.4**	**2.6**	**1.66**	**2.25**	**2.33**	**3**	**3**	**2.6**	**3**	**2.8**

OVER ALL AVERAGE BETWEEN COS & POS = 2.46

OVER ALL AVERAGE BETWEEN COS & PSOS = 2.8

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III YEAR – MBC – V SEMESTER – PAPER- VII- PRACTICAL

	MAPPING(COs & PSOs)									
	PO1 Essential Domain Knowledge	PO2 Creative and critical thinking and problem solving abilities	PO3 Communication Skills and Team Work	PO4 Digital Capabilities	PO5 Social Responsibilities, Ethical and Environmental Competency	PO6 Employability and Research related Skills	PO7 Life-Long Learning	PSO1	PSO2	PSO3
CO1	3	3	2	3	-	3	3	3	3	3
CO2	3	3	2	3	-	3	3	2	-	3
CO3	2	3	1	2	-	3	3	2	3	3
CO4	3	3	-	1	-	3	2	2	3	3
CO5	3	3	2	-	-	3	3	3	3	3
Average	2.8	3	1.75	2.25	-	3	2.8	2.4	3	3

OVER ALL AVERAGE BETWEEN COS & POS = 2.6
OVER ALL AVERAGE BETWEEN COS & PSOS = 2.8

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III YEAR – MBC – MICROBIOLOGY- PRACTICAL

Cos	MAPPING (Cos & Pos)							MAPPING (Cos & PSOs)		
	PO1 Essential Domain Knowledge	PO2 Creative and critical thinking and problem solving abilities	PO3 Communication Skills and Team Work	PO4 Digital Capabilities	PO5 Social Responsibilities, Ethical and Environmental Competency	PO6 Employability and Research related Skills	PO7 Life-Long Learning	PSO 1	PSO 2	PSO 3
MCB1SKP	2.75	2.5	2.75	2.5	2	2.25	2.33	3	2.5	2.75
MCB2SKP	3	2.4	2	2.5	-	3	2.6	3	2.4	2.4
MCB3SKP	2.4	3	2	1.5	2.25	3	2.4	2.4	3	2.8
MCB4SKAP	2.5	3	2	2.25	2.5	3	2.6	2.6	3	2.4
MCB4SKBP	2.33	2.6	1.66	2	3	3	2.6	2.8	3	2.4
MCB5SKAP	2.4	2.6	1.66	2.25	2.33	3	3	2.6	3	2.8
MCB5SKBP	2.8	3	1.75	2.25	-	3	2.8	2.4	3	3
Average	**2.59**	**2.72**	**1.97**	**2.17**	**2.41**	**2.89**	**2.61**	**2.68**	**2.84**	**2.65**

OVER ALL AVERAGE BETWEEN COS & POS =   2.48
OVER ALL AVERAGE BETWEEN COS & PSOS = 2.72

DEPARTMENT OF BIOTECHNOLOGY

BIOTECHNOLOGY-THEORY

Sl. No	Semester	Course Code	Course Title		Course Outcomes(Cos)	Program Outcomes (POs)	Program Specific Outcomes (PSOs)
1	I	BTY1SK	Bio molecules and analytical techniques	CO1	Explain the basics structure, properties and functions of bio molecules.	PO1, PO2, PO4, PO6, PO7	PSO1, PSO2, PSO3
				CO2	Identify the properties of bio molecules using bio analytical techniques.	PO1, PO2, PO3, PO5, PO6, PO7	PSO1, PSO2, PSO3
				CO3	Demonstrate the working principals, and applications of different separation technique especially chromatographic, electrophoretic and centrifugation techniques.	PO1, PO2, PO3, PO4, PO5, PO7	PSO1, PSO2, PSO3
				CO4	Apply various analytical technique and using them in research area.	PO1, PO 3, PO4, PO5, PO6	PSO1, PSO2, PSO3
				CO5	Analyse the applications and limitations of different bio statistical methods	PO2, PO3, PO4, PO5, PO6, PO7	PSO1, PSO2, PSO3
2	II	BTY2SK	Microbiology Cell & Molecular biology	CO1	Discuss the concepts of microbiology, cell and molecular biology	PO1, PO4, PO5 PO6	PSO1, PSO2, PSO3
				CO2	Distinguish between different types of microbes, classification and their characterizations	PO2, PO3, PO5, PO7	PSO1, PSO2, PSO3

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				CO3	Explain structure and function of prokaryotic and eukaryotic cell organelles, cell Division.	PO1, PO2, PO3 PO4, PO5, PO6 PO7	PSO1, PSO2, PSO3
				CO4	Summarize the basics of molecular biology including DNA replication, transcription, translation and regulation of gene expression	PO1, PO2, PO3 PO4, PO6, PO7	PSO1, PSO2, PSO3
				CO5	Analyse the functional aspects of the cell at molecular level.	PO1, PO2, PO3 PO4, PO5, PO6 PO7	PSO1, PSO2, PSO3
3	III	BTY3SK	Immunology&rDNA technology	CO1	Explain the concepts of immunology and recombinant DNA technology	PO1, PO2, PO4, PO5, PO6, PO7	PSO1, PSO2, PSO3
				CO2	Outline the basics of immunology dealing cells and organs of the immune system, types of immune responses, antigen antibodyinteractions	PO2, PO3, PO4, PO5, PO6, PO7	PSO1, PSO2, PSO3
				CO3	Apply the steps involved in recombinant DNA technology.	PO1, PO2, PO3 PO4, PO6	PSO1, PSO2, PSO3
				CO4	Determine the isolation of plasmids, cloning of gene and transformation into Suitable bacteria for selection of recombinant clones	PO1, PO3, PO5 PO7	PSO1, PSO2, PSO3
				CO5	Demonstrate knowledge of various biological databases and computational tools.	PO1, PO2, PO4, PO5, PO6, PO7	PSO1, PSO2, PSO3
4	IV	BTY4SK A	Plant& Animal Biotechnology	CO1	Demonstrate the basic knowledge about plant tissue culture and animal tissue culture.	PO1, PO2, PO4, PO6	PSO1, PSO2, PSO3
				CO2	Describe the safety issues of GM crops and products in the society.	PO2, PO3, PO4, PO5,PO7	PSO1, PSO2, PSO3
				CO3	Explain Animal cell culture and different type of cell culture and application of cell Culture.	PO1, PO2, PO4, PO5, PO6, PO7	PSO1, PSO2, PSO3
				CO4	Assume artificial embryo transfer and nuclear transfer methods and applications.	PO1, PO2, PO3 PO4, PO6	PSO1, PSO2, PSO3

					CO		PO	PSO
					CO5	Influence the intellectual property rights, biosafety of genetically engineered products.	PO1, PO3, PO5, PO6, PO7	PSO1, PSO2, PSO3
5	IV	BTY4SKB	Environmental& Industrial biotechnology		CO1	Explain about environmental pollution- sources, effects and control Measures of environmental pollution	PO1, PO2, PO3 PO4, PO6, PO7	PSO1, PSO2, PSO3
					CO2	Demonstrate the treatment of wastewater and solid waste management	PO1, PO2, PO3 PO4, PO5, PO6 PO7	PSO1, PSO2, PSO3
					CO3	Find the basic concept and issues of environmental pollution biotechnological treatment to clean up polluted environments and to create valuable resources for the human society.	PO1, PO2, PO3 PO4, PO5, PO6 PO7	PSO1, PSO2, PSO3
					CO4	Illustrate knowledge about applications of Vermicomposting	PO1, PO3, PO4, PO5	PSO1, PSO2, PSO3
					CO5	Summarize The use of bio fertilizer and to train the students for self-Employment.	PO2, PO5, PO6, PO7	PSO1, PSO2, PSO3
6	V	BTY5SKE	Apiculture		CO1	Discuss the basic concepts of Apiculture	PO1, PO2, PO4, PO5, PO6, PO7	PSO1, PSO2, PSO3
					CO2	Classify the different species and races of honey bees.	PO1, PO3, PO4, PO5, PO6, PO7	PSO1, PSO2, PSO3
					CO3	Find the importance of health and hygiene in Bee keeping	PO1, PO2, PO3 PO4, PO5, PO6 PO7	PSO1, PSO2, PSO3
					CO4	Find the importance of health and hygiene in Bee keeping	PO2, PO3, PO4 PO5, PO7	PSO1, PSO2, PSO3
					CO5	Determine prospects of Api culture as self-employment venture.	PO1, PO2, PO3 PO6	PSO1, PSO2, PSO3
7	V	BTY5SKF	Pearl culture		CO1	Explain the basic concepts of Pearl culture	PO1, PO3, PO4, PO5	PSO1, PSO2, PSO3
					CO2	Apply the knowledge regarding the Anatomical and Physiological aspects of fresh water oysters.	PO1, PO2, PO3 PO4, PO5, PO6 PO7	PSO1, PSO2, PSO3

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				CO3	Develop the various types of implantation methods and pearl culture surgery techniques	PO1, PO2, PO5, PO6, PO7	PSO1, PSO2, PSO3
				CO4	Assume skill on production of pearl and its marketing for economic gain	PO1, PO2, PO3 PO4, PO6, PO7	PSO1, PSO2, PSO3
				CO5	Choose self-employment, prospects, of pearl industry .	PO2, PO3, PO4, PO5, PO6, PO7	PSO1, PSO2, PSO3
8	VIII		PROJECT	CO1	Explore career alternative prior to graduation	PO2, PO3, PO4, PO5, PO6	PSO1, PSO2, PSO3
				CO2	Develop work habits and attitudes necessary for job success	PO1, PO2, PO5, PO7	PSO1, PSO2, PSO3
				CO3	Assess interests and abilities in their field of study	PO1, PO3, PO4, PO6, PO7	PSO1, PSO2, PSO3

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BIOTECHNOLOGY - PRACTICALS

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1	I	BTY1SKP	Bio molecules and analytical techniques-Lab	CO1	Acquire knowledge in qualitative/quantitative estimation of Biomolecules	PO1, PO2, PO5, PO6	PSO1, PSO2, PSO3
				CO2	Assay of protease activity	PO1, PO2, PO3 PO4, PO5, PO6 PO7	PSO1, PSO2, PSO3
				CO3	Separation of molecules by chromatography/ electrophoresis	PO1, PO3, PO4, PO5, PO6, PO7	PSO1, PSO2, PSO3
				CO4	Estimation of nucleic acids DNA, RNA	PO2, PO3, PO4, PO5, PO6, PO7	PSO1, PSO2, PSO3
				CO5	Find values of mean, median mode	PO1, PO2, PO3 PO4, PO5, PO6 PO7	PSO1, PSO2, PSO3
24	II	BTY2SKP	Microbiology Cell & Molecular biology -Lab	CO1	Identify the bacteria from soil	PO1, PO2, PO4, PO6, PO7	PSO1, PSO2, PSO3
				CO2	Examine the process of staining techniques	PO1, PO2, PO3 PO4, PO5, PO6 PO7	PSO1, PSO2, PSO3
				CO3	Demonstrate the basic instruments and their operations	PO1, PO2, PO3 PO4, PO5, PO6 PO7	PSO1, PSO2, PSO3
				CO4	Identify the phases mitotic/meiotic cell divisions	PO1, PO2, PO3 PO4, PO5, PO6	PSO1, PSO2, PSO3

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						PO7	
				CO5	Isolation of DNA from bacteria	PO1, PO3, PO5,	PSO1, PSO2, PSO3
3	III	BTY3S KP	Immunology& rDNA technology - Lab	CO1	Determination of Blood groups	PO1, PO3, PO4, PO7	PSO1, PSO2, PSO3
				CO2	Perform the different serological tests	PO1, PO2, PO3 PO4, PO5, PO6 PO7	PSO1, PSO2, PSO3
				CO3	Isolation of plasmid DNA	PO2, PO3, PO4, PO5, PO6, PO7	PSO1, PSO2, PSO3
				CO4	Determination of process of Blotting	PO1, PO2, PO3 PO4, PO5, PO6 PO7	PSO1, PSO2, PSO3
				CO5	Determination of process of PCR	PO1, PO2, PO5, PO6	PSO1, PSO2, PSO3
4	IV	BTY4S KAP	Plant& Animal Biotechnology -Lab	CO1	Formulate the plant tissue culture media	PO1, PO3, PO4 PO5, PO7	PSO1, PSO2, PSO3
				CO2	Determination of plant cell culture, methods	PO1, PO2, PO3 PO4, PO6	PSO1, PSO2, PSO3
				CO3	Demonstration of Animal tissue culture	PO1, PO2, PO4 PO6, PO7	PSO1, PSO2, PSO3
				CO4	Find out cell count by hemocytometer	PO1,PO2, PO3, PO4, PO5	PSO1, PSO2, PSO3
				CO5	Measure ELISA	PO2, PO3, PO5 PO6, PO7	PSO1, PSO2, PSO3
5	IV	BTY4S KBP	Environmental & Industrial biotechnology -Lab	CO1	Determine the purity of potable water	PO1, PO3, PO5, PO7	PSO1, PSO2, PSO3
				CO2	Measure the hardness & alkalinity of water sample	PO1, PO2, PO4, PO5, PO6	PSO1, PSO2, PSO3

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				CO3	Identify microorganisms from soil	PO1, PO2, PO3 PO6, PO7	PSO1, PSO2, PSO3
				CO4	Formulate the production of alcohol	PO2, PO4, PO5, PO6	PSO1, PSO2, PSO3
				CO5	Estimate of citric acid	PO1, PO2, PO3 PO4, PO6, PO7	PSO1, PSO2, PSO3
6	V	BTY5S KEP	Apiculture-Lab	CO1	Demonstrate the maintain the Bees hives	PO1, PO2, PO4, PO5, PO6	PSO1, PSO2, PSO3
				CO2	Perform the maintain bee boxes	PO1, PO2, PO3 PO4, PO5, PO7	PSO1, PSO2, PSO3
				CO3	Find the tools required in Bee keeping	PO1, PO2, PO3 PO6	PSO1, PSO2, PSO3
				CO4	Determine the methodology of extraction honey	PO2, PO3, PO4, PO5, PO7	PSO1, PSO2, PSO3
				CO5	Prepare the extraction of honey & Bee wax	PO1, PO3, PO4, PO5, PO6, PO7	PSO1, PSO2, PSO3
7	V	BTY5S KFP	Pearl culture - lab	CO1	Execute pearl culture activities	PO1, PO5, PO6 PO7	PSO1, PSO2, PSO3
				CO2	Explain the techniques of surgical operations	PO1, PO2, PO4, PO5	PSO1, PSO2, PSO3
				CO3	Designed pearl culture techniques	PO1, PO3, PO4, PO6, PO7	PSO1, PSO2, PSO3
				CO4	Develop of pearls & marketing of pearls	PO2, PO3, PO5,	PSO1, PSO2, PSO3
				CO5	Perform pearl harvesting	PO1, PO2, PO3 PO4, PO5, PO6 PO7	PSO1, PSO2, PSO3

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I YEAR – BBC – I SEMESTER – COURSE – I – THEORY

Bio molecules and analytical techniques	MAPPING (COs & POs)							MAPPING (COs & PSOs)		
	PO1 Essential Domain Knowledge	PO2 Creative and critical thinking and problem-solving abilities	PO3 Communication Skills and Team Work	PO4 Digital Capabilities	PO5 Social Responsibilities, Ethical and Environmental Competency	PO6 Employability and Research related Skills	PO7 Life-Long Learning	PSO1	PSO2	PSO3
CO1	3	3		3		2	2	3	3	3
CO2	3	3	3		3	3	1	2	3	3
CO3	3	3	3	2	2		3	3	2	3
CO4	2		2	1	1	3		2	3	2
CO5		3	3	3	3	3	2	1	3	3
Average	**2.75**	**3**	**2.75**	**2.25**	**2.25**	**2.75**	**2**	**2.2**	**2.8**	**2.8**

OVER ALL AVERAGE BETWEEN COS & POS = 2.53OVER ALL AVERAGE BETWEEN COS & PSOS = 2.6

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I YEAR – BBC – II SEMESTER – COURSE – II– THEORY

Microbiology Cell & Molecular biology	MAPPING (COs & PSOs)									
	PO1 Essential Domain Knowledge	PO2 Creative and critical thinking and problem-solving abilities	PO3 Communication Skills and Team Work	PO4 Digital Capabilities	PO5 Social Responsibilities, Ethical and Environmental Competency	PO6 Employability and Research related Skills	PO7 Life-Long Learning	PSO1	PSO2	PSO3
CO1	3			3	2	3		3	3	3
CO2		3	3		3		2	2	3	2
CO3	3	3	3	3	3	3	3	3	3	3
CO4	1	3	2	1		3	1	3	1	2
CO5	3	3	3	2	3	2	2	3	3	3
Average	**2.5**	**3**	**2.75**	**2.25**	**2.75**	**2.75**	**2**	**2.8**	**2.6**	**2.6**

OVER ALL AVERAGE BETWEEN COS & POS = 2.57   **OVER ALL AVERAGE BETWEEN COS & PSOS = 2.66**

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II YEAR – BBC – III SEMESTER –COURSE-III – THEORY

Immunology&rDNA technology	MAPPING (COs & PSOs)									
	PO1 Essential Domain Knowledge	PO2 Creative and critical thinking and problem-solving abilities	PO3 Communication Skills and Team Work	PO4 Digital Capabilities	PO5 Social Responsibilities, Ethical and Environmental Competency	PO6 Employability and Research related Skills	PO7 Life-Long Learning	PSO1	PSO2	PSO3
CO1	3	3		3	3	2	1	3	3	3
CO2		3	2	2	2	3	2	2	3	3
CO3	2	3	3	3		3		3	2	3
CO4	3		3		3		2	3	3	1
CO5	3	3		3	2	3	3	3	3	2
Average	**2.75**	**3**	**2**	**2.75**	**2.5**	**2.75**	**2**	**2.8**	**2.8**	**2.4**

OVER ALL AVERAGE BETWEEN COS & POS = 2.53   **OVER ALL AVERAGE BETWEEN COS & PSOS = 2.58**

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II YEAR – BBC – IVSEMESTER –COURSE- IV- THEORY

Plant& Animal Biotechnology	MAPPING (COs & PSOs)									
	PO1 **Essential Domain Knowledge**	PO2 **Creative and critical thinking and problem solving abilities**	PO3 **Communication Skills and Team Work**	PO4 **Digital Capabilities**	PO5 **Social Responsibilities, Ethical and Environmental Competency**	PO6 **Employability and Research related Skills**	PO7 **Life-Long Learning**	PSO1	PSO2	PSO3
CO1	3	3		3		2		3	3	3
CO2		2	3	2	3		2	3	2	3
CO3	3	1		3	2	3	3	3	2	3
CO4	2	3	2	3		2		2	3	3
CO5	3		3		3	3	3	3	3	1
Average	**2.75**	**2.25**	**2**	**2.75**	**2**	**2.5**	**2**	**2.8**	**2.6**	**2.6**

OVER ALL AVERAGE BETWEEN COS & POS = 2.32   **OVER ALL AVERAGE BETWEEN COS & PSOS = 2.66**

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II YEAR – BBC – IV SEMESTER –COURSE- V- THEORY

Environmental& Industrial biotechnology	MAPPING (COs & PSOs)									
	PO1 Essential Domain Knowledge	PO2 Creative and critical thinking and problem solving abilities	PO3 Communication Skills and Team Work	PO4 Digital Capabilities	PO5 Social Responsibilities, Ethical and Environmental Competency	PO6 Employability and Research related Skills	PO7 Life-Long Learning	PSO1	PSO2	PSO3
CO1	3	3	2	3		3	1	3	3	3
CO2	2	3	3	3	2	3	2	3	3	3
CO3	3	3		3	3	2	3	3	2	3
CO4	3		3	3	3			2	3	3
CO5		3	3		3	3	2	3	3	2
Average	**2.75**	**3**	**2.5**	**3**	**2.75**	**2.75**	**2**	**2.8**	**2.8**	**2.8**

OVER ALL AVERAGE BETWEEN COS & POS =2.67   **OVER ALL AVERAGE BETWEEN COS & PSOS = 2.83**

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III YEAR – BBC– VSEMESTER –COURSE - VI– THEORY

Apiculture	MAPPING (COs & PSOs)									
	PO1 Essential Domain Knowledge	PO2 Creative and critical thinking and problem-solving abilities	PO3 Communication Skills and Team Work	PO4 Digital Capabilities	PO5 Social Responsibilities, Ethical and Environmental Competency	PO6 Employability and Research related Skills	PO7 Life-Long Learning	PSO1	PSO2	PSO3
CO1	3	3		3	3	3	2	3	2	3
CO2	3		3	2	3	3	3	2	3	2
CO3		1	2	3	3	2	1	3	2	3
CO4	2	3	3	3	3		3	2	3	3
CO5	3	3	3			3		3	3	3
Average	**2.75**	**2.5**	**2.75**	**2.75**	**3**	**2.75**	**2.25**	**2.6**	**2.6**	**2.8**

OVER ALL AVERAGE BETWEEN COS & POS =2.67 OVER ALL AVERAGE BETWEEN COS & PSOS = 2.66

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III YEAR – BBC – VSEMESTER –COURSE- VII- THEORY

Pearl culture	MAPPING (COs & PSOs)									
	PO1 **Essential Domain Knowledge**	PO2 **Creative and critical thinking and problem solving abilities**	PO3 **Communication Skills and Team Work**	PO4 **Digital Capabilities**	PO5 **Social Responsibilities, Ethical and Environmental Competency**	PO6 **Employability and Research related Skills**	PO7 **Life-Long Learning**	PSO1	PSO2	PSO3
CO1	3		3	3	3			3	3	3
CO2	2	3	2	1	2	3	3	2	3	3
CO3	3	3			3	3	2	3	1	3
CO4	3	2	3	2		2	1	3	2	3
CO5		3	2	3	2	3	3	3	3	2
Average	**2.75**	**2.75**	**2.5**	**2.25**	**2.5**	**2.75**	**2.25**	**2.8**	**2.4**	**2.6**

OVER ALL AVERAGE BETWEEN COS & POS = 2.53   **OVER ALL AVERAGE BETWEEN COS & PSOS = 2.66**

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III YEAR – BBC – VISEMESTER –PAPER- VIII- PROJECT

	MAPPING (COs & PSOs)									
	PO1 **Essential Domain Knowledge**	PO2 **Creative and critical thinking and problem solving abilities**	PO3 **Communication Skills and Team Work**	PO4 **Digital Capabilities**	PO5 **Social Responsibilities, Ethical and Environmental Competency**	PO6 **Employability and Research related Skills**	PO7 **Life-Long Learning**	PSO1	PSO2	PSO3
CO1		3	2	3	2	3		3	3	3
CO2	3	3			3		2	3	3	3
CO3	2		3	2		3	3	3	3	3
Average	**2.5**	**3**	**2.5**	**2.5**	**2.5**	**3**	**2.5**	**3**	**3**	**3**

OVER ALL AVERAGE BETWEEN COS & POS =2.64OVER ALL AVERAGE BETWEEN COS & PSOS = 3

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III YEAR – BBC – BIOTECHNOLOGY- THEORY

COs	MAPPING (COs & POs)							MAPPING (COs & PSOs)		
	PO1 Essential Domain Knowledge	PO2 Creative and critical thinking and problem-solving abilities	PO3 Communication Skills and Team Work	PO4 Digital Capabilities	PO5 Social Responsibilities, Ethical and Environmental Competency	PO6 Employability and Research related Skills	PO7 Life-Long Learning	PSO1	PSO2	PSO3
BTY1SK	2.75	3	2.75	2.25	2.25	2.75	2	2.2	2.8	2.8
BTY2SK	2.5	3	2.75	2.25	2.75	2.75	2	2.8	2.6	2.6
BTY3SK	2.75	3	2	2.75	2.5	2.75	2	2.8	2.8	2.4
BTY4SKA	2.75	2.25	2	2.75	2	2.5	2	2.8	2.6	2.6
BTY4SKB	2.75	3	2.5	3	2.75	2.75	2	2.8	2.8	2.8
BTY5SKE	2.75	2.5	2.75	2.75	3	2.75	2.25	2.6	2.6	2.8
BTY5SKF	2.75	2.75	2.5	2.25	2.5	2.75	2.25	2.8	2.4	2.6
PROJECT	2.5	3	2	2.5	2.5	3	2.5	3	3	3
Average	2.68	2.81	2.40	2.56	2.53	2.75	2.12	2.72	2.7	2.7

OVER ALL AVERAGE BETWEEN COS & POS =2.55   **OVER ALL AVERAGE BETWEEN COS & PSOS = 2.66**

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I YEAR – BBC – I SEMESTER – PAPER – I – PRACTICALS

| | MAPPING(COS & POs) | | | | | | | MAPPING (COs & PSOs) | | |
	PO1 Essential Domain Knowledge	PO2 Creative and critical thinking and problem-solving abilities	PO3 Communication Skills and Team Work	PO4 Digital Capabilities	PO5 Social Responsibilities, Ethical and Environmental Competency	PO6 Employability and Research related Skills	PO7 Life-long Learning	PSO1	PSO2	PSO3
CO1	3	3			3	2	3	3	2	2
CO2	3	3	2	1	1	2	2	2	3	2
CO3	3		2	3	2	3	3	3	3	2
CO4		3	3	2	3	3	2	3	3	3
CO5	2	2	2	3		3		3	3	3
Average	**2.75**	**2.75**	**2.25**	**2.25**	**2.25**	**2.6**	**2.5**	**2.8**	**2.8**	**2.4**

OVER ALL AVERAGE BETWEEN COS & POS = 2.47OVER ALL AVERAGE BETWEEN COS & PSOS = 2.66

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I YEAR – BBC – II SEMESTER – PAPER – II -- PRACTICALS

| | MAPPING(COS & POs) | | | | | | | MAPPING (COs & PSOs) | | |
	PO1 Essential Domain Knowledge	PO2 Creative and critical thinking and problem-solving abilities	PO3 Communication Skills and Team Work	PO4 Digital Capabilities	PO5 Social Responsibilities, Ethical and Environmental Competency	PO6 Employability and Research related Skills	PO7 Life-long Learning	PSO1	PSO2	PSO3
CO1	3	3		3		2	3	3	3	3
CO2	3	3	3	2	3	3	2	3	3	3
CO3		2	2	1	1	1	1	3	3	3
CO4	3	3	3	2	3	3	2	3	3	3
CO5	2		2		2			2	2	3
Average	2.75	2.75	2.5	2	2.25	2.25	2	2.8	2.8	3

OVER ALL AVERAGE BETWEEN COS & POS = 2.35   OVER ALL AVERAGE BETWEEN COS & PSOS = 2.86

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II YEAR – BBC – III SEMESTER –PAPER- III – PRACTICALS

	MAPPING(COS & POs)							MAPPING (COs & PSOs)		
	PO1 Essential Domain Knowledge	PO2 Creative and critical thinking and problem-solving abilities	PO3 Communication Skills and Team Work	PO4 Digital Capabilities	PO5 Social Responsibilities, Ethical and Environmental Competency	PO6 Employability and Research related Skills	PO7 Life-long Learning	PSO1	PSO2	PSO3
CO1	3		3	3			3	3	3	3
CO2	3	3	2	3	3	3	1	3	3	3
CO3		3	3	1	2	3	2	3	2	2
CO4	3	2	2	2	2	3	1	3	3	3
CO5	3	3			1	3		3	3	3
Average	**3**	**2.75**	**2.5**	**2.25**	**2**	**3**	**1.75**	**3**	**2.8**	**2.8**

OVER ALL AVERAGE BETWEEN COS & POS = 2.46   **OVER ALL AVERAGE BETWEEN COS & PSOS = 2.86**

II YEAR – BBC – IVSEMESTER –PAPER– IV– PRACTICALS

	MAPPING(COS & POs)							MAPPING (COs & PSOs)		
	PO1 Essential Domain Knowledge	PO2 Creative and critical thinking and problem-solving abilities	PO3 Communication Skills and Team Work	PO4 Digital Capabilities	PO5 Social Responsibilities, Ethical and Environmental Competency	PO6 Employability and Research related Skills	PO7 Life-long Learning	PSO1	PSO2	PSO3
CO1	3		3	2	2		2	3	3	3
CO2	2	3	2	3		3		3	2	3
CO3	2	3		2		2	3	2	3	3
CO4	3	3	3	3	2			3	2	2
CO5		2	3		3	3	3	2	3	3
Average	2.5	2.75	2.75	2.5	1.75	2	2	2.6	2.6	2.8

OVER ALL AVERAGE BETWEEN COS & POS = 2.32   **OVER ALL AVERAGE BETWEEN COS & PSOS = 2.66**

II YEAR – BBC – IVSEMESTER –PAPER– V– PRACTICALS

	MAPPING(COS & POs)							MAPPING (COs & PSOs)		
	PO1 Essential Domain Knowledge	PO2 Creative and critical thinking and problem-solving abilities	PO3 Communication Skills and Team Work	PO4 Digital Capabilities	PO5 Social Responsibilities, Ethical and Environmental Competency	PO6 Employability and Research related Skills	PO7 Life-long Learning	PSO1	PSO2	PSO3
CO1	3		3		3		3	3	2	3
CO2	2	3		3	3	3		3	3	3
CO3		1	3		2	2	2	2	3	2
CO4	3	3		3			3	3	2	3
CO5	3	2	2	2			3	2	3	3	3
Average	2.75	2.25	2	2	2	2.75	1.75	2.8	2.6	2.8

OVER ALL AVERAGE BETWEEN COS & POS =2.21   OVER ALL AVERAGE BETWEEN COS & PSOS = 2.73

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III YEAR – BBC– VSEMESTER –PAPER- VI – PRACTICALS

	MAPPING(COS & POs)							MAPPING (COs & PSOs)		
	PO1 Essential Domain Knowledge	PO2 Creative and critical thinking and problem-solving abilities	PO3 Communication Skills and Team Work	PO4 Digital Capabilities	PO5 Social Responsibilities, Ethical and Environmental Competency	PO6 Employability and Research related Skills	PO7 Life-long Learning	PSO1	PSO2	PSO3
CO1	3	2		2	2	3		3	3	3
CO2	3	3	3	2	1		3	2	2	3
CO3	3	2	3		3	3		3	3	3
CO4		3	2	1	3		2	3	2	3
CO5	2		3	3		3	3	3	3	3
Average	2.25	2.5	2.75	2	2.25	3	2	2.8	2.6	3

OVER ALL AVERAGE BETWEEN COS & POS = 2.39   **OVER ALL AVERAGE BETWEEN COS & PSOS = 2.8**

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III YEAR – BBC – VSEMESTER –PAPER–VII- PRACTICALS

	MAPPING(COS & POs)							MAPPING (COs & PSOs)		
	PO1 Essential Domain Knowledge	PO2 Creative and critical thinking and problem-solving abilities	PO3 Communication Skills and Team Work	PO4 Digital Capabilities	PO5 Social Responsibilities, Ethical and Environmental Competency	PO6 Employability and Research related Skills	PO7 Life-long Learning	PSO1	PSO2	PSO3
CO1	3				2	3	3	3	3	3
CO2	3	3		2	3			3	3	3
CO3	2		3	3		2	3	3	3	3
CO4		3	3		3			2	2	2
CO5	3	3	3	3	2	3	3	3	3	3
Average	2.75	3	3	2	2.5	2	3	2.8	2.8	2.8

OVER ALL AVERAGE BETWEEN COS & POS =2.60   OVER ALL AVERAGE BETWEEN COS & PSOS = 2.8

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III YEAR – BBC – BIOTECHNOLOGY-PRACTICALS

| COs | MAPPING (COs & POs) | | | | | | | MAPPING (COs & PSOs) | | |
	PO1 Essential Domain Knowledge	PO2 Creative and critical thinking and problem-solving abilities	PO3 Communication Skills and Team Work	PO4 Digital Capabilities	PO5 Social Responsibilities, Ethical and Environmental Competency	PO6 Employability and Research related Skills	PO7 Life-Long Learning	PSO1	PSO2	PSO3
BTY1SKP	2.75	2.75	2.25	2.25	2.25	2.6	2.5	2.8	2.8	2.4
BTY2SKP	2.75	2.75	2.5	2	2.25	2.25	2	2.8	2.8	3
BTY3SKP	3	2.75	2.5	2.25	2	3	1.75	3	2.8	2.8
BTY4SKAP	2.5	2.75	2.75	2.5	1.75	2	2	2.6	2.6	2.8
BTY4SKBP	2.75	2.25	2	2	2	2.75	1.75	2.8	2.6	2.8
BTY5SKEP	2.25	2.5	2.75	2	2.25	3	2	2.8	2.6	3
BTY5SKFP	2.75	3	3	2	2.5	2	3	2.8	2.8	2.8
Average	2.67	2.67	2.53	2.14	2.14	2.51	2.14	2.8	2.71	2.8

OVER ALL AVERAGE BETWEEN COS & POS = 2.55   **OVER ALL AVERAGE BETWEEN COS & PSOS = 2.66**

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DEPARTMENT OF BOTANY

S. No	Semester	Course Code	Course Title		Course Outcomes(Cos)	Program Outcomes (POs)	Program Specific Outcomes (PSOs)
1	I	BOT 1 SK	Fundamentals of microbes & Non vascular plants	CO1	Explain origin of life on the earth	PO1,PO2,PO7	PSO1,PSO2
				CO2	Illustrate diversity among the viruses and prokaryotic organisms and categorize them.	PO1,PO2,PO3PO4,PO7	PSO2,PSO3
				CO3	Classify fungi, lichens, algae and bryophytes based on their structure, reproduction and life cycles.	PO1,PO2,PO5	PSO2.
				CO4	Analyze and ascertain the plant disease symptoms due to viruses ,bacteria and fungi	PO2,PO3,PO6	PSO1,PSO2
				CO5	Recall and explain the evolutionary trends among amphibians of plant kingdom for their shift to land habitat.	PO1,PO2,PO4.	PSO1,PSO3
				CO6	Evaluate the ecological and economic value of microbes,thallophytes and bryophytes.	PO2,PO5,PO6,PO7	PSO1,PSO3
2	II	BOT 2 SK	Basics of vascular plants Phyto	CO1	Classify and compare Pteridophytes and Gymnosperms based on their morphology,reproduction and life cycles	PO1,PO2,PO3,PO7	PSO1,PSO2
				CO2	Justify evolutionary trends in tracheophytes to adapt for land habitat	PO1,PO5,PO6	PSO2,PSO3
				CO3	Explain the process of fossilization and compare the characteristics of the extinct and extant plants.	PO1,PO2	PSO1,PSO3

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						PO	PSO
			geography	CO4	Critically understand various taxonomical aids for identification of Angiosperms	PO1,PO2,PO4	PSO1,PSO2
				CO5	CO5- Analyze the morphology of the most common Angiosperm plants of their localities and recognize their families.	PO1,PO3	PSO1,PSO2
				CO6	Evaluate the ecological, ethnic and economic value of different tracheophytes and summarize their goods and services for human welfare.	PO2'PO3,PO4PO5,PO6,PO7	PSO2,PSO3
				CO7	CO7- Locate different phyto geographical regions of the world and India and can analyze their floristic wealth.	PO1,PO2,PO6,	PSO2,PSO3
3	III	**BOT 3 SK**	Anatomy Embryology of Angiosperms plant ecology & biodiversity	**CO1**	Understand on the organization of tissues and tissue systems in plants	PO1,PO2,PO5,PO7	PSO1,PSO2
				CO2	Illustrate and interpret various aspects of embryology	PO2,PO4,PO5,PO6	PSO2,PSO3
				CO3	Discuss the basic concept of plant ecology, and evaluate the effects of environmental and biotic factors on plant communities	PO1,PO3,PO5,	PSO2
				CO4	appraise various qualitative and quantative parameters to study the population and community ecology	PO3,PO4,PO5,PO6,PO7	PSO2
				CO5	Correlate the importance of Biodiversity and consequences due to its loss	PO1,PO2,PO4,PO5,PO6,PO7	PSO2,PSO3
				CO6	Enlist the endemic /endangered flora and fauna from two biodiversity hotspots in India and assess strategies for their conservation	PO1,PO2,PO3,PO4,PO5,PO6,PO7	PSO1,PSO2
4	IV	**BOT 4 SKA**	Plant physiology & Metabolism	CO1	Comprise the importance of water in plant life and mechanism for transport of water and solutes in plants	PO1,PO2,PO3,PO4,PO5,PO6	PSO1,PSO2,PSO3
				CO2	Evaluate the role of minerals in plant nutrition and their deficiency symptoms	PO1,PO2,PO4,	PSO2'PSO3
				CO3	Interpret the role of enzymes in plant metabolism	PO2,PO6	PSO2
				CO4	Critically understand the light reaction and carbon assimilation	PO1,PO2,PO4,PO	PSO1,PSO2

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					processes responsible for synthesis of food in plant	5,PO6,PO7	
				CO5	Analyze the biochemical reactions in relation to Nitrogen and lipid metabolism	PO1,PO4	PSO1,PSO2,PSO3
				CO6	Evaluate the physiological factors that regulate growth and development in plants	PO1,PO2,PO3,PO6	PSO1,PSO2
				CO7	Examine the role of light on flowering and explain physiology of plants under stress condition	PO1,PO2,PO4,PO5,PO6,PO7	PSO2,PSO3
5	IVB	BOT 4 SKB	Cell biology , Genetics&Plant breeding	CO1	Distinguish prokaryotic and eukaryotic cells and design the model of a cell .	PO1,PO2,PO3,PO4,PO5,PO6	PSO1,PSO2
				CO2	Explain the organization of a eukaryotic chromosome and the structure of genetic material .	PO2,PO3	PSO2,PSO3
				CO3	Demonstrate techniques to observe the cell and its components under microscope.	PO1,PO2,PO3,PO4,PO5,PO6,PO7	PSO1,PSO2
				CO4	Discuss the basics of -genetics, its variations and interpret inheritance of traits in living beings	PO1,PO2,PO3,PO4,,PO7	PSO3,PSO1,PSO2
				CO5	Elucidate the role of extra- chromosomal genetic material for inheritance of characters	PO1,PO2,PO3,PO4,PO7	PSO2,PSO3
				CO6	Evaluate the structure, function and regulation of genetic material	PO1,PO2,PO3,PO4,PO5,PO6	PSO1,PSO2
				CO7	Understand the application of principles and modern techniques in plant breeding.	PO1,PO2	PSO1,PSO3
				CO8	Explain the procedures of selection and hybridization for improvement of crops L2	PO1,PO2,PO3,PO4,PO5,PO7	PSO2
6	VA		Plant	CO1	comprise the basic knowledge and applications of plant tissue	PO1,PO2,PO3	PSO1,PSO2,PSO3

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		BOT 5 SKE	Tissue culture			culture.		
				CO2	Identify various facilities required to set up a plant tissue culture laboratory	PO1,PO2,PO3,PO4,PO6	PSO2'PSO3
				CO3	Acquire a critical knowledge on sterilization techniques related to plant Tissue culture	PO2,PO4,PO5,PO6'PO7	PSO1,PSO2
				CO4	Demonstrate skills of callus culture through hands on experiment.	PO2,PO4,PO7	PSO2,PSO3
				CO5	Understand the biotransformation technique for production of secondary metabolites.	PO1,PO2PO3PO5,PO6,PO7	PSO1,PSO2,PSO3
7	VB	BOT 5 SKF	Mushroom Cultivation	CO1	Understand the structure and life of a mushroom and discriminate edible and poisonous mushrooms.	PO1,PO2,PO3,PO5	PSO1,PSO2,PSO3
				CO2	Identify the basic infrastructure to establish a mushroom culture unit.	PO1,PO2,PO3,PO4,PO6	PSO2,PSO3
				CO3	Demonstrate skills preparation of compost and spawn.	PO2,PO4,PO5,PO6,PO7	PSO1,PSO2
				CO4	Acquire a critical knowledge on cultivation of some edible mushrooms	PO2,PO4,PO7	PSO2,PSO3
				CO5	Explain the methods of storage, preparation of value-added products and marketing.	PO1,PO2,PO3,PO5,PO6,PO7	PSO2,PSO2,PSO3
8	VIII	PROJECT		CO1	Explore career alternative prior to graduation	PO2,PO6	PSO3
				CO2	Develop work habits and attitudes necessary for job success	PO2,PO6	PSO2,PSO3
				CO3	Assess interests and abilities in their field of study	PO3,PO4,PO6	PSO3

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I YEAR – BBC – I SEMESTER – PAPER – I – THEORY

	MAPPING(COs & POs)							MAPPING(COs & PSOs)		
	PO1 **Essential Domain Knowledge**	PO2 **Creative and critical thinking and problem solving abilities**	PO3 **Communication Skills and Team Work**	PO4 **Digital Capabilities**	PO5 **Social Responsibilities, Ethical and Environmental Competency**	PO6 **Employability and Research related Skills**	PO7 **Life-Long Learning**	PSO1	PSO2	PSO3
CO1	2	3	_	3	1	_	_	1	3	_
CO2	3	3	2	2	_	_	2	_	3	2
CO3	2	3	_	_	3	3	_	_	3	_
CO4	3	3	2	_	_	2	_	3	1	_
CO5	2	3	_	3	_	_	_	_	3	3
CO6	_	2	_	_	3	3	2	2	_	2
Average	2.6	2.8	2.0	2.5	2.3	2.6	2	3	2.6	2.3

OVER ALL AVERAGE BETWEEN COS & POS = 2.4

OVER ALL AVERAGE BETWEEN COS & PSOS = 2.6

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I YEAR – BBC – II SEMESTER – PAPER – II– THEORY

	PO1 Essential Domain Knowledge	PO2 Creative and critical thinking and problem solving abilities	PO3 Communication Skills and Team Work	PO4 Digital Capabilities	PO5 Social Responsibilities, Ethical and Environmental Competency	PO6 Employability and Research related Skills	PO7 Life-Long Learning	PSO1	PSO2	PSO3
CO1	3	1	3	–	–	–	3	1	3	–
CO2	3	–	–	–	2	3	–	–	1	2
CO3	3	3	–	–	–	–	–	2	2	–
CO4	3	3	–	3	–	–	–	3	1	–
CO5	3	–	3	–	–	–	1	2	1	3
CO6	–	1	2	2	3	2	3	2	3	–
CO7	2	3	–	–	–	3	–	–	3	2
Average	2.8	2.2	2.6	2.5	2.5	2.6	2.3	2.0	2.0	2.3

Header row: MAPPING(COs & PSOs)

OVER ALL AVERAGE BETWEEN COS & POS = 2.5

OVER ALL AVERAGE BETWEEN COS & PSOS = 2.1

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II YEAR – BBC – III SEMESTER– PAPER-III – THEORY

	MAPPING(COs & PSOs)									
	PO1 Essential Domain Knowledge	PO2 Creative and critical thinking and problem solving abilities	PO3 Communication Skills and Team Work	PO4 Digital Capabilities	PO5 Social Responsibilities, Ethical and Environmental Competency	PO6 Employability and Research related Skills	PO7 Life-Long Learning	PSO1	PSO2	PSO3
CO1	2	2	–	–	2	–	1	2	3	–
CO2	–	2	–	1	1	3	–	–	3	3
CO3	2	–	3	–	3	–	–	–	3	–
CO4	–	–	3	2	–	3	3	3	1	–
CO5	3	3	–	3	3	2	2	–	3	2
CO6	3	2	1	2	–	3	2	2	3	–
Average	2.5	2.2	2.3	2.0	2.6	2.7	2.0	2.3	2.6	2.5

OVER ALL AVERAGE BETWEEN COS & POS = 2.3

OVER ALL AVERAGE BETWEEN COS & PSOS = 2.4

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II YEAR – BBC – IV SEMESTER– PAPER- IV- THEORY

	MAPPING(COs & PSOs)									
	PO1 **Essential Domain Knowledge**	PO2 **Creative and critical thinking and problem solving abilities**	PO3 **Communication Skills and Team Work**	PO4 **Digital Capabilities**	PO5 **Social Responsibilities, Ethical and Environmental Competency**	PO6 **Employability and Research related Skills**	PO7 **Life-Long Learning**	PSO1	PSO2	PSO3
CO1	3	3	1	1	1	1	–	2	3	–
CO2	2	3	3	2	–	–	–	–	3	2
CO3	–	3	–	–	–	3	–	–	3	–
CO4	1	3	–	2	3	3	3	3	1	–
Co5	2	–	–	3	–	–	–	1	3	2
CO6	3	2	2	–	–	3	–	2	3	–
Co7	2	3	–	2	3	3	3	–	3	2
Average	2.1	2.8	2.00	2.0	2.3	2.6	2.0	2.0	2.7	2.0

OVER ALL AVERAGE BETWEEN COS & POS = 2.2

OVER ALL AVERAGE BETWEEN COS & PSOS = 2.2

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II YEAR – BBC – IV SEMESTER – PAPER- V- THEORY

	MAPPING(COs & PSOs)									
	PO1 **Essential Domain Knowledge**	PO2 **Creative and critical thinking and problem solving abilities**	PO3 **Communication Skills and Team Work**	PO4 **Digital Capabilities**	PO5 **Social Responsibilities, Ethical and Environmental Competency**	PO6 **Employability and Research related Skills**	PO7 **Life-Long Learning**	PSO1	PSO2	PSO3
CO1	2	3	1	1	1	1	3	2	3	–
CO2	3	3	2	3	1	1	1	–	3	2
CO3	2	2	3	2	3	–	3	–	3	–
CO4	1	2	3	1	–	3	–	3	1	–
Co5	3	2	2	2	–	–	3	–	3	2
CO6	1	3	2	3	2	3	–	2	3	–
Co7	3	3	2	3	–	–	–	–	3	2
Co8	2	1	1	1	3	–	3	–	3	–
Average	2.1	2.3	2.0	2.0	2.0	2.0	2.6	2.3	2.6	2.0

OVER ALL AVERAGE BETWEEN COS & POS =2.14

OVER ALL AVERAGE BETWEEN COS & PSOS = 2.3

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III YEAR – BBC– V SEMESTER – PAPER- VI– THEORY

	MAPPING(COs & PSOs)									
	PO1 Essential Domain Knowledge	PO2 Creative and critical thinking and problem solving abilities	PO3 Communication Skills and Team Work	PO4 Digital Capabilities	PO5 Social Responsibilities, Ethical and Environmental Competency	PO6 Employability and Research related Skills	PO7 Life-Long Learning	PSO1	PSO2	PSO3
CO1	3	3	3	1	1	3	1	1	3	–
CO2	1	3	3	2	3	3	2	–	3	2
CO3	3	3	1	2	3	3	3	–	3	–
CO4	2	3	3	3	3	3	–	3	1	–
CO5	3	3	1	3	2	3	3	–	3	2
Average	2.4	3.0	2.2	2.2	2.4	3.0	2.2	2.0	2.6	2.0

OVER ALL AVERAGE BETWEEN COS & POS =2.4

OVER ALL AVERAGE BETWEEN COS & PSOS = 2.2

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III YEAR – BBC – V SEMESTER– PAPER- VII- THEORY

	MAPPING(COs & PSOs)									
	PO1 **Essential Domain Knowledge**	PO2 **Creative and critical thinking and problem solving abilities**	PO3 **Communication Skills and Team Work**	PO4 **Digital Capabilities**	PO5 **Social Responsibilities, Ethical and Environmental Competency**	PO6 **Employability and Research related Skills**	PO7 **Life-Long Learning**	PSO1	PSO2	PSO3
CO1	2	2	2	–	1	–	–	3	1	1
CO2	3	2	2	1	–	3	–	–	3	2
CO3	–	2	–	3	3	3	3	3	2	–
CO4	–	3	–	2	–	–	3	–	2	1
CO5	2	2	3	–	3	2	2	1	2	3
Average	2.3	2.2	2.3	2.0	2.3	2.6	2.6	2.3	2.0	2.3

OVER ALL AVERAGE BETWEEN COS & POS = 2.3
OVER ALL AVERAGE BETWEEN COS & PSOS = 2.2

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III YEAR – BBC – VI SEMESTER– PAPER- VIII- PROJECT

	MAPPING(COs & PSOs)									
	PO1 **Essential Domain Knowledge**	PO2 **Creative and critical thinking and problem solving abilities**	PO3 **Communication Skills and Team Work**	PO4 **Digital Capabilities**	PO5 **Social Responsibilities, Ethical and Environmental Competency**	PO6 **Employability and Research related Skills**	PO7 **Life-Long Learning**	PSO1	PSO2	PSO3
CO1	2	3	_	_	_	2	_	2	_	3
CO2	3	3	_		2	2	2	_	3	2
CO3	3	_	2	3	_	1	_	3	_	2
Average	2.6	2.0	2.0	3.0	2.0	2.3	2.0	2.0	3.0	2.3

OVER ALL AVERAGE BETWEEN COS & POS =2.2
OVER ALL AVERAGE BETWEEN COS & PSOS = 2.4

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III YEAR – BBC – BOTANY- THEORY

COs	MAPPING (COs & POs)							MAPPING (COs & PSOs)		
	PO1 Essential Domain Knowledge	PO2 Creative and critical thinking and problem solving abilities	PO3 Communication Skills and Team Work	PO4 Digital Capabilities	PO5 Social Responsibilities, Ethical and Environmental Competency	PO6 Employability and Research related Skills	PO7 Life-Long Learning	PSO1	PSO2	PSO3
PAPER -I	2.6	2.8	2.0	2.5	2.3	2.6	2.0	3.0	2.6	2.3
PAPER -II	2.8	2.2	2.6	2.5	2.5	2.6	2.3	2.0	2.0	2.3
PAPER -III	2.5	2.2	2.3	2.0	2.6	2.7	2.0	2.3	2.6	2.5
PAPER -IV	2.1	2.8	2.0	2.0	2.3	2.6	2.0	2.0	2.7	2.0
PAPER -V	2.1	2.3	2.0	2.0	2.0	2.0	2.6	2.3	2.6	2.0
PAPER -VI	2.4	3.0	2.2	2.2	2.4	3.0	2.2	2.0	2.6	2.0
PAPER -VII	2.3	2.2	2.3	2.0	2.3	2.6	2.6	2.3	2.0	2.3
PAPER -VIII	2.6	2.0	2.0	3.0	2.0	2.3	2.0	2.0	3.0	2.3
Average	**2.4**	**2.4**	**2.1**	**2.2**	**2.3**	**2.5**	**2.2**	**2.2**	**2.5**	**2.2**

OVER ALL AVERAGE BETWEEN COS & POS = 2.3
OVER ALL AVERAGE BETWEEN COS & PSOS = 2.3

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BOTANY-PRACTICAL

S. No	Semester	Course Code	Course Title		Course Outcomes(Cos)	Program Outcomes (POs)	Program Specific Outcomes (PSOs)
1	**I**	BOT 1 SK	Fundamentals of microbes & Non vascular plants	CO1	1.Demonstrate the techniques of use of lab equipment, preparing slides and identify the material and draw diagrams exactly as it appears	PO1,PO2,PO3,PO4,PO7	PSO1,PSO2
				CO2	2.Observe and identify microbes and lower groups of plants on their own.	PO1,PO2	PSO2
				CO3	3.Demonstrate the techniques of inoculation, preparation of media etc.	PO1,PO2,PO4	PSO3
				CO4	4.Identify the material in the permanent slides etc.	PO2,PO6,PO1	PSO2,PSO1
2	**II**	BOT 2 SK	Basics of vascular plants Phyto geography	CO1	1.Demonstrate the techniques of Section cutting,preparing slides,identifying of the material and drawing exact figures	PO1,PO2,PO4,PO6	PSO2,PSO1,PSO3
				CO2	2.Compare and contrast the morphological. and reproductive features of vascular plants	PO1,PO2	PSO1,PSO2
				CO3	3.Identify the local angiosperms of the families prescribed to their genus and species level and prepare herbarium	PO2,PO3,PO6,PO7	PSO1,PSO3
				CO4	4.Exhibit skills of preparing slides, the given twigs in the	PO1,PO2,PO4	PSO1,PSO2

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						lab and drawing figures of plant twigs,flowers and floral diagrams as they are		
					CO5	5.Prepare and preserve specimens of local wild plants using herbarium techniques	PO1,PO2,PO6,PO7	PSO2,PSO3
3	**III**	**BOT 3 SK**	Anatomy Embryology of Angiosperms plant ecology & biodiversity		**CO1**	1.Get familiarized with techniques of Section making, staining and microscopic study of vegetative,anatomical and reproductive structures of plants	PO1,PO2,PO6	PSO1,PSO2
					CO2	2.Observe externally and under microscope,identify and draw exact diagrams of the material in the lab	PO1,PO2,PO6,PO7	PSO1,PSO2
					CO3	3.Demonstrate application of methods in plant ecology and conservation of biodiversity and communities of plants.	PO1,PO2,PO4	PSO2,PSO3
4	**IV**	**BOT 4 SKA**	Plant physiology & Metabolism		CO1	1.Conduct lab and field experiments pertaining to plant physiology that is biophysical and biochemical processes using related glassware,equipment,chemical and plant material.	PO1,PO2,PO5,PO6	PSO1,PSO2,PSO3
					CO2	2. Estimate the quantities and qualitative expressions using experimental results and calculations.	PO1,PO2,PO6,PO7	PSO2
					CO3	3. Demonstrate the factors responsible for growth and development in plants.	PO1,PO2,PO3	PSO2,PSO3
5	**IVB**	**BOT 4 SKB**	Cell biology, Genetics&Plant breeding		CO1	1.Show the understanding of techniques of demonstrating Mitosis and Meiosis in the laboratory and identify different stages of cell division.	PO1,PO2,PO4	PSO1,PSO2
					CO2	2.Identify and explain with diagram the cellular parts of a cell from a model or picture and prepare models.	PO1,PO2,PO6,PO7	PSO2,PSO1
					CO3	3. Solve the problems related to crosses and gene interactions	PO2,PO6,PO7	PSO1,PSO3
					CO4	4 Demonstrate plant breeding techniques such as emasculation and bagging.	PO2,PO3	PSO3,PSO2

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6	**VA**	BOT 5 SKE	Plant Tissue culture	CO1	1.List out, identify &handle various equipment in plant tissue culture	PO1,PO2,PO7	PSO1
				CO2	2.Learn the procedures of preparation of media	PO6,PO1,PO2	PSO2
				CO3	3.Demonstrate skills on inoculation, establishing callus culture and micro propagation	PO1,PO2,PO3,PO6	PSO2,PSO3
				CO4	4.Acquire skills in observing and measuring callus growth	PO2,PO6,PO7	PSO2
				CO5	5. Perform some techniques related to plant transformation for secondary metabolite production	PO1,PO2,PO6	PSO2,PSO3
7	**VB**	BOT 5 SKF	Mushroom Cultivation	CO1	1.Identify and discriminate different mushrooms based on morphology	PO1,PO2	PSO1
				CO2	2.Understand facilities required for mushroom cultivation	PO1,PO2,PO6	PSO4,PSO2
				CO3	3.Demonstrate skills on preparation of spawn, compost and casing material	PO1,PO2,PO6,PO7	PSO2,PSO3
				CO4	4. Exhibit various skills on various cultivation practices for an edible mushrooms.	PO2,PO6,PO7	PSO2,PSO3

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I YEAR – BBC – I SEMESTER – PAPER – I – PRACTICAL

	MAPPING(COs & POs)							MAPPING(COs & PSOs)		
	PO1 Essential Domain Knowledge	PO2 Creative and critical thinking and problem solving abilities	PO3 Communication Skills and Team Work	PO4 Digital Capabilities	PO5 Social Responsibilities, Ethical and Environmental Competency	PO6 Employability and Research related Skills	PO7 Life-Long Learning	PSO1	PSO2	PSO3
CO1	3	3	2	-	-	1	2	3	2	-
CO2	2	3	-	-	-	-	1	-	3	-
CO3	2	3	-	3	-	-	-	1	-	3
CO4	-	3	-	-	-	2	3	2	3	-
Average	2.3	3.0	2.0	3.0	-	1.5	2.0	2.0	2.6	3.0

OVER ALL AVERAGE BETWEEN COS & POS = 2.3

OVER ALL AVERAGE BETWEEN COS & PSOS = 2.5

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I YEAR – BBC – II SEMESTER – PAPER – II– PRACTICAL

	MAPPING(COs & PSOs)									
	PO1 Essential Domain Knowledge	PO2 Creative and critical thinking and problem solving abilities	PO3 Communication Skills and Team Work	PO4 Digital Capabilities	PO5 Social Responsibilities, Ethical and Environmental Competency	PO6 Employability and Research related Skills	PO7 Life-Long Learning	PSO1	PSO2	PSO3
CO1	3	3	-	2	-	3	-	3	-	2
CO2	3	2	3	-	-	3	-	3	2	-
CO3	-	3	2	-	2	3	2	3	2	-
CO4	3	2	-	3	-	-	-	3	1	-
CO5	3	2	-	-	2	2	3	1	-	3
Average	3	2.4	2.5	2.5	2	2.7	2.5	2.6	1.6	2.5

OVER ALL AVERAGE BETWEEN COS & POS = 2.51
OVER ALL AVERAGE BETWEEN COS & PSOS = 2.2

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I YEAR – BBC – III SEMESTER – PAPER – III– PRACTICAL

	MAPPING(COs & PSOs)									
	PO1 Essential Domain Knowledge	PO2 Creative and critical thinking and problem solving abilities	PO3 Communication Skills and Team Work	PO4 Digital Capabilities	PO5 Social Responsibilities, Ethical and Environmental Competency	PO6 Employability and Research related Skills	PO7 Life-Long Learning	PSO1	PSO2	PSO3
CO1	3	3	-	-	2	3	3	3	2	-
CO2	3	2	-	3	-	3	2	-	2	3
CO3	2	3	2	2	3	1	1	-	3	3
Average	2.6	2.6	2	2.5	2.5	2.3	2	3	2.3	3

OVER ALL AVERAGE BETWEEN COS & POS = 2.35
OVER ALL AVERAGE BETWEEN COS & PSOS = 2.76

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I YEAR – BBC – IV SEMESTER – PAPER – IV– PRACTICAL

	MAPPING(COs & PSOs)									
	PO1 Essential Domain Knowledge	PO2 Creative and critical thinking and problem solving abilities	PO3 Communication Skills and Team Work	PO4 Digital Capabilities	PO5 Social Responsibilities, Ethical and Environmental Competency	PO6 Employability and Research related Skills	PO7 Life-Long Learning	PSO1	PSO2	PSO3
CO1	3	2	-	-	3	2	1	3	2	2
CO2	2	3	-	-	-	3	2	1	3	1
CO3	2	2	3	-	-	-	-	-	3	2
Average OV	2.3	2.3	3	-	3	2.5	1.5	2	2.6	1.6

OVER ALL AVERAGE BETWEEN COS & POS = 2.43

OVER ALL AVERAGE BETWEEN COS & PSOS = 2.06

III YEAR – BBC – IV SEMESTER – PAPER – V– PRACTICAL

	MAPPING(COs & PSOs)									
	PO1 Essential Domain Knowledge	PO2 Creative and critical thinking and problem solving abilities	PO3 Communication Skills and Team Work	PO4 Digital Capabilities	PO5 Social Responsibilities, Ethical and Environmental Competency	PO6 Employability and Research related Skills	PO7 Life-Long Learning	PSO1	PSO2	PSO3
CO1	3	3	1	3	-	-	3	2	-	-
CO2	2	3	-	-	-	2	3	3	1	-
CO3	-	3	-	-	2	2	3	1	2	-
CO4	-	2	3	-	-	-	-	1	3	3
Average	2.5	2.7	2	3	2	2	3	1.7	2	3

 OVER ALL AVERAGE BETWEEN COS & POS = 2.45

OVER ALL AVERAGE BETWEEN COS & PSOS = 2.23

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I YEAR – BBC – V SEMESTER – PAPER – VI– PRACTICAL

	MAPPING(COs & PSOs)									
	PO1 **Essential Domain Knowledge**	PO2 **Creative and critical thinking and problem solving abilities**	PO3 **Communication Skills and Team Work**	PO4 **Digital Capabilities**	PO5 **Social Responsibilities, Ethical and Environmental Competency**	PO6 **Employability and Research related Skills**	PO7 **Life-Long Learning**	PSO1	PSO2	PSO3
CO1	3	3	-	1	-	1	3	3	-	-
CO2	2	3	-	-	2	2	-	-	3	-
CO3	2	3	3	2	3	3	-	-	2	-
CO4	-	3	-	2	-	3	3	-	2	-
CO5	2	2	2	-	2	3	-	-	3	2
Average	2.2	2.8	2.5	2.3	2.3	2.4	3.0	3	2.5	2.0

OVER ALL AVERAGE BETWEEN COS & POS = 2.27
OVER ALL AVERAGE BETWEEN COS & PSOS = 2.5

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I YEAR – BBC – V SEMESTER – PAPER – VII– PRACTICAL

	MAPPING(COs & PSOs)									
	PO1 Essential Domain Knowledge	PO2 Creative and critical thinking and problem solving abilities	PO3 Communication Skills and Team Work	PO4 Digital Capabilities	PO5 Social Responsibilities, Ethical and Environmental Competency	PO6 Employability and Research related Skills	PO7 Life-Long Learning	PSO 1	PSO 2	PSO 3
CO1	3	3	2	-	-	1	2	3	-	-
CO2	3	3	-	-	1	2	2	3	2	-
CO3	2	3	1	-	2	2	2	-	2	3
CO4 3	-	3	-	2	-	2	3	-	2	3
Average	2.6	3	1.5	2	1.5	1.7	2.2	3	2	3

OVER ALL AVERAGE BETWEEN COS & POS = 2.07
OVER ALL AVERAGE BETWEEN COS & PSOS = 2.6

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III YEAR – BBC – BOTANY- PRACTICAL

COs	MAPPING (COs & POs)							MAPPING (COs & PSOs)		
	PO1 Essential Domain Knowledge	PO2 Creative and critical thinking and problem solving abilities	PO3 Communication Skills and Team Work	PO4 Digital Capabilities	PO5 Social Responsibilities, Ethical and Environmental Competency	PO6 Employability and Research related Skills	PO7 Life-Long Learning	PSO 1	PSO 2	PSO 3
PAPER -I	2.3	3	2	3	-	1.5	2	2	2.6	3
PAPER -II	3	2.4	2.5	2.5	2	2.7	2.5	2.6	1.6	2.5
PAPER - III	2.6	2.6	2	2.5	2.5	2.3	2	3	2.3	3
PAPER -IV	2.3	2.3	3	-	3	2.5	1.5	2	2.6	1.6
PAPER -V	2.5	2.7	2	3	2	2	3	1.7	2	3.0
PAPER -VI	2.2	2.8	2.5	1.5	1.5	2.4	3.0	3.0	2.5	2.0
PAPER - VII	2.6	3	1.5	2	1.5	1.7	2.2	3	2	3
Average	2.5	2.68	2.21	2.41	2.08	2.15	2.31	2.47	2.22	2.58

OVER ALL AVERAGE BETWEEN COS & POS = 2.33

OVER ALL AVERAGE BETWEEN COS & PSOS = 2.42

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DEPARTMENT OF CHEMISTRY

S. No	Semester	Course & paper Code	Course Title	Course Outcomes(Cos)		Program Outcomes (POs)	Program Specific Outcomes (PSOs)
1	I	CHE1S & 1312-1	Inorganic and physical chemistry	CO1	Explain the evolution of the various definitions,concepts related to p-block elements.	PO1	
				CO2	Summarize the insulators,conductors and semiconductors.		
				CO3	Discuss about applications of distribution law for various ideal and true solutions.		PSO3
				CO4	Demonstrate the experimental skils using common effect and solubility product principles in qualitative analysis.	PO4	
				CO5	Analyse the experimental methods for determining molar mass of non-volatile solute.		PSO2
2	II	CHE2SK	Organic and	CO1	Recapitulate the conformations of	PO1	

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		& 1312-2K	general chemistry			alkane and cycloalkanes		
				CO2	Analyze the electrophilic and nucleophilic addition mechanism of alkenes and alkynes	PO3	PSO2
				CO3	Illustrate aromaticity and huckells rule for benzenoid and non benzenoid substance	PO2	PSO1
				CO4	Discover projects on colloidal substance and use adsorption principles	PO3	
				CO5	Apply concepts of stereochemistry of carbon compounds	PO2	PSO2
3	III	CHE3SK & 2312-3K	Organic chemistry and Spectroscopy	CO1	Identification af alcohols,phenols and their reactivity	PO2	PSO2
				CO2	Apply the synthetic application of carbonyl compounds	PO2	PSO2
				CO3	Illustrate reactions involving H,OH And COH groups in carboxylic acids and their derivatives	PO2	PSO2
				CO4	Explain selection rules of vibrational and rotational spectroscopy for bond properties of organic compounds	PO3	PSO3
				CO5	Apply IR spectral analysis of different functional groups.	PO3	PSO2
				CO6	Create & carry out workup & separation procedures	PO3 & PO7	PSO7
4	IVA			CO1	Explain the preparation &reactions of	PO2 & PO6	PSO2 , PSO3

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					organometallic compounds and job opportunities in petroleum industries		
		CHE4SK A & 2312-41K	Inorganic , organic and physical chemistry	CO2	Classification of carbohydrates determination of structure of glucose and fructose	PO2 & PO3	PSO3
				CO3	Explain the synthesis of proteins and its employability in food corporation of india	PO2 & PO5	PSO6
				CO4	Distinguish nitrohydrocarbons and undertake project work in pharmaceutical companies and industries	PO2 & PO7	PSO7
				CO5	Interpret concepts of thermodyanamics and photochemistry & explore job opportunities in public &private sectors of energy resources & oceanography (aquaculture)	PO2 & PO5	PSO6
5	IVB	CHE4SK B	Inorganic & physical	CO1	Recall theories of coordination compounds	PO1	PSO1
				CO2	Identify bioinorganic compounds & apply in study of macromolecules like haemoglobin & chlorophyll	PO4	PSO4
				CO3	Apply the concept of phase rule & develop problem solving skills for different component systems & freezing mixtures	PO2	PSO2
				CO4	Explain effects of dilutions &		

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		& 2312-42K	chemistry		conductances & relate applications of electrochemical sciences	PO2 & PO7	PSO2 & PSO7
				CO5	Critically understand the kinetics of chemical reactions and impact of environmental factors on concept of enzyme catalysis able for life long learning in diagnostic laboratories	PO2,PO3 & PO7	PSO3 & PSO7
6	V	CHE5SKG & 3312-57K	Environmental chemistry	CO1	Distinguish types of pollution , its causes & its preventive measures	PO1	PSO2
				CO2	Explore factors for photochemical smog & ozone layer depletion	PO3	PSO3
				CO3	Identify the hazards of water pollution & factors of COD & BOD & Enrich with knowledge for career opportunities in water treatment plants	PO2 & PO6	PSO6
				CO4	Analyze the occurance of Heavy metals & chemicals toxicology & treatment in living organisms	PO2 & PO3	PSO3
				CO5	Create An Awarness on Environment in Different Ecosystems & Sustanibility of Biodiversity	PO3	PSO3 & PSO7
7	V			CO1	Explain & apply theoretical knowledge of green chemistry & interpret sonication method for green synthesis of organic reactions	PO2	PSO2 & PSO5

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		CHE5SKH & 3312-58K	Green chemistry	CO2	Analyze supercritical CO_2 & its applications,selection of solvents & create impact of green chemistry on environment & society	PO3	PSO3
				CO3	Undertake project work on green synthesis assisted by microwave & ultrasound techniques & explore jobs related to green chemistry in public & private sectors	PO4	PSO4
				CO4	Explore the job opportunities by using green catalyse such as alumina , silica , enzymes etc	PO5	PSO5
				CO5	Vertical mobility of concepts of nanotechnologies in green chemistry & application of nanomaterials and integrate this life long experience in jobs	PO5	PSO7
8	VI		Projects	CO1	Analyze & interpret and take appropriate decisions in solving real life problems using statistical tools		
				CO2	Use different statistical packages for graphical interface , data analysis & interpretation		
				CO3	Write a systematic project report.		

I YEAR – I SEMESTER – COURSE – I - THEORY

| | MAPPING(COs & POs) | | | | | | | MAPPING(COs & PSOs) | | |
	PO1 Essential Domain Knowledge	PO2 Creative and critical thinking and problem solving abilities	PO3 Communication Skills and Team Work	PO4 Digital Capabilities	PO5 Social Responsibilities, Ethical and Environmental Competency	PO6 Employability and Research related Skills	PO7 Life-Long Learning	PSO1	PSO2	PSO3
CO1	2	3		4	1	3		2	3	2
CO2	2	3		2			3	3	3	
CO3	2	3	2		3		2			2
CO4	3	2	1	1		3		2	3	
CO5		2	3	2	3		2		2	2
Average	2.25	2.6	2.0	2.25	2.3	2.3	2.33	2.33	2.75	2.0

OVER ALL AVERAGE BETWEEN COS & POS = 2.29

OVER ALL AVERAGE BETWEEN COS & PSOS = 2.36

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I YEAR – I SEMESTER – PAPER – I   PRACTICAL

	MAPPING(COs & POs)							MAPPING(COs & PSOs)		
	PO1 Essential Domain Knowledge	PO2 Creative and critical thinking and problem solving abilities	PO3 Communication Skills and Team Work	PO4 Digital Capabilities	PO5 Social Responsibilities, Ethical and Environmental Competency	PO6 Employability and Research related Skills	PO7 Life-Long Learning	PSO1	PSO2	PSO3
CO1	2	1	3	3	3	2	3	2	3	2
CO2	2	3	2	3	2	3	3	2	2	3
CO3	3	2	3	4	4	3	2	3	2	3
CO4	2	3	4	2	2	3	2	4	2	3
CO5	2	3	2	3	3	4	2	3	4	2
Average	2.2	2.4	2.8	3	2.8	3	2.4	2.8	2.6	2.6

OVER ALL AVERAGE BETWEEN COS & POS = 2.65

OVER ALL AVERAGE BETWEEN COS & PSOS = 2.66

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I YEAR – – II SEMESTER – COURSE – II– THEORY

	MAPPING(COs & PSOs)									
	PO1 Essential Domain Knowledge	PO2 Creative and critical thinking and problem solving abilities	PO3 Communication Skills and Team Work	PO4 Digital Capabilities	PO5 Social Responsibilities, Ethical and Environmental Competency	PO6 Employability and Research related Skills	PO7 Life-Long Learning	PSO1	PSO2	PSO3
CO1	3	2	2	1	3	-	2	1	3	1
CO2	3	4	-	3	-	2	-	3	2	-
CO3	2	-	4	2	-	3	1	-	3	3
CO4	3	2	3	-	2	-	2	2	2	-
CO5	2	1	2	4	3	2	3	4	-	3
Average	2.6	2.25	2.75	2.5	2.66	2.33	2.0	2.25	2.5	2.33

OVER ALL AVERAGE BETWEEN COS & POS = 2.55
OVER ALL AVERAGE BETWEEN COS & PSOS = 2.36

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I YEAR – MBBT, MPC– II SEMESTER – PAPER – II - PRACTICAL

	MAPPING(COs & PSOs)									
	PO1 Essential Domain Knowledge	PO2 Creative and critical thinking and problem solving abilities	PO3 Communication Skills and Team Work	PO4 Digital Capabilities	PO5 Social Responsibilities, Ethical and Environmental Competency	PO6 Employability and Research related Skills	PO7 Life-Long Learning	PSO1	PSO2	PSO3
CO1	3	2	1	3	3	3	2	2	3	2
CO2	3	3	2	3	2	2	3	3	2	3
CO3	3	3	2	-	3	3	-	2	3	-
CO4	3	2	2	3	1	-	3	1	-	3
CO5	2	1	3	1	2	3	2	3	3	2
Average	2.8	2.2	2.0	2.0	2.2	2.2	2.0	2.2	2.2	2.0

OVER ALL AVERAGE BETWEEN COS & POS = 2.2
OVER ALL AVERAGE BETWEEN COS & PSOS = 2.13

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II YEAR – BBC – III SEMESTER – COURSE -III – THEORY

	MAPPING(COs & PSOs)									
	PO1 Essential Domain Knowledge	PO2 Creative and critical thinking and problem solving abilities	PO3 Commun ication Skills and Team Work	PO4 Digital Capabilities	PO5 Social Responsibilities, Ethical and Environmental Competency	PO6 Employability and Research related Skills	PO7 Life-Long Learning	PSO1	PSO2	PSO3
CO1	3	2	-	3	2	-	1	-	2	1
CO2	2	-	3	2	-	3	-	2	-	3
CO3	3	1	-	3	-	2	3	-	3	1
CO4	2	-	3	-	2	-	2	3	2	-
CO5	1	3	1	-	3	1	3	2	-	3
Ave rage	2.2	2.0	2.33	2.66	2.33	2.0	2.25	2.33	2.33	2.0

OVER ALL AVERAGE BETWEEN COS & POS = 2.25

OVER ALL AVERAGE BETWEEN COS & PSOS = 2.22

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II YEAR – MBBT, MPC – III SEMESTER – PAPER-III – PRACTICAL

	MAPPING(COs & PSOs)									
	PO1 Essential Domain Knowledge	PO2 Creative and critical thinking and problem solving abilities	PO3 Communication Skills and Team Work	PO4 Digital Capabilities	PO5 Social Responsibilities, Ethical and Environmental Competency	PO6 Employability and Research related Skills	PO7 Life-Long Learning	PSO1	PSO2	PSO3
CO1	3	-	3	3	3	-	3	3	2	3
CO2	2	3	2	1	3	2	2	3	3	2
CO3	-	2	3	-	-	3	-	3	-	3
CO4	2	3	-	3	2	3	3	-	3	-
CO5	3	3	3	3	3	3	2	3	2	3
Average	2.0	2.2	2.2	2.0	2.2	2.2	2.0	2.4	2.0	2.2

OVER ALL AVERAGE BETWEEN COS & POS = 2.11

OVER ALL AVERAGE BETWEEN COS & PSOS = 2.2

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II YEAR – IV SEMESTER – COURSE - IV- THEORY

	MAPPING(COs & PSOs)									
	PO1 Essential Domain Knowledge	PO2 Creative and critical thinking and problem solving abilities	PO3 Communication Skills and Team Work	PO4 Digital Capabilities	PO5 Social Responsibilities, Ethical and Environmental Competency	PO6 Employability and Research related Skills	PO7 Life-Long Learning	PSO1	PSO2	PSO3
CO1	3	2	-	1	2	-	3	1	2	1
CO2	1	3	-	3	-	2	1	2	-	3
CO3	2	-	3	1	1	3	2	-	3	-
CO4	1	-	2	-	3	-	2	-	1	3
CO5	3	2	1	2	2	1	-	3	2	3
Average	2.0	2.33	2.0	1.75	2.0	2.0	2.0	2.0	2.0	2.5

OVER ALL AVERAGE BETWEEN COS & POS = 1.72

OVER ALL AVERAGE BETWEEN COS & PSOS = 2.16

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II YEAR – IV SEMESTER – PAPER- IV- PRACTICAL

	MAPPING(COs & PSOs)									
	PO1 Essential Domain Knowledge	PO2 Creative and critical thinking and problem solving abilities	PO3 Communication Skills and Team Work	PO4 Digital Capabilities	PO5 Social Responsibilities, Ethical and Environmental Competency	PO6 Employability and Research related Skills	PO7 Life-Long Learning	PSO1	PSO2	PSO3
CO1	3	2	-	3	3	2	3	3	-	3
CO2	2	3	3	2	2	1	3	2	1	-
CO3	1	3	2	-	3	3	2	-	3	3
CO4	3	2	3	3	-	2	3	2	3	2
CO5	3	2	3	2	3	2	3	3	3	3
Average	2.4	2.4	2.2	2.0	2.2	2.0	2.6	2.0	2.0	2.2

OVER ALL AVERAGE BETWEEN COS & POS =2.25

OVER ALL AVERAGE BETWEEN COS & PSOS = 2.06

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III YEAR V SEMESTER – COURSE - V- THEORY

	MAPPING(COs & PSOs)									
	PO1 Essential Domain Knowledge	PO2 Creative and critical thinking and problem solving abilities	PO3 Communication Skills and Team Work	PO4 Digital Capabilities	PO5 Social Responsibilities, Ethical and Environmental Competency	PO6 Employability and Research related Skills	PO7 Life-Long Learning	PSO1	PSO2	PSO3
CO1	3	1	-	2	-	3	2	-	1	3
CO2	-	3	2	-	3	-	1	3	-	2
CO3	1	2	-	2	-	2	-	2	2	-
CO4	1	-	3	3	2	-	3	-	3	3
CO5	3	2	2	3	2	1	2	2	2	2
Average	2.0	2.0	2.33	2.5	2.33	2.0	2.0	2.33	2.0	2.5

OVER ALL AVERAGE BETWEEN COS & POS =2.22

OVER ALL AVERAGE BETWEEN COS & PSOS = 2.27

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II YEAR   IV SEMESTER – PAPER- V- PRACTICAL

	MAPPING(COs & PSOs)									
	PO1 Essential Domain Knowledge	PO2 Creative and critical thinking and problem solving abilities	PO3 Communication Skills and Team Work	PO4 Digital Capabilities	PO5 Social Responsibilities, Ethical and Environmental Competency	PO6 Employability and Research related Skills	PO7 Life-Long Learning	PSO1	PSO2	PSO3
CO1	3	2	3	3	2	3	2	-	2	3
CO2	2	1	3	-	3	-	3	3	3	2
CO3	3	2	-	2	3	2	3	2	3	2
CO4	-	3	2	3	2	3	2	3	-	3
CO5	3	2	3	3	2	3	3	2	3	-
Average	2.2	2.0	2.2	2.2	2.4	2.2	2.6	2.0	2.2	2.0

OVER ALL AVERAGE BETWEEN COS & POS =2.25

OVER ALL AVERAGE BETWEEN COS & PSOS = 2.06

III YEAR V SEMESTER – COURSE - VI– THEORY

	MAPPING(COs & PSOs)									
	PO1 Essential Domain Knowledge	PO2 Creative and critical thinking and problem solving abilities	PO3 Communication Skills and Team Work	PO4 Digital Capabilities	PO5 Social Responsibilities, Ethical and Environmental Competency	PO6 Employability and Research related Skills	PO7 Life-Long Learning	PSO 1	PSO2	PSO3
CO1	3	-	2	1	-	4	2	1	2	3
CO2	2	3	-	3	2	1	-	2	1	-
CO3	1	-	3	-	1	2	-	3	-	2
CO4	3	2	-	2	-	3	1	-	2	-
CO5	2	2	1	-	3	-	3	1	2	3
Average	2.75	2.33	2.0	2.0	2.0	2.5	2.0	1.75	1.75	2.66

OVER ALL AVERAGE BETWEEN COS & POS =1.94

OVER ALL AVERAGE BETWEEN COS & PSOS = 2.05

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III YEAR V SEMESTER – PAPER- VI– PRACTICAL

	MAPPING(COs & PSOs)									
	PO1 Essential Domain Knowledge	PO2 Creative and critical thinking and problem solving abilities	PO3 Communication Skills and Team Work	PO4 Digital Capabilities	PO5 Social Responsibilities, Ethical and Environmental Competency	PO6 Employability and Research related Skills	PO7 Life-Long Learning	PSO1	PSO2	PSO3
CO1	3	2	3	-	2	3	1	3	2	3
CO2	2	3	-	3	2	-	2	3	3	-
CO3	-	2	3	3	3	2	3	2	-	3
CO4	2	1	3	2	3	2	-	3	3	2
CO5	3	2	3	2	3	3	3	-	3	2
Average	2.0	2.2	2.4	2.0	2.6	2.0	2.0	2.2	2.2	2.0

OVER ALL AVERAGE BETWEEN COS & POS =2.17

OVER ALL AVERAGE BETWEEN COS & PSOS = 2.13

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III YEAR V SEMESTER – COURSE - VII- THEORY

	MAPPING(COs & PSOs)									
	PO1 Essential Domain Knowledge	PO2 Creative and critical thinking and problem solving abilities	PO3 Communication Skills and Team Work	PO4 Digital Capabilities	PO5 Social Responsibilities, Ethical and Environmental Competency	PO6 Employability and Research related Skills	PO7 Life-Long Learning	PSO1	PSO2	PSO3
CO1	2	-	3	2	-	1	3	3	1	-
CO2	3	2	-	1	2	-	-	2	2	2
CO3	2	-	2	-	3	2	3	-	2	2
CO4	3	2	-	3	2	2	2	3	-	1
CO5	-	3	2	2	1	3	2	-	2	-
Average	2.5	2.33	2.33	2.0	2.0	2.0	2.5	2.66	1.75	1.66

OVER ALL AVERAGE BETWEEN COS & POS =2.33
OVER ALL AVERAGE BETWEEN COS & PSOS = 2.023

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III YEAR V SEMESTER – PAPER- VII- PRACTICAL

	MAPPING(COs & PSOs)									
	PO1 Essential Domain Knowledge	PO2 Creative and critical thinking and problem solving abilities	PO3 Communication Skills and Team Work	PO4 Digital Capabilities	PO5 Social Responsibilities, Ethical and Environmental Competency	PO6 Employability and Research related Skills	PO7 Life-Long Learning	PSO1	PSO2	PSO3
CO1	3	2	3	2	3	2	3	2	3	-
CO2	-	3	2	3	-	2	3	-	3	2
CO3	3	3	1	-	3	1	-	3	2	3
CO4	3	3	2	3	2	3	2	3	-	3
CO5	3	-	3	2	3	2	3	2	3	2
Average	2.4	2.2	2.2	2.0	2.2	2.0	2.2	2.0	2.2	2.0

OVER ALL AVERAGE BETWEEN COS & POS =2.17

OVER ALL AVERAGE BETWEEN COS & PSOS = 2.06

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III YEAR VI SEMESTER – COURSE - VIII- PROJECT

	MAPPING(COs & PSOs)									
	PO1 Essential Domain Knowledge	PO2 Creative and critical thinking and problem solving abilities	PO3 Communication Skills and Team Work	PO4 Digital Capabilities	PO5 Social Responsibilities, Ethical and Environmental Competency	PO6 Employability and Research related Skills	PO7 Life-Long Learning	PSO1	PSO2	PS 03
CO1	3	1	2	2	3	2	1	-	3	2
CO2	2	-	3	2	-	1	2	3	-	2
CO3	3	2	1	3	3	2	-	1	3	-
CO4	-	3	-	2	-	3	2	3	2	1
CO5	1	-	3	-	1	-	3	2	1	2
Average	2.25	2.0	2.25	2.25	2.33	2.0	2.0	2.25	2.25	1.75

OVER ALL AVERAGE BETWEEN COS & POS =2.15

OVER ALL AVERAGE BETWEEN COS & PSOS = 2.08

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III YEAR VI SEMESTER – PAPER- VIII- PROJECT

	MAPPING(COs & PSOs)									
	PO1 Essential Domain Knowledge	PO2 Creative and critical thinking and problem solving abilities	PO3 Communication Skills and Team Work	PO4 Digital Capabilities	PO5 Social Responsibilities, Ethical and Environmental Competency	PO6 Employability and Research related Skills	PO7 Life-Long Learning	PSO1	PSO2	PSO3
CO1	3	2	-	3	2	3	-	2	3	3
CO2	1	3	3	3	3	1	3	3	2	-
CO3	3	2	3	-	2	3	3	3	2	3
Average	2.3	2.3	2.0	2.0	2.3	2.3	2.0	2.6	2.3	2.0

OVER ALL AVERAGE BETWEEN COS & POS =2.17
OVER ALL AVERAGE BETWEEN COS & PSOS = 2.3

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III YEAR – CHEMISTRY THEORY

COs	MAPPING (COs & POs)							MAPPING (COs & PSOs)		
	PO1 Essential Domain Knowledge	PO2 Creative and critical thinking and problem solving abilities	PO3 Communication Skills and Team Work	PO4 Digital Capabilities	PO5 Social Responsibilities, Ethical and Environmental Competency	PO6 Employability and Research related Skills	PO7 Life-Long Learning	PSO1	PSO2	PSO3
PAPER -I	2.25	2.8	2.0	2.6	3.5	3.0	2.0	3.5	2.75	2.0
PAPER -II	2.6	2.25	2.75	2.5	2.66	2.33	2.0	2.25	2.5	2.33
PAPER -III	2.2	2.0	2.33	2.66	2.33	2.0	2.25	2.33	2.33	2.0
PAPER -IV	2.0	2.33	2.0	1.75	2.0	2.0	2.0	2.0	2.0	2.5
PAPER -V	2.0	2.0	2.33	2.5	2.33	2.0	2.0	2.33	2.0	2.5
PAPER -VI	2.75	2.33	2.0	2.0	2.0	2.5	2.0	1.75	1.75	2.66
PAPER -VII	2.5	2.33	2.33	2.0	2.0	2.0	2.5	2.66	1.75	1.66
PAPER -VIII	2.25	2.0	2.25	2.25	2.33	2.0	2.0	2.25	2.25	1.75
Average	2.06	2.25	2.24	2.28	2.39	2.22	2.09	2.38	2.16	2.17

OVER ALL AVERAGE BETWEEN COS & POS =2.21
OVER ALL AVERAGE BETWEEN COS & PSOS =2.23

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DEPARTMENT OF COMMERCE

Sl. No	Semester	Course Code	Course Title		Course Outcomes (Cos)	Program Outcomes (POs)	Program Specific Outcomes (PSOs)
1	I	BCO1S-1K	FUNDAMENTALS OF ACCOUNTING	CO1	Identify transactions and events that need to be recorded in the books of accounts	PO1, PO2, PO6, PO7.	PSO1, PSO2, PSO3.
				CO2	Equip with the knowledge of accounting process and preparation of final accounts of sole trader.	PO1, PO2, PO3, PO5, PO6, PO7.	PSO1, PSO2, PSO3.
				CO3	Develop the skill of recording financial transactions and preparation of reports in accordance with GAAP.	PO1, PO2, PO3, PO6, PO7.	PSO1, PSO2, PSO3.
				CO4	Analyze the difference between cash book and pass book in terms of balance and make reconciliation.	PO1, PO2, PO3, PO4, PO6, PO7.	PSO1, PSO2, PSO3.
				CO5	Critically examine the balance sheets of a sole trader for different accounting periods	PO1, PO2, PO3, PO4, PO5, PO6, PO7.	PSO1, PSO2, PSO3.
				CO6	Design new accounting formulas & principles for business organizations.	PO1 PO2, PO5, PO6, PO7	PSO1, PSO2, PSO3.
2	I	BCO1S	Business	CO1		PO1, PO2, PO3,	PSO1, PSO2,

		-2K	Organization and Management			Understand different forms of business organizations.	PO5, PO6	PSO3
				CO2		Comprehend the nature of Joint Stock Company and formalities to promote a Company	PO1, PO2, PO3, PO6,	PSO1, PSO2, PSO3.
				CO3		Describe the Social Responsibility of Business towards the society.	PO1, PO2, PO3,PO7.	PSO1, PSO2, PSO3.
				CO4		Critically examine the various organizations of the business firms And judge the best among them	PO1, PO2, PO3, PO5, PO6,PO7.	PSO1, PSO2, PSO3.
				CO5		Design and plant register business firm. Prepare different Documents to register a company at his own	PO1, PO2, PO3, PO4, PO6, PO7.	PSO1, PSO2, PSO3.
				CO6		Articulate new models of business organizations.	PO1,PO2,PO3,PO5,PO6,PO7	PSO1, PSO2, PSO3.
3	I	BCO1S-3K	Business Environment	CO1		Understand the concept of business environment	PO1, PO2, PO3, PO5,PO7.	PSO1, PSO2, PSO3.
				CO2		Define Internal and External elements affecting business environment.	PO1, PO2, PO3, PO7.	PSO1, PSO2, PSO3.
				CO3		Explain the economic trends and its effect on Government policies..	PO1, PO2, PO3,,PO5, PO6, PO7.	PSO1, PSO2, PSO3.
				CO4		Critically examine the recent developments in economic and Business policies of the Government	PO1, PO2, PO3, PO6, PO7.	PSO1, PSO2, PSO3.
				CO5		Evaluate and judge the best business policies in Indian business environment	PO1, PO2, PO3, PO6, PO7.	PSO1, PSO2, PSO3.
				CO6		Develop the new ideas for creating good business environment	PO1, PO2, PO3, PO6, PO7.	PSO1, PSO2, PSO3.
4	II	BCO2S-1K	Financial Accounting	CO1		Understand the concept of consignment and learn the accounting treatment of the various aspects of consignment.	PO1, PO2, PO3,, PO6, PO7.	PSO1, PSO2, PSO3..
				CO2		Analyze the accounting process and preparation of accounts	PO1, PO2,	PSO1, PSO2,

							PO3,PO5, PO6, PO7.	PSO3.
				CO3	Distinguish Joint Venture and Partnership and to learn the Methods of maintaining records under Joint Venture		PO1, PO2, PO3, , PO5, PO6, PO7.	PSO1, PSO2, PSO3.
				CO4	Determine the use full life and value of the depreciable assets And maintenance of Reserves in business entities		PO1, PO2, PO3, PO5, PO6, PO7.	PSO1, PSO2, PSO3.
				CO5	Design an accounting system for models of Businesses a this own using the principles of existing accounting system		PO1, PO2, PO3, PO4, PO7.	PSO1, PSO2, PSO3.
5	II	BCO2S -2K	Business Economics	CO1	Describe the nature of economics in dealing with the issues of scarcity of resources.		PO1, PO2, PO3, PO5, PO6, PO7.	PSO1, PSO2, PSO3.
				CO2	Analyze supply and demand analysis and its impact on Consumer behavior.		PO1, PO2, PO3, PO5, PO6, PO7.	PSO1, PSO2, PSO3.
				CO3	Evaluate the factors, such as production and costs affecting Firms behavior.		PO1, PO2, PO3, PO5,PO6, PO7.	PSO1, PSO2, PSO3.
				CO4	Use economic analysis to evaluate controversial issues and policies.		PO1, PO2, PO3, PO5, PO6, PO7.	PSO1, PSO2, PSO3
				CO5	Apply economic models for managerial problems, identify their relationships, and formulate the decision making tools to be applied for business.		PO1, PO2, PO3, PO5, PO6, PO7.	PSO1, PSO2, PSO3, PSO4.
6	II	BCO2S -3K	Banking Theory and Practical	CO1	Understand the basic concepts of banks and functions of commercial banks.		PO1, PO2, PO3, PO4, PO7.	PSO1, PSO2, PSO3.
				CO2	Demonstrate an awareness of law and practice in a banking context.		PO1, PO2, PO3, PO5, PO6, PO7.	PSO1, PSO2, PSO3.
				CO3	Engage in critical analysis of the practice of banking law		PO1, PO2, PO3,	PSO1, PSO2,

						PO5, PO6, PO7.	PSO3.
				CO4	Organize information as it relates to the regulation of banking Products and services	PO1, PO2, PO3, PO5, PO7.	PSO1, PSO2, PSO3.
				CO5	Critically examine the current scenario of Indian Banking system.	PO1, PO2, PO3, PO7.	PSO1, PSO2, PSO3.
7	III	BCO3S -1K	Advanced Accounting	CO1	Understand the concept of Non-profit organizations and its accounting process	PO1, PO2, PO3, PO5, PO7.	PSO1, PSO2, PSO3.
				CO2	Comprehend the concept of single-entry system and Preparation of statement of affairs	PO1, PO2, PO3,PO6, PO7	PSO1, PSO2, PSO3.
				CO3	Familiarize with the legal formalities at the time of Dissolution of the firm	PO1, PO2, PO3, PO4, PO6, PO7.	PSO1, PSO2, PSO3.
				CO4	Prepare financial statements for partnership firm on Dissolution of the firm.	PO1, PO2, PO3, PO4, PO6, PO7.	PSO1, PSO2, PSO3.
				CO5	Employ critical thinking skills to understand the difference between the dissolution of the firm and dissolution of partnership	PO1, PO2, PO3, PO4, PO5, PO6, PO7.	PSO1, PSO2, PSO3.

Sl. No	Semester	Course Code	Course Title	Course Outcomes (Cos)		Program Outcomes (POs)	Program Specific Outcomes (PSOs)
8	III	BCO3S-2K	Business Statistics	CO1	Understand the importance of Statistics in real life	PO1, PO2, PO3, PO5, PO6, PO7.	PSO1, PSO2, PSO3.
				CO2	Formulate complete, concise, and correct mathematical proofs.	PO1, PO2, PO3, PO5, PO6, PO7.	PSO1, PSO2, PSO3.
				CO3	Frame problems using multiple mathematical and statistical tools, measuring relationships by using standard techniques	PO1, PO2, PO3, PO6, PO7.	PSO1, PSO2, PSO3.
				CO4	Build and assess data-based models	PO1, PO2, PO3, PO6, PO7.	PSO1, PSO2, PSO3.
				CO5	Learn and apply the statistical tools in day life.	PO1, PO2, PO3, PO5, PO6, PO7.	PSO1, PSO2, PSO3.
9	III	BCO3S-3K	Marketing	CO1	Develop an idea about marketing and marketing environment.	PO1, PO2, PO3, PO7.	PSO1, PSO2, PSO3
				CO2	Understand the consumer behavior and market Segmentation process	PO1, PO2, PO3, PO4, PO6, PO7.	PSO1, PSO2, PSO3.
				CO3	Comprehend the product life cycle and product line decisions.	PO1, PO2, PO3, PO4, PO7.	PSO1, PSO2, PSO3.
				CO4	Know the process of packaging and labeling to attract the customers.	PO1, PO2, PO3, PO4, PO5, PO6, PO7.	PSO1, PSO2, PSO3.
				CO5	Formulate new marketing strategies for a specific new product.	PO1, PO2, PO3, PO4, PO6, PO7.	PSO1, PSO2, PSO3.

	III		Programming with C &c++	CO1	Develop programming skills	PO1, PO2, PO3, PO4, PO6,PO7	PSO1, PSO2, PSO3
				CO2	Declaration of variables and constants use of operators and expressions	PO1, PO2, PO3, PO4, PO6,PO7.	PSO1, PSO2, PSO3.
				CO3	Learn the syntax and semantics of programming language	PO1, PO2, PO3, PO4, PO6,PO7.	PSO1, PSO2, PSO3.
				CO4	Be familiar with programming environment of C and C++	PO1, PO2, PO3, PO4, PO6,PO7.	PSO1, PSO2, PSO3.
				CO5	Ability to work with textual information (characters and strings) & arrays.	PO1, PO2, PO3, PO4, PO6,PO7.	PSO1, PSO2, PSO3.
10	IV	BCO4 S-1K	Corporate Accounting	CO1	Understand the Accounting treatment of Share Capital and aware of process of bookbuilding	PO1, PO2, PO3 .PO5, PO7.	PSO1, PSO2, PSO3.
				CO2	Demonstrate the procedure for issue of bonus shares and buy back of shares.	PO1, PO2, PO3, PO4, PO7.	PSO1, PSO2, PSO3.
				CO3	Comprehend the important provisions of Companies Act,2013andprepare final accounts of accompany with Adjustments.	PO1, PO2, PO3, PO6, PO7.	PSO1, PSO2, PSO3.
				CO4	Participate in the preparation of consolidated accounts for a Corporate group	PO1, PO2, PO3, PO5, PO6, PO7.	PSO1, PSO2, PSO3.
				CO5	Understand analysis of complex issues, formulation of well-reasoned arguments and reaching better conclusions.	PO1, PO2, PO3, PO4, PO6, PO7.	PSO1, PSO2, PSO3.
11	IV	BCO4 S-2K	CostandManageme ntAccounting	CO1	Understand various costing methods and management techniques.	PO1, PO2, PO4, PO6, PO7.	PSO1, PSO2, PSO3..
				CO2	Apply Cost and Management accounting methods for both Manufacturing and service industry	PO1, PO2, PO3, PO4, PO5, PO6, PO7.	PSO1, PSO2, PSO3.

						PO1, PO2, PO4, PO5, PO6, PO7.	PSO1, PSO2, PSO3.
				CO3	Prepare cost sheet, quotations, and tenders to organization For different works...	PO1, PO2, PO4, PO5, PO6, PO7.	PSO1, PSO2, PSO3.
				CO4	Analyze cost-volume-profit techniques to determine optimal Managerial decisions	PO1, PO2, PO4, PO5, PO6, PO7.	PSO1, PSO2, PSO3.
				CO5	Compare and contrast the financial statements of firms and Interpret the results.	PO1, PO2, PO3, PO4, PO7.	PSO1, PSO2, PSO3.
12	IV	BCO4 S-3K	IncomeTax	CO1	Acquire the complete knowledge of the tax evasion, tax avoidance and tax planning.	PO1, PO2, PO4, PO5, PO6, PO7.	PSO1, PSO2, PSO3.
				CO2	Understand the provisions and compute income tax for various sources.	PO1, PO2, PO4, PO5, PO6, PO7.	PSO1, PSO2, PSO3.
				CO3	Grasp amendments made from time to time in Finance Act.	PO1, PO2, PO4, PO5, PO6, PO7.	PSO1, PSO2, PSO3.
				CO4	Compute total income and define tax complicacies and structure.	PO1, PO2, PO4, PO5, PO6, PO7.	PSO1, PSO2, PSO3
				CO5	Prepare and File IT returns of individual at his own. Compare and contrast the financial statements of firms and interpret the results.	PO1, PO2, PO4, PO5, PO6, PO7.	PSO1, PSO2, PSO3, PSO4.
13	IV	BCO4 S-4K	BusinessLaw	CO1	Understand the legal environment of business and laws of business.	PO1, PO2, PO3, PO5, PO7.	PSO1, PSO2, PSO3.
				CO2	Highlight the security aspects in the present cyber-crime scenario.	PO1, PO2, PO3, PO5, PO6, PO7.	PSO1, PSO2, PSO3.
				CO3	Apply basic legal knowledge to business transactions.	PO1, PO2, PO3, PO5, PO6,	PSO1, PSO2, PSO3.

						PO7.	
				CO4	Understand the various provisions of Company Law	PO1, PO2, PO3, PO5, PO7.	PSO1, PSO2, PSO3.
				CO5	.Engage critical thinking to predict outcomes and recommend appropriate action on issues relating to business associations And legal issues...	PO1, PO2, PO3, PO7.	PSO1, PSO2, PSO3.
				CO6	Integrate concept of business law with foreign trade.	PO1,PO2, PO5,PO6 PO7.	PSO1, PSO2, PSO3.
14	IV	BCO4 S-5K	Auditing	CO1	Understanding the meaning and necessity of audit in modern era	PO1, PO2, PO3, PO7.	PSO1, PSO2, PSO3.
				CO2	Comprehend the role of auditor in avoiding the corporate frauds.	PO1, PO2, PO3, PO7	PSO1, PSO2, PSO3.
				CO3	Identify the steps involved in performing audit process	PO1, PO2, PO3, PO6, PO7.	PSO1, PSO2, PSO3.
				CO4	Determine the appropriate audit report for a given audit situation	PO1, PO2, PO3, PO6, PO7.	PSO1, PSO2, PSO3.
				CO5	Apply auditing practices to different types of business entities.	PO1, PO2, PO3, PO5, PO6, PO7.	PSO1, PSO2, PSO3.
				CO6	Plan an audit by considering concepts of evidence, risk and materiality	PO1, PO2, PO3, PO5, PO6, PO7.	PSO1, PSO2, PSO3.
15	IV		Database Management system	CO1	Understand the role of a database management system in an organization	PO1, PO2, PO3, PO4, PO6,PO7.	PSO1, PSO2, PSO3.
				CO2	Understand basic database concepts, including the an organization.	PO1, PO2, PO3, PO4, PO5, PO6, PO7.	PSO1, PSO2, PSO3.
				CO3	Understand and successfully apply logical database design principles, including E-R Diagrams and database normalization.	PO1, PO2, PO3, PO4, PO6,PO7.	PSO1, PSO2, PSO3.

				CO4	To design and build a simple database system and demonstrate competence with the fundamental tasks involved with modeling, designing and implementing a DBMS.	PO1, PO2, PO3, PO4, PO6, PO7.	PSO1, PSO2, PSO3.
				CO5	Understand Functional Dependency and Functional Decompostion.	PO1, PO2, PO3, PO4, PO5, PO6, PO7.	PSO1, PSO2, PSO3.

Sl. No	Sem ester	Course Code	Course Title	Course Outcomes (Cos)		Program Outcomes (POs)	Program Specific Outcomes (PSOs)
15	IV	BCO4S -6K	GoodsandServi ceTaxes	CO1	Understand the basic principles underlying the Indirect Taxation Statutes.	PO1, PO2, PO3, PO4, PO5, PO6, PO7.	PSO1, PSO2, PSO3.
				CO2	Examine the method of tax credit. Input and Output Tax credit and Cross Utilization of Input Tax Credit..	PO1, PO2, PO3, PO4, PO5, PO6, PO7.	PSO1, PSO2, PSO3.
				CO3	Identify and analyze the procedural aspects under different Applicable statutes related to GST.	PO1, PO2, PO3, PO4, PO6, PO7.	PSO1, PSO2, PSO3.
				CO4	Compute the assessable value of transactions related to goods and services for levy and determination of duty liability.	PO1, PO2, PO3, PO4, PO6, PO7.	PSO1, PSO2, PSO3.
				CO5	Develop various GST Returns and reports for business Transactions in Tally	PO1, PO2, PO3, PO4, PO5, PO6, PO7.	PSO1, PSO2, PSO3.
16	VI	BCO6S -18A	MANAGEME NTACCOUNT INGANDPRA CTICE	CO1	Understand the nature and scope of management accounting and differentiate management accounting, financial Accounting and cost accounting.	PO1, PO2, PO3, PO4, PO7.	PSO1, PSO2, PSO3
				CO2	Compute ratios and draw inferences	PO1, PO2, PO3, PO4, PO6, PO7.	PSO1, PSO2, PSO3.
				CO3	Analyze the performance of the organization by preparing Funds flow statement and cash flow statements	PO1, PO2, PO3, PO4, PO7.	PSO1, PSO2, PSO3.
				CO4	Prepare cash budget, fixed budget and flexible budget.	PO1, PO2, PO3, PO4, PO5, PO6, PO7.	PSO1, PSO2, PSO3.
17	VI	BCO6S -19A	COSTCONTR OLTECHNIQ UES	CO1	Differentiate cost control, cost reduction concepts and identify effective techniques.	PO1, PO2, PO3, PO4. PO7.	PSO1, PSO2, PSO3.
				CO2	Allocate over heads on the basis of Activity Based Costing	PO1, PO2, PO3, PO4, PO7.	PSO1, PSO2, PSO3.
				CO3	Evaluate techniques of cost audit and rules for cost record.	PO1, PO2, PO3, PO4, PO6, PO7.	PSO1, PSO2, PSO3.

				CO4	Appraise the application of marginal costing techniques to evaluate performances, fix selling price, make or buy decisions	PO1, PO2, PO3, PO4, PO6, PO7.	PSO1, PSO2, PSO3.
18	VI	BCO6S-20B	LIFEINSURANCEWITHPRACTICE	CO1	Understand the Features of Life Insurance ,schemes and policies and insurance companies in India	PO1, PO2, PO3, PO6, PO7.	PSO1, PSO2, PSO3..
				CO2	Analyze various schemes and policies related to Life Insurancesector	PO1, PO2, PO3, PO5, PO6, PO7.	PSO1, PSO2, PSO3.
				CO3	Choose suitable insurance policy for given situation and Respective persons	PO1, PO2, PO3, PO5, PO6, PO7.	PSO1, PSO2, PSO3.
				CO4	Acquire Insurance Agency skills and other administrative skills	PO1, PO2, PO3, PO5, PO6, PO7.	PSO1, PSO2, PSO3.
				CO5	Acquire skill of settlement of claims under various circumstances	PO1, PO2, PO3, PO5,PO6, PO7.	PSO1, PSO2, PSO3.
19	VI	BCO6S-21B	GENERALINSURANCE PROCEDURE ANDPRACTICE	CO1	Understand the Features of General Insurance and InsuranceCompaniesin India	PO1, PO2, PO3, PO5, PO6, PO7.	PSO1, PSO2, PSO3.
				CO2	Analyze various schemes and policies related to GeneralInsurance sector	PO1, PO2, PO3, PO5, PO6, PO7.	PSO1, PSO2, PSO3.
				CO3	Choose suitable insurance policy under Health, Fire, Motor, andMarine Insurances	PO1, PO2, PO3, PO5,PO6, PO7.	PSO1, PSO2, PSO3.
				CO4	Acquire General Insurance Agency skills and administrative skills	PO1, PO2, PO3, PO5, PO6, PO7.	PSO1, PSO2, PSO3

				CO5	.Apply skill for settlement of claims under various circumstances	PO1, PO2, PO3, PO5, PO6, PO7.	PSO1, PSO2, PSO3, PSO4.
20	VI	BCO6S-16C	DIGITAL MARKETING	CO1	.Analyze online Micro and Macro Environment	PO1, PO2, PO3, PO5, PO7.	PSO1, PSO2, PSO3.
				CO2	Designandcreatewebsite	PO1, PO2, PO3, PO4, PO5, PO6, PO7.	PSO1, PSO2, PSO3.
				CO3	Discuss search engine marketing	PO1, PO2, PO3, PO4, PO5, PO6, PO7.	PSO1, PSO2, PSO3.
				CO4	Create blogs,videos,and share	PO1, PO2, PO3, PO4, PO5, PO7.	PSO1, PSO2, PSO3.
21	VI	BCO6S-17C	Service Marketing	CO1	Discuss the reasons for growth of service sector	PO1, PO2, PO3, PO5, PO7.	PSO1, PSO2, PSO3.
				CO2	Examine the marketing strategies of Banking Services, insurance and education services.	PO1, PO2, PO3, PO5. PO7	PSO1, PSO2, PSO3.
				CO3	Review conflict handling and customer Responses in services marketing	PO1, PO2, PO3, PO5, PO6, PO7.	PSO1, PSO2, PSO3.
				CO4	Describe segmentation strategies in service marketing	PO1, PO2, PO3, PO5, PO6, PO7.	PSO1, PSO2, PSO3.
				CO5	Suggest measures to improve services quality and their Service delivery	PO1, PO2, PO3, PO5, PO6, PO7.	PSO1, PSO2, PSO3.

BCO1S-1K   **FUNDAMENTALS OF ACCOUNTING**   **I YEAR – B.COM – I SEMESTER**

	MAPPING(COs & POs)							MAPPING(COs & PSOs)		
	PO1 Essential Domain Knowledge	PO2 Creative and critical thinking and problem solving abilities	PO3 Communication Skills and Team Work	PO4 Digital Capabilities	PO5 Social Responsibilities, Ethical and Environmental Competency	PO6 Employability and Research related Skills	PO7 Life-Long Learning	PSO1	PSO2	PSO3
CO1	3	2	---	---	---	3	3	2	3	3
CO2	3	3	2	---	3	3	2	3	3	3
CO3	3	3	3	2	---	3	3	3	2	3
CO4	3	3	3	2	---	3	3	3	3	3
CO5	3	3	3	1	3	3	3	3	3	2
CO6	3	2	---	---	2	3	2	3	2	3
Average	3	2.6	2.7	1.6	2.6	3	2.6	2.8	2.6	2.8

OVER ALL AVERAGE BETWEEN COS & POS = 2.5   **OVER ALL AVERAGE BETWEEN COS & PSOS = 2.7**

BCO1S-2KBusinessOrganizationandManagement I YEAR – B.Com – I SEMESTER –

	MAPPING(COs & POs)							MAPPING(COs & PSOs)		
	PO1 Essential Domain Knowledge	PO2 Creative and critical thinking and problem solving abilities	PO3 Communication Skills and Team Work	PO4 Digital Capabilities	PO5 Social Responsibilities, Ethical and Environmental Competency	PO6 Employability and Research related Skills	PO7 Life-Long Learning	PSO1	PSO2	PSO3
CO1	3	2	--	--	3	3	--	2	3	3
CO2	3	3	1	--	--	3	--	3	3	2
CO3	3	3	1	--	3	--	2	3	3	3
CO4	3	2	--	--	2	3	2	3	2	3
CO5	3	3	1	2	--	3	2	2	3	3
CO6	3	2	1	--	1	1	2	3	2	2
Average	**3**	**2.5**	**1**	**2**	**2.2**	**2.6**	**2**	**2.6**	**2.6**	**2.6**

OVER ALL AVERAGE BETWEEN COS & POS = 2.1 OVER ALL AVERAGE BETWEEN COS & PSOS = 2.6

BCO1S-3K Business Environment= I YEAR – B.COM – I SEMESTER

	MAPPING (COs & POs)							MAPPING(COs & PSOs)		
	PO1 Essential Domain Knowledge	PO2 Creative and critical thinking and problem solving abilities	PO3 Communication Skills and Team Work	PO4 Digital Capabilities	PO5 Social Responsibilities, Ethical and Environmental Competency	PO6 Employability and Research related Skills	PO7 Life-Long Learning	PSO1	PSO2	PSO3
CO1	3	---	2	--	--	--	1	3	2	3
CO2	3	2	3	--	--	--	1	2	3	3
CO3	3	1	3	---	3	3	1	3	2	3
CO4	3	2	2	---	--	2	1	3	2	2
CO5	3	---	1	---	--	3	2	3	2	3
CO6	3	2	2	---	--	3	1	2	3	2
Average	**3**	**1.7**	**2.1**	**---**	**3**	**2.7**	**1.5**	**2.6**	**2.3**	**2.6**

OVER ALL AVERAGE BETWEEN COS & POS = 2.6   **OVER ALL AVERAGE BETWEEN COS & PSOS = 2.5**

BCO2S-1K Financial Accounting I YEAR – B.COM – II SEMESTER

	MAPPING (COs & POs)							MAPPING(COs & PSOs)		
	PO1 Essential Domain Knowledge	PO2 Creative and critical thinking and problem solving abilities	PO3 Communication Skills and Team Work	PO4 Digital Capabilities	PO5 Social Responsibilities, Ethical and Environmental Competency	PO6 Employability and Research related Skills	PO7 Life-Long Learning	PSO1	PSO2	PSO3
CO1	3	2	3	--	--	2	2	3	2	3
CO2	3	3	3	--	2	3	3	3	3	2
CO3	3	2	2	--	--	3	2	2	3	2
CO4	3	3	2	--	--	2	3	3	2	3
CO5	3	3	2	--	--	--	2	3	2	3
Average	**3**	**2.6**	**2.4**	**--**	**2**	**2.5**	**2.4**	**2.8**	**2.4**	**2.6**

OVER ALL AVERAGE BETWEEN COS & POS = 2.1   **OVER ALL AVERAGE BETWEEN COS & PSOS = 2.6**

BCO2S-2KBusinessEconomics
I YEAR – B.COM – II SEMESTER

	MAPPING (COs & POs)							MAPPING(COs & PSOs)		
	PO1 **Essential Domain Knowledge**	PO2 **Creative and critical thinking and problem solving abilities**	PO3 **Communication Skills and Team Work**	PO4 **Digital Capabilities**	PO5 **Social Responsibilities, Ethical and Environmental Competency**	PO6 **Employability and Research related Skills**	PO7 **Life-Long Learning**	PSO1	PSO2	PSO3
CO1	3	2	1	--	3	2	2	3	2	3
CO2	3	3	3	--	2	3	3	2	2	3
CO3	3	2	2	--	3	2	2	3	3	2
CO4	3	3	3	--	2	3	1	3	2	3
CO5	3	2	2	--	1	2	1	3	3	2
Average	**3**	**2.4**	**2.2**	**--**	**2.2**	**2.4**	**1.8**	**2.8**	**2.4**	**2.6**

OVER ALL AVERAGE BETWEEN COS & POS = 2.3   **OVER ALL AVERAGE BETWEEN COS & PSOS = 2.6**

BCO2S-3KBankingTheoryandPracticeI YEAR – B.COM – II SEMESTER

	MAPPING (COs & POs)							MAPPING(COs & PSOs)		
	PO1 Essential Domain Knowledge	PO2 Creative and critical thinking and problem solving abilities	PO3 Communication Skills and Team Work	PO4 Digital Capabilities	PO5 Social Responsibilities, Ethical and Environmental Competency	PO6 Employability and Research related Skills	PO7 Life-Long Learning	PSO1	PSO2	PSO3
CO1	3	2	3	--	--		1	3	2	2
CO2	2	3	2	--	3	3	2	3	3	2
CO3	3	2	2	--	2	2	3	2	2	3
CO4	3	3	3	--	3	3	3	3	2	3
CO5	--	2	2	--	--	--	3	3	3	2
Average	**2.7**	**2.4**	**2.4**	**--**	**2.6**	**2.6**	**2**	**2.8**	**2.4**	**2.4**

OVER ALL AVERAGE BETWEEN COS & POS = 2.4   **OVER ALL AVERAGE BETWEEN COS & PSOS = 2.5**

BCO3S-1K AdvancedAccounting   II YEAR – B.COM – III SEMESTER

	MAPPING (COs & POs)							MAPPING(COs & PSOs)		
	PO1 Essential Domain Knowledge	PO2 Creative and critical thinking and problem solving abilities	PO3 Communication Skills and Team Work	PO4 Digital Capabilities	PO5 Social Responsibilities, Ethical and Environmental Competency	PO6 Employability and Research related Skills	PO7 Life-Long Learning	PSO1	PSO2	PSO3
CO1	2	3	3	---	3	--	3	3	2	2
CO2	3	3	3	---	--	3	1	2	3	3
CO3	3	3	2	1	--	2	2	3	3	2
CO4	3	3	3	2	--	2	3	3	3	2
CO5	2	2	2	2	3	3	2	3	2	3
Average	**2.6**	**2.8**	**2.6**	**1.6**	**3**	**2.5**	**2.2**	**2.8**	**2.6**	**2.4**

OVER ALL AVERAGE BETWEEN COS & POS = 2.4   **OVER ALL AVERAGE BETWEEN COS & PSOS = 2.6**

BCO3S-2K   BUSINESS   STATISTICS II YEAR – B.COM – III SEMESTER

	MAPPING (COs & POs)							MAPPING(COs & PSOs)		
	PO1 Essential Domain Knowledge	PO2 Creative and critical thinking and problem solving abilities	PO3 Communication Skills and Team Work	PO4 Digital Capabilities	PO5 Social Responsibilities, Ethical and Environmental Competency	PO6 Employability and Research related Skills	PO7 Life-Long Learning	PSO1	PSO2	PSO3
CO1	3	3	2	2	2	2	2	2	2	3
CO2	3	2	3	--	3	3	2	3	2	2
CO3	3	3	2	---	--	2	2	3	3	3
CO4	3	3	--	2	--	2	3	2	2	3
CO5	3	2	--	3	3	3	3	2	2	3
Average	3	2.6	2.3							

OVER ALL AVERAGE BETWEEN COS & POS = 2.63   **OVER ALL AVERAGE BETWEEN COS & PSOS = 2.65**

	MAPPING (COs & POs)							MAPPING(COs & PSOs)		
	PO1 Essential Domain Knowledge	PO2 Creative and critical thinking and problem solving abilities	PO3 Communication Skills and Team Work	PO4 Digital Capabilities	PO5 Social Responsibilities, Ethical and Environmental Competency	PO6 Employability and Research related Skills	PO7 Life-Long Learning	PSO1	PSO2	PSO3
CO1	3	2	3	--	--	2	2	3	2	3
CO2	3	3	3	--	--	--	3	3	3	2
CO3	3	3	2	--	--	--	3	2	3	3
CO4	3	3	3	--	2	3	2	3	3	2
CO5	3	2	3	--	--	3	3	2	3	3
Average	3	2.6	2.8	--	2	2.6	2.6	2.6	2.8	2.6

OVER ALL AVERAGE BETWEEN COS & POS = 2.6   **OVER ALL AVERAGE BETWEEN COS & PSOS = 2.6**

BCO4S-1K   CORPORATING ACCOUNTING II YEAR – B.COM – IV SEMESTER

	MAPPING (COs & POs)							MAPPING(COs & PSOs)		
	PO1 Essential Domain Knowledge	PO2 Creative and critical thinking and problem solving abilities	PO3 Communication Skills and Team Work	PO4 Digital Capabilities	PO5 Social Responsibilities, Ethical and Environmental Competency	PO6 Employability and Research related Skills	PO7 Life-Long Learning	PSO1	PSO2	PSO3
CO1	3	2	1	--	3	--	2	3	2	3
CO2	3	3	2	1	--	---	3	2	3	3
CO3	3	3	1	--	--	3	3	3	3	2
CO4	3	3	2	--	3	3	3	3	3	2
CO5	3	3	1	2	--	3	3	3	2	3
Average	3	2.8	1.4	1.5	3	3	2.8	2.8	2.6	2.6

OVER ALL AVERAGE BETWEEN COS & POS = 2.5   **OVER ALL AVERAGE BETWEEN COS & PSOS = 2.6**

BCO4S-2K   COST ANDMANAGEMENT ACCOUNTING   **I YEAR – B.COM – I SEMESTER**

	MAPPING (COs & POs)							MAPPING(COs & PSOs)		
	PO1 Essential Domain Knowledge	PO2 Creative and critical thinking and problem solving abilities	PO3 Communication Skills and Team Work	PO4 Digital Capabilities	PO5 Social Responsibilities, Ethical and Environmental Competency	PO6 Employability and Research related Skills	PO7 Life-Long Learning	PSO1	PSO2	PSO3
CO1	3	2	--	2	----	2	1	2	3	3
CO2	3	3	2	2	2	3	2	3	3	2
CO3	3	3	--	2	3	3	1	3	3	3
CO4	3	3	--	2	3	3	2	3	2	3
CO5	3	3	--	2	--	3	1	2	3	3
Average	3	2.8	2	2	2.6	2.8	1.4	2.6	2.8	2.8

OVER ALL AVERAGE BETWEEN COS & POS = 2.3   **OVER ALL AVERAGE BETWEEN COS & PSOS = 2.7**

	MAPPING (COs & POs)							MAPPING(COs & PSOs)		
	PO1 **Essential Domain Knowledge**	PO2 **Creative and critical thinking and problem solving abilities**	PO3 **Communication Skills and Team Work**	PO4 **Digital Capabilities**	PO5 **Social Responsibilities, Ethical and Environmental Competency**	PO6 **Employability and Research related Skills**	PO7 **Life-Long Learning**	PSO1	PSO2	PSO3
CO1	3	2	--	--	--	2	2	3	2	3
CO2	3	2	--	--	--	3	3	2	3	3
CO3	3	3	--	--	--	3	3	3	3	2
CO4	3	3	--	--	--	3	3	3	2	3
CO5	3	3	--	--	--	3	2	3	3	3
Average	3	2.6	--	--	--	2.8	2.6	2.8	2.6	2.8

OVER ALL AVERAGE BETWEEN COS & POS = 2.7   **OVER ALL AVERAGE BETWEEN COS & PSOS = 2.7**

	MAPPING (COs & POs)							MAPPING(COs & PSOs)		
	PO1 Essential Domain Knowledge	PO2 Creative and critical thinking and problem solving abilities	PO3 Communication Skills and Team Work	PO4 Digital Capabilities	PO5 Social Responsibilities, Ethical and Environmental Competency	PO6 Employability and Research related Skills	PO7 Life-Long Learning	PSO1	PSO2	PSO3
CO1	3	2	2	--	2	2	2	2	3	3
CO2	3	3	3	--	3	3	2	3	3	2
CO3	3	2	2	--	3	3	2	3	2	3
CO4	3	2	3	--	2	3	2	3	3	2
CO5	3	2	3	--	3	3	2	2	2	3
CO6	3	2	3		3	3	2	3	3	2
Average	3	2.1	2.6	--	2.6	2.8	2	2.6	2.6	2.5

OVER ALL AVERAGE BETWEEN COS & POS = 2.5   **OVER ALL AVERAGE BETWEEN COS & PSOS = 2.5**

	MAPPING (COs & POs)							MAPPING(COs & PSOs)		
	PO1 Essential Domain Knowledge	PO2 Creative and critical thinking and problem solving abilities	PO3 Communication Skills and Team Work	PO4 Digital Capabilities	PO5 Social Responsibilities, Ethical and Environmental Competency	PO6 Employability and Research related Skills	PO7 Life-Long Learning	PSO1	PSO2	PSO3
CO1	3	2	2	--	--		1	3	2	3
CO2	3	2	2	--	--		2	2	3	2
CO3	3	3	2	--	--	2	2	3	3	2
CO4	3	2	3	--	--	2	2	3	3	3
CO5	3	3	2	--	3	2	2	3	3	3
CO6	3	3	2		3	3	2	3	2	3
Average	3	2.5	2.1	--	3	2.2	1.8	2.8	2.6	2.6

OVER ALL AVERAGE BETWEEN COS & POS = 2.4   **OVER ALL AVERAGE BETWEEN COS & PSOS = 2.7**

	MAPPING (COs & POs)							MAPPING (COs & PSOs)		
	PO1 Essential Domain Knowledge	PO2 Creative and critical thinking and problem solving abilities	PO3 Communication Skills and Team Work	PO4 Digital Capabilities	PO5 Social Responsibilities, Ethical and Environmental Competency	PO6 Employability and Research related Skills	PO7 Life-Long Learning	PSO1	PSO2	PSO3
CO1	3	2	1	1	2	1	2	2	3	2
CO2	3	3	2	2	3	2	3	3	3	2
CO3	3	3	3	3	--	3	3	3	2	3
CO4	3	3	2	3	--	3	3	2	3	3
CO5	3	3	3	3	3	3	3	3	2	3
Average	3	2.8	2.2	2.4	2.6	2.4	2.8	2.6	2.6	2.6

OVER ALL AVERAGE BETWEEN COS & POS = 2.6   **OVER ALL AVERAGE BETWEEN COS & PSOS = 2.6**

	MAPPING (COs & POs)							MAPPING(COs & PSOs)		
	PO1 **Essential Domain Knowledge**	PO2 **Creative and critical thinking and problem solving abilities**	PO3 **Communication Skills and Team Work**	PO4 **Digital Capabilities**	PO5 **Social Responsibilities, Ethical and Environmental Competency**	PO6 **Employability and Research related Skills**	PO7 **Life-Long Learning**	PSO1	PSO2	PSO3
CO1	3	2	2	2	--	--	2	2	3	2
CO2	3	2	3	2	--	3	2	3	3	2
CO3	3	3	3	3	--	--	3	2	3	3
CO4	3	3	3	3	3	2	3	3	2	3
Average	3	2.5	2.7	2.5	3	2.5	2.5	2.5	2.7	2.5

OVER ALL AVERAGE BETWEEN COS & POS = 2.6   **OVER ALL AVERAGE BETWEEN COS & PSOS = 2.6**

	MAPPING (COs & POs)							MAPPING(COs & PSOs)		
	PO1 Essential Domain Knowledge	PO2 Creative and critical thinking and problem solving abilities	PO3 Communication Skills and Team Work	PO4 Digital Capabilities	PO5 Social Responsibilities, Ethical and Environmental Competency	PO6 Employability and Research related Skills	PO7 Life-Long Learning	PSO1	PSO2	PSO3
CO1	2	2	2	2	---	---	2	2	2	2
CO2	3	3	3	2	---	---	2	2	3	3
CO3	3	3	2	3	---	3	2	3	3	3
CO4	3	3	3	3	---	3	3	3	3	2
Average	2.7	2.7	2.5	2.5	---	3	2.2	2.5	2.7	2.5

OVER ALL AVERAGE BETWEEN COS & POS = 2.6   **OVER ALL AVERAGE BETWEEN COS & PSOS = 2.6**

	MAPPING (COs & POs)							MAPPING(COs & PSOs)		
	PO1 Essential Domain Knowledge	PO2 Creative and critical thinking and problem solving abilities	PO3 Communication Skills and Team Work	PO4 Digital Capabilities	PO5 Social Responsibilities, Ethical and Environmental Competency	PO6 Employability and Research related Skills	PO7 Life-Long Learning	PSO1	PSO2	PSO3
CO1	2	2	2	---	--	2	2	2	2	2
CO2	3	2	2	---	2	2	2	3	3	2
CO3	3	3	3	---	2	3	3	2	3	2
CO4	3	3	3	---	3	3	3	3	3	3
CO5	3	3	3	---	--	3	3	3	3	3
Average	2.8	2.6	2.6	---	2	2.6	2.6	2.6	2.8	2.4

OVER ALL AVERAGE BETWEEN COS & POS = 2.5   **OVER ALL AVERAGE BETWEEN COS & PSOS = 2.6**

BCO6S-21BGENERAL INSURANCEPROCEDURE AND PRACTICE III YEAR – B.COM – VI SEMESTER

	MAPPING (COs & POs)							MAPPING(COs & PSOs)		
	PO1 Essential Domain Knowledge	PO2 Creative and critical thinking and problem solving abilities	PO3 Communication Skills and Team Work	PO4 Digital Capabilities	PO5 Social Responsibilities, Ethical and Environmental Competency	PO6 Employability and Research related Skills	PO7 Life-Long Learning	PSO1	PSO2	PSO3
CO1	2	2	2	---	2	2	2	2	2	2
CO2	3	2	2	---	2	2	2	3	2	2
CO3	3	3	3	---	3	3	3	3	3	2
CO4	3	3	3	---	3	3	3	3	3	3
CO5	3	3	3	---	3	3	3	3	3	3
Average	2.8	2.6	2.6	---	2.6	2.6	2.6	2.8	2.6	2.4

OVER ALL AVERAGE BETWEEN COS & POS = 2.63   **OVER ALL AVERAGE BETWEEN COS & PSOS = 2.6**

BCO6S-16CDIGITAL MARKETING III YEAR – B.COM – VI SEMESTER

	MAPPING (COs & POs)							MAPPING(COs & PSOs)		
	PO1 Essential Domain Knowledge	PO2 Creative and critical thinking and problem solving abilities	PO3 Communication Skills and Team Work	PO4 Digital Capabilities	PO5 Social Responsibilities, Ethical and Environmental Competency	PO6 Employability and Research related Skills	PO7 Life-Long Learning	PSO1	PSO2	PSO3
CO1	2	2	2	---	2	--	2	2	2	2
CO2	3	2	2	2	3	2	2	3	2	2
CO3	3	3	3	3	3	3	3	3	3	3
CO4	3	3	3	3	3	--	3	3	3	3
Average	2.7	2.5	2.5	2.6	2.7	2.5	2.5	2.7	2.5	2.5

	MAPPING (COs & POs)							MAPPING(COs & PSOs)		
	PO1 Essential Domain Knowledge	PO2 Creative and critical thinking and problem solving abilities	PO3 Communication Skills and Team Work	PO4 Digital Capabilities	PO5 Social Responsibilities, Ethical and Environmental Competency	PO6 Employability and Research related Skills	PO7 Life-Long Learning	PSO1	PSO2	PSO3
CO1	2	2	2	---	2	---	2	2	2	2
CO2	3	2	2	---	2	---	2	3	2	2
CO3	3	3	3	---	3	2	3	3	3	2
CO4	3	3	3	---	3	3	3	3	3	3
CO5	3	3	3	---	3	3	3	3	3	3
Average	2.8	2.6	2.6	---	2.6	2.6	2.6	2.8	2.6	2.4

OVER ALL AVERAGE BETWEEN COS & POS = 2.63   **OVER ALL AVERAGE BETWEEN COS & PSOS = 2.6**

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DEPARTMENT OF BCA

BCA –THEORY

Sl. No	Semester	Course Code	Course Title		Course Outcomes(Cos)	Program Outcomes (POs)	Program Specific Outcomes (PSOs)
1	I	C1	Computer Fundamentals and Office Tools	CO1	Describe the usage of computers and why computers are essential components in business andsociety.	PO1, PO2, PO3, PO4, PO5, PO6, PO7.	PSO1, PSO2, PSO3.
				CO2	Identify categories of programs, system software and applications. Organize and work with files andfolders.	PO1, PO2, PO3, PO4, PO5, PO6, PO7.	PSO1, PSO2, PSO3.
				CO3	Compose, format and edit a word document and working withmacros	PO1, PO2, PO3, PO4, PO6, PO7.	PSO1, PSO2, PSO3.
				CO4	Create work sheets and using variousfunctions.	PO1, PO2, PO3, PO4, PO6, PO7.	PSO1, PSO2, PSO3.
				CO5	Make presentations and inserting multimedia inthem	PO1, PO2, PO3, PO4, PO6,PO7.	PSO1, PSO2, PSO3.
2		C2	Programming in C	CO1	Understand the basic terminology used in computerprogramming	PO1, PO2, PO3, PO4, PO6,PO7	PSO1, PSO2, PSO3
				CO2	Write, compile and debug programs in Clanguage.	PO1, PO2, PO3, PO4, PO6,PO7.	PSO1, PSO2, PSO3.
				CO3	Use different data types in a computerprogram	PO1, PO2, PO3, PO4, PO6,PO7.	PSO1, PSO2, PSO3.

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				CO4	Design programs involving decision structures, loops andfunctions	PO1, PO2, PO3, PO4, PO6,PO7.	PSO1, PSO2, PSO3.
				CO5	Understand the dynamics of memory by the use of pointers andStructures.	PO1, PO2, PO3, PO4, PO6,PO7.	PSO1, PSO2, PSO3.
				CO6	Apply different operations in Filehandling.	PO1, PO2, PO3, PO4, PO6,PO7	
3		C3	Numerical and Statistical Methods	CO1	Skill to choose and apply appropriate numerical methods to obtain appropriate solutions to difficult mathematicalproblems.	PO1, PO2, PO3, PO4, PO5, PO6, PO7.	PSO1, PSO2, PSO3.
				CO2	Ability to apply various statistical techniques such as Measures of Central Tendency and Dispersion	PO1, PO2, PO3, PO4, PO5, PO6, PO7.	PSO1, PSO2, PSO3.
				CO3	Skill to execute programs of various Numerical Methods and Statistical techniques for solving mathematicalproblems.	PO1, PO2, PO3, PO4, PO5, PO6, PO7.	PSO1, PSO2, PSO3.
4	II	C4	Data Structures	CO1	Identify data structures suitable to solveproblems	PO1, PO2, PO3, PO4, PO6, PO7.	PSO1, PSO2, PSO3..
				CO2	Developingalgorithms	PO1, PO2, PO3, PO4, PO5, PO6, PO7.	PSO1, PSO2, PSO3.
				CO3	Identifying the use of Time and SpaceComplexity.	PO1, PO2, PO3, PO4, PO6,PO7.	PSO1, PSO2, PSO3.
				CO4	Implementing different sorting & searching techniques.	PO1, PO2, PO3, PO4, PO6,PO7.	PSO1, PSO2, PSO3.
5		C5	Object Oriented Analysis and Design	CO1	Have Knowledge in evolution and foundations of OO Model and itselements	PO1, PO2, PO3, PO4, PO6,PO7.	PSO1, PSO2, PSO3.
				CO2	Identify relationship between classes andobjects	PO1, PO2, PO3,	PSO1, PSO2,

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							PO4, PO5, PO6, PO7.	PSO3.
				CO3	Know importance of classification and can identify classes andobjects		PO1, PO2, PO3, PO4, PO6,PO7.	PSO1, PSO2, PSO3.
				CO4	Have basic knowledge ofUML.		PO1, PO2, PO3, PO4, PO6,PO7.	PSO1, PSO2, PSO3
				CO5	Knowledge in syntax and semantics ofUML.		PO1, PO2, PO3, PO4, PO5, PO6, PO7.	PSO1, PSO2, PSO3, PSO4.
6		C6	Data Base Management System	CO1	Gain knowledge of Database, DBMS and SQL		PO1, PO2, PO3, PO4, PO6,PO7.	PSO1, PSO2, PSO3.
				CO2	Learn SQL as best analysis tool for extract data in different ways		PO1, PO2, PO3, PO4, PO5, PO6, PO7.	PSO1, PSO2, PSO3.
				CO3	Create a small database using SQL.		PO1, PO2, PO3, PO4, PO6,PO7.	PSO1, PSO2, PSO3.
				CO4	Able to construct SQL queries to Store, Retrieve data in database		PO1, PO2, PO3, PO4, PO6, PO7.	PSO1, PSO2, PSO3.
				CO5	Model database using ER Diagrams and design database schemas based on the model		PO1, PO2, PO3, PO4, PO5, PO6, PO7.	PSO1, PSO2, PSO3.
7	III	C7	Accounting and Financial Management	CO1	Company Setup &Configurations.		PO1, PO2, PO3, PO4, PO5, PO6, PO7.	PSO1, PSO2, PSO3.
				CO2	Recording FinancialTransactions		PO1, PO2, PO3, PO4, PO6,PO7.	PSO1, PSO2, PSO3.
				CO3	Financial Reports		PO1, PO2, PO3, PO4, PO6, PO7.	PSO1, PSO2, PSO3.
8		C8	Object Oriented	CO1	Understand the concept and underlying principles of Object-Oriented		PO1, PO2, PO3,	PSO1, PSO2,

			Programming through Java		Programming	PO4, PO5, PO6, PO7.	PSO3.
				CO2	Understand how object-oriented concepts are incorporated into the Java programming language	PO1, PO2, PO3, PO4, PO6,PO7.	PSO1, PSO2, PSO3.
				CO3	Develop problem-solving and programming skills using OOP concept	PO1, PO2, PO3, PO4, PO5, PO6, PO7.	PSO1, PSO2, PSO3.
				CO4	Understand the benefits of a well structured program	PO1, PO2, PO3, PO4, PO6,PO7.	PSO1, PSO2, PSO3.
				CO5	Develop the ability to solve real-world problems through software development in high-level programming language like Java	PO1, PO2, PO3, PO4, PO5, PO6, PO7.	PSO1, PSO2, PSO3.
				CO6	Develop efficient Java applets and applications using OOP concept	PO1, PO2, PO3, PO4, PO6,PO7.	PSO1, PSO2, PSO3.
9		C9	Operating Systems	CO1	Understand the main components and Structure of Operating System& theirfunctions	PO1, PO2, PO3, PO4,PO6,PO7.	PSO1, PSO2, PSO3.
				CO2	Analyze various ways of Process Management & CPU SchedulingAlgorithms	PO1, PO2, PO3, PO4, PO7.	PSO1, PSO2, PSO3.
				CO3	Evaluate various device and resources like Memory, Time and CPU Management techniques in distributedsystems.	PO1, PO2, PO3, PO4, PO7.	PSO1, PSO2, PSO3.
				CO4	Apply different methods for Preventing Deadlocks in a ComputerSystem.	PO1, PO2, PO3, PO7.	PSO1, PSO2, PSO3.
10	IV	C10	Cyber Laws	CO1	Critically evaluate ongoing developments in law relating to information technologies.	PO1, PO2, PO3, PO4, PO5, PO6, PO7.	PSO1, PSO2, PSO3.

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				CO2	Display an understanding of how these developments relate to oneanother.	PO1, PO2, PO3, PO4, PO5, PO6, PO7.	PSO1, PSO2, PSO3.
				CO3	Examine areas of doctrinal and political debate surrounding rules andtheories;	PO1, PO2, PO3, PO4, PO5, PO6, PO7.	PSO1, PSO2, PSO3.
				CO4	Evaluate those rules and theories in terms of internal coherence and practicaloutcomes	PO1, PO2, PO3, PO4, PO5, PO6, PO7.	PSO1, PSO2, PSO3.
				CO5	Draw on the analysis and evaluation contained in primary and secondarysources.	PO1, PO2, PO3, PO4, PO5, PO6, PO7.	PSO1, PSO2, PSO3.
11		C11	Data Mining and Data Ware Housing	CO1	Examine the types of the data to be mined and present a general classification of tasks and primitives to integrate a data miningsystem.	PO1, PO2, PO3, PO4, PO5, PO6, PO7.	PSO1, PSO2, PSO3.
				CO2	Apply preprocessing statistical methods for any given rawdata	PO1, PO2, PO3, PO4, PO6,PO7.	PSO1, PSO2, PSO3.
				CO3	Discover interesting patterns from large amounts of data to analyze and extract patterns to solve problems, make predictions ofoutcomes	PO1, PO2, PO3, PO4, PO6,PO7.	PSO1, PSO2, PSO3.
				CO4	Comprehend the roles that data mining plays in various fields and manipulate different data mining techniques	PO1, PO2, PO3, PO4, PO5, PO6, PO7.	PSO1, PSO2, PSO3.
				CO5	Select and apply proper data mining algorithms to build analyticalapplications	PO1, PO2, PO3, PO4, PO6,PO7.	PSO1, PSO2, PSO3.
12				CO6	Evaluate and implement a wide range of emerging and newly-adopted methodologies and technologies to facilitate the knowledgediscovery.	PO1, PO2, PO3, PO4, PO6,PO7.	PSO1, PSO2, PSO3.
		C12	Web Programming	CO1	To understand the web architecture and web services.	PO1, PO2, PO3, PO4, PO6,PO7.	PSO1, PSO2, PSO3.

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				CO2	To practice latest web technologies and tools by conducting experiments	PO1, PO2, PO3, PO4, PO6,PO7.	PSO1, PSO2, PSO3.
				CO3	To design interactive web pages using HTML and Style sheets.	PO1, PO2, PO3, PO4, PO5, PO6, PO7.	PSO1, PSO2, PSO3.
				CO4	To study the framework and building blocks of Integrated Development Environment	PO1, PO2, PO3, PO4, PO5, PO6, PO7.	PSO1, PSO2, PSO3.
				CO5	To provide solutions by identifying and formulating IT related problems.	PO1, PO2, PO3, PO4, PO6,PO7.	PSO1, PSO2, PSO3.
13		C13	Design of Object Oriented Applications	CO1	Have Knowledge in micro and macroprocess	PO1, PO2, PO3, PO4, PO6,PO7.	PSO1, PSO2, PSO3.
				CO2	Have Knowledge in management planning, quality assurance and metrics along with documentation of object orienteddevelopment	PO1, PO2, PO3, PO4, PO5, PO6, PO7.	PSO1, PSO2, PSO3.
				CO3	Have Knowledge in systemarchitecture.	PO1, PO2, PO3, PO4, PO5, PO6, PO7.	PSO1, PSO2, PSO3.
				CO4	Basic knowledge in AI and DataAcquisition	PO1, PO2, PO3, PO4, PO5, PO6, PO7.	PSO1, PSO2, PSO3.
				CO5	Knowledge in applications of Object OrientedDesign	PO1, PO2, PO3, PO4, PO5, PO6, PO7.	PSO1, PSO2, PSO3.
14		C14	Data Analytics Using R	CO1	Data-Visualization tools and techniques offer executives and other knowledge workers new approaches	PO1, PO2, PO3, PO4, PO6,PO7.	PSO1, PSO2, PSO3.
				CO2	Data visualization is a general term that describes any effort to help people understand the significance of data by placing it in a visual context.	PO1, PO2, PO3, PO4, PO5, PO6, PO7.	PSO1, PSO2, PSO3.

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				CO3	Patterns, trends and correlations that might go undetected in text-based data can be exposed and recognized easier with data visualizationsoftware	PO1, PO2, PO3, PO4, PO5, PO6, PO7.	PSO1, PSO2, PSO3.
				CO4	It isn't just the attraction of the huge range of statistical analyses afforded by R that attracts data people to R. The language has also developed a rich ecosystem of charts, plots and visualizations over theyears	PO1, PO2, PO3, PO4, PO6,PO7.	PSO1, PSO2, PSO3.
15		C15	Object Oriented Software Engineering	CO1	Explore the basic concepts of softwareengineering	PO1, PO2, PO3, PO4, PO6,PO7.	PSO1, PSO2, PSO3.
				CO2	Choose appropriate life cycle model for aproject	PO1, PO2, PO3, PO4, PO6,PO7.	PSO1, PSO2, PSO3.
				CO3	Implement the phases of the traditional software developmentprocess	PO1, PO2, PO3, PO4, PO5, PO6, PO7.	PSO1, PSO2, PSO3.
				CO4	Design various test cases for a softwareproduct	PO1, PO2, PO3, PO4, PO5, PO6, PO7.	PSO1, PSO2, PSO3.
				CO5	Analyze different architectural views	PO1, PO2, PO3, PO4, PO6,PO7.	PSO1, PSO2, PSO3.
16		SEC1	Machine Learning Using Python	CO1	Identify the characteristics of machine learning	PO1, PO2, PO3, PO4, PO6,PO7.	PSO1, PSO2, PSO3.
				CO2	Summarize the Model building and evaluation approaches	PO1, PO2, PO3, PO4, PO6,PO7.	PSO1, PSO2, PSO3.
				CO3	Apply Bayesian learning and regression algorithms for real-world Problems.	PO1, PO2, PO3, PO4, PO5, PO6, PO7.	PSO1, PSO2, PSO3.
				CO4	Apply supervised learning algorithms to solve the real-world Problems	PO1, PO2, PO3, PO4, PO5, PO6, PO7.	PSO1, PSO2, PSO3.

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				CO5	Apply unsupervised learning algorithms for the real world data	PO1, PO2, PO3, PO4, PO5, PO6, PO7.	PSO1, PSO2, PSO3.
17		SEC2	Digital Imaging	CO1	Gain knowledge about Types of Graphics, Types of Objects, Types of video editing tools	PO1, PO2, PO3, PO4, PO6, PO7.	PSO1, PSO2, PSO3.
				CO2	Show their skills in editing and altering photographs for through a basic understanding of the tool box.	PO1, PO2, PO3, PO4, PO5, PO6, PO7.	PSO1, PSO2, PSO3.
				CO3	. Gain knowledge in using the layers	PO1, PO2, PO3, PO4, PO6, PO7.	PSO1, PSO2, PSO3.
				CO4	Gain knowledge in using the selection tools, repair tools	PO1, PO2, PO3, PO4, PO6, PO7.	PSO1, PSO2, PSO3.
				CO5	Gain knowledge in using selection tools , applying filters and can show their skills	PO1, PO2, PO3, PO4, PO6, PO7.	PSO1, PSO2, PSO3.
18		SEC3	Cyber Security And Malware Analysis	CO1	Understand the computer networks, networking tools and cyber security	PO1, PO2, PO3, PO4, PO5, PO6, PO7.	PSO1, PSO2, PSO3.
				CO2	Learn about NIST Cyber Security Framework	PO1, PO2, PO3, PO4, PO5, PO6, PO7.	PSO1, PSO2, PSO3.
				CO3	Understand the OWASP Vulnerabilities	PO1, PO2, PO3, PO4, PO5, PO6, PO7.	PSO1, PSO2, PSO3.
				CO4	Implement various Malware analysis tools	PO1, PO2, PO3, PO4, PO5, PO6, PO7.	PSO1, PSO2, PSO3.
				CO5	Understand about Information Technology act 2000	PO1, PO2, PO3, PO4, PO5, PO6, PO7.	PSO1, PSO2, PSO3.

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19		SEC4	INTERNET OF THINGS	CO1	Able to understand various applications of IOT in real world and industry domain·	PO1, PO2, PO3, PO4, PO5, PO6, PO7.	PSO1, PSO2, PSO3.
				CO2	Able to realize the revolution of Internet in Mobile Devices, Cloud & Sensor Networks·	PO1, PO2, PO3, PO4, PO5, PO6, PO7.	PSO1, PSO2, PSO3.
				CO3	Able to understand building blocks of Internet of Things and characteristics.	PO1, PO2, PO3, PO4, PO5, PO6, PO7.	PSO1, PSO2, PSO3.
				CO4	Able to design and develop IOT devices	PO1, PO2, PO3, PO4, PO6,PO7.	PSO1, PSO2, PSO3.
20		SEC5	MOBILE APPLICATION DEVELOPMENT	CO1	Identify basic terms ,tools and software related to android systems	PO1, PO2, PO3, PO4, PO5, PO6, PO7.	PSO1, PSO2, PSO3.
				CO2	Describe components of IDE, understand features of android development tools	PO1, PO2, PO3, PO4, PO5, PO6,	PSO1, PSO2, PSO3.
				CO3	Describe the layouts and controls	PO1, PO2, PO3, PO4, PO5, PO6, PO7.	PSO1, PSO2, PSO3.
				CO4	Explain the significance of displays using the given view	PO1, PO2, PO3, PO4, PO5, PO6, PO7.	PSO1, PSO2, PSO3.
				CO5	Explain the features of services and able to publish android Application	PO1, PO2, PO3, PO4, PO5, PO6, PO7.	PSO1, PSO2, PSO3.
				CO6	Developing interesting Android applications using MIT App Inventor	PO1, PO2, PO3, PO4, PO5, PO6, PO7.	PSO1, PSO2, PSO3.
21		SEC6	PC HARDWARE AND	CO1	Identify the computer peripherals, software and hardware devices	PO1, PO2, PO3, PO4, PO6, PO7.	PSO1, PSO2, PSO3.

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22			NETWORKING	CO2	Describe the basics of networks and networking tools	PO1, PO2, PO3, PO4, PO6, PO7.	PSO1, PSO2, PSO3.
				CO3	Describe the Network Addressing and sub-netting	PO1, PO2, PO3, PO4, PO6, PO7.	PSO1, PSO2, PSO3.
				CO4	Explains the Networks protocols and management	PO1, PO2, PO3, PO4, PO6, PO7.	PSO1, PSO2, PSO3.
				CO5	Identifies Basic Network administrator roles	PO1, PO2, PO3, PO4, PO5, PO6	PSO1, PSO2, PSO3.
	VI		SEMESTER INTERNSHIP	CO1	Gain knowledge about Types of Graphics, Types of Objects, Types of video editing tools	PO1, PO2, PO3, PO4, PO6, PO7	PSO1, PSO2, PSO3.
				CO2	Gain knowledge in using selection tools , applying filters and can show their skills	PO1, PO2, PO3, PO4, PO6, PO7	PSO1, PSO2, PSO3.
				CO3	Show their skills in editing and altering photographs for through a basic understanding of the tool box.	PO1, PO2, PO3, PO4, PO6, PO7	PSO1, PSO2, PSO3.

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BCA - PRACTICALS

Sl. No	Semester	Course Code	Course Title		Course Outcomes(Cos)	Program Outcomes (POs)	Program Specific Outcomes (PSOs)
1		C1-P	Computer Fundamentals and Office Tools-LAB	CO1	Compose, format and edit a word document and working with macros		
				CO2	Compose, format and edit a word document and working with macros		
				CO3	Make presentations and inserting multimedia in them		
2	I	C2-P	Programming in C-LAB	CO1	Write, compile and debug programs in C language.	PO1, PO2, PO3, PO4, PO6,PO7.	PSO1, PSO2, PSO3.
				CO2	Use different data types in a computer program	PO1, PO2, PO3, PO4, PO6,PO7.	PSO1, PSO2, PSO3.
				CO3	Design programs involving decision structures, loops and functions	PO1, PO2, PO3, PO4, PO6,PO7.	PSO1, PSO2, PSO3.
				CO4	Understand the dynamics of memory by the use of pointers and Structures.	PO1, PO2, PO3, PO4, PO6,PO7.	PSO1, PSO2, PSO3.
				CO5	Apply different operations in File handling.	PO1, PO2, PO3, PO4, PO6,PO7	PSO1, PSO2, PSO3.
3		C3-P	Numerical and Statistical	CO1	Skill to choose and apply appropriate numerical methods to obtain appropriate solutions to difficult mathematical problems.	PO1, PO2, PO3, PO4, PO5, PO6, PO7.	PSO1, PSO2, PSO3.

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			Methods-LAB	CO2	Ability to apply various statistical techniques such as Measures of Central Tendency and Dispersion	PO1, PO2, PO3, PO4, PO5, PO6, PO7.	PSO1, PSO2, PSO3.
				CO3	Skill to execute programs of various Numerical Methods and Statistical techniques for solving mathematical problems.	PO1, PO2, PO3, PO4, PO5, PO6, PO7.	PSO1, PSO2, PSO3.
4		C4-P	Data Structures LAB	CO1	understand a systematic approach to organizing, writing and debugging C programs		PSO1, PSO2, PSO3..
				CO2	Ability to implement linear and non-linear data structure operations using C programs		PSO1, PSO2, PSO3.
				CO3	Ability to solve problems implementing appropriate data structure		PSO1, PSO2, PSO3.
				CO4	Ability to implement sorting and searching algorithms using relevant data structures		PSO1, PSO2, PSO3.
5	II	C5-P	Object Oriented Analysis and Design LAB	CO1	Model the Use case and Class diagrams for the given application.	PO1, PO2, PO3, PO4, PO6,PO7.	PSO1, PSO2, PSO3.
				CO2	Develop the sequence and collaboration diagrams for the given application.	PO1, PO2, PO3, PO4, PO5, PO6, PO7.	PSO1, PSO2, PSO3.
				CO3	Build Activity diagram and State Chart diagrams for the given application	PO1, PO2, PO3, PO4, PO6,PO7.	PSO1, PSO2, PSO3.
6		C6-P	Data Base Management System LAB	CO1	Create a small database using SQL.	PO1, PO2, PO3, PO4, PO6,PO7.	PSO1, PSO2, PSO3.
				CO2	Able to construct SQL queries to Store, Retrieve data in database	PO1, PO2, PO3, PO4, PO6, PO7.	PSO1, PSO2, PSO3.
				CO3	Model database using ER Diagrams and design database schemas based on the model	PO1, PO2, PO3, PO4, PO5, PO6, PO7.	PSO1, PSO2, PSO3.

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7		C7-P	Accounting and Financial Management-LAB	CO1	Company Setup &Configurations.	PO1, PO2, PO3, PO4, PO5, PO6, PO7.	PSO1, PSO2, PSO3.
				CO2	Recording Financial Transactions	PO1, PO2, PO3, PO4, PO6,PO7.	PSO1, PSO2, PSO3.
				CO3	Financial Reports	PO1, PO2, PO3, PO4, PO6, PO7.	PSO1, PSO2, PSO3.
8	III	C8-P	Object Oriented Programming through Java LAB	CO1	Develop problem-solving and programming skills using OOP concept	PO1, PO2, PO3, PO4, PO5, PO6, PO7.	PSO1, PSO2, PSO3.
				CO2	Understand the benefits of a well structured program	PO1, PO2, PO3, PO4, PO6,PO7.	PSO1, PSO2, PSO3.
				CO3	Develop the ability to solve real-world problems through software development in high-level programming language like Java	PO1, PO2, PO3, PO4, PO5, PO6, PO7.	PSO1, PSO2, PSO3.
				CO4	Develop efficient Java applets and applications using OOP concept	PO1, PO2, PO3, PO4, PO6,PO7.	PSO1, PSO2, PSO3.
9		C9-P	Operating Systems LAB	CO1	Experiment with Unix commands and shell programming		
				CO2	Build 'C' program for process and file system management using system calls		
				CO3	Choose the best CPU scheduling algorithm for a given problem instance		
				CO4	Develop algorithm for deadlock avoidance, detection and file allocation strategies		
10	IV	C10-P	Cyber Laws-LAB	CO1	Extensive knowledge regarding jurisdictional issues in IT Act		
				CO2	Various important national and international cyber laws.		
				CO3	Understands the scope of Cyber Law		

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				CO4	The students is able to understand the basic concept of International Technology		
11		C11-P	Data Mining and Data Ware Housing-LAB	CO1	How to select data and technique for the mining		
				CO2	How to use Algorithms for data mining		
				CO3	How to analyze data		
				CO4	How to compare techniques based on result		
		C12-P	Web Programming-LAB	CO1	To practice latest web technologies and tools by conducting experiments	PO1, PO2, PO3, PO4, PO6,PO7.	PSO1, PSO2, PSO3.
				CO2	To design interactive web pages using HTML and Style sheets.	PO1, PO2, PO3, PO4, PO5, PO6, PO7.	PSO1, PSO2, PSO3.
				CO3	To study the framework and building blocks of Integrated Development Environment	PO1, PO2, PO3, PO4, PO5, PO6, PO7.	PSO1, PSO2, PSO3.
				CO4	To provide solutions by identifying and formulating IT related problems.	PO1, PO2, PO3, PO4, PO6,PO7.	PSO1, PSO2, PSO3.
13		C13-P	Design of Object Oriented Applications-LAB	CO1	Construct various UML models (including use case diagrams, class diagrams, interaction diagrams, statechart diagrams, activity diagrams, and implementation diagrams) using the appropriate notation.		
				CO2	Recognize the difference between various object relationships: inheritance, association, whole-part, and dependency relationships.		
				CO3	Show the role and function of each UML model in developing object oriented software.		

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14		C14-P	Data Analytics Using R-LAB	CO1	Data-Visualization tools and techniques offer executives and other knowledge workers new approaches	PO1, PO2, PO3, PO4, PO6,PO7.	PSO1, PSO2, PSO3.
				CO2	Data visualization is a general term that describes any effort to help people understand the significance of data by placing it in a visual context.	PO1, PO2, PO3, PO4, PO5, PO6, PO7.	PSO1, PSO2, PSO3.
				CO3	Patterns, trends and correlations that might go undetected in text-based data can be exposed and recognized easier with data visualization software	PO1, PO2, PO3, PO4, PO5, PO6, PO7.	PSO1, PSO2, PSO3.
				CO4	It isn't just the attraction of the huge range of statistical analyses afforded by R that attracts data people to R. The language has also developed a rich ecosystem of charts, plots and visualizations over the years	PO1, PO2, PO3, PO4, PO6,PO7.	PSO1, PSO2, PSO3.
15		C15-P	Object Oriented Software Engineering-LAB	CO1	Explore the basic concepts of software engineering	PO1, PO2, PO3, PO4, PO6,PO7.	PSO1, PSO2, PSO3.
				CO2	Choose appropriate life cycle model for a project	PO1, PO2, PO3, PO4, PO6,PO7.	PSO1, PSO2, PSO3.
				CO3	Implement the phases of the traditional software development process	PO1, PO2, PO3, PO4, PO5, PO6, PO7.	PSO1, PSO2, PSO3.
				CO4	Design various test cases for a software product	PO1, PO2, PO3, PO4, PO5, PO6, PO7.	PSO1, PSO2, PSO3.
				CO5	Analyze different architectural views	PO1, PO2, PO3, PO4, PO6,PO7.	PSO1, PSO2, PSO3.
16		SEC-1P	Machine Learning Using Python-LAB	CO1	Identify the characteristics of machine learning	PO1, PO2, PO3, PO4, PO6,PO7.	PSO1, PSO2, PSO3.
				CO2	Summarize the Model building and evaluation approaches	PO1, PO2, PO3, PO4, PO6,PO7.	PSO1, PSO2, PSO3.

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				CO3	Apply Bayesian learning and regression algorithms for real-world Problems.	PO1, PO2, PO3, PO4, PO5, PO6, PO7.	PSO1, PSO2, PSO3.
				CO4	Apply supervised learning algorithms to solve the real-world Problems	PO1, PO2, PO3, PO4, PO5, PO6, PO7.	PSO1, PSO2, PSO3.
				CO5	Apply unsupervised learning algorithms for the real world data	PO1, PO2, PO3, PO4, PO5, PO6, PO7.	PSO1, PSO2, PSO3.
17		SEC-2P	Digital Imaging-LAB	CO1	Gain knowledge about Types of Graphics, Types of Objects, Types of video editing tools	PO1, PO2, PO3, PO4, PO6, PO7.	PSO1, PSO2, PSO3.
				CO2	Show their skills in editing and altering photographs for through a basic understanding of the tool box.	PO1, PO2, PO3, PO4, PO5, PO6, PO7.	PSO1, PSO2, PSO3.
				CO3	. Gain knowledge in using the layers	PO1, PO2, PO3, PO4, PO6, PO7.	PSO1, PSO2, PSO3.
				CO4	Gain knowledge in using the selection tools, repair tools	PO1, PO2, PO3, PO4, PO6, PO7.	PSO1, PSO2, PSO3.
				CO5	Gain knowledge in using selection tools , applying filters and can show their skills	PO1, PO2, PO3, PO4, PO6, PO7.	PSO1, PSO2, PSO3.
18		SEC-3P	Cyber Security And Malware Analysis-LAB	CO1	Understand the computer networks, networking tools and cyber security	PO1, PO2, PO3, PO4, PO5, PO6, PO7.	PSO1, PSO2, PSO3.
				CO2	Learn about NIST Cyber Security Framework	PO1, PO2, PO3, PO4, PO5, PO6, PO7.	PSO1, PSO2, PSO3.
				CO3	Understand the OWASP Vulnerabilities	PO1, PO2, PO3, PO4, PO5, PO6, PO7.	PSO1, PSO2, PSO3.

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				CO4	Implement various Malware analysis tools	PO1, PO2, PO3, PO4, PO5, PO6, PO7.	PSO1, PSO2, PSO3.
				CO5	Understand about Information Technology act 2000	PO1, PO2, PO3, PO4, PO5, PO6, PO7.	PSO1, PSO2, PSO3.
19		SEC-4P	INTERNET OF THINGS-LAB	CO1	Able to understand various applications of IOT in real world and industry domain·	PO1, PO2, PO3, PO4, PO5, PO6, PO7.	PSO1, PSO2, PSO3.
				CO2	Able to realize the revolution of Internet in Mobile Devices, Cloud & Sensor Networks·	PO1, PO2, PO3, PO4, PO5, PO6, PO7.	PSO1, PSO2, PSO3.
				CO3	Able to understand building blocks of Internet of Things and characteristics.	PO1, PO2, PO3, PO4, PO5, PO6, PO7.	PSO1, PSO2, PSO3.
				CO4	Able to design and develop IOT devices	PO1, PO2, PO3, PO4, PO6,PO7.	PSO1, PSO2, PSO3.
20		SEC-5P	MOBILE APPLICATION DEVELOPMENT-LAB	CO1	Identify basic terms ,tools and software related to android systems	PO1, PO2, PO3, PO4, PO5, PO6, PO7.	PSO1, PSO2, PSO3.
				CO2	Describe components of IDE, understand features of android development tools	PO1, PO2, PO3, PO4, PO5, PO6,	PSO1, PSO2, PSO3.
				CO3	Describe the layouts and controls	PO1, PO2, PO3, PO4, PO5, PO6, PO7.	PSO1, PSO2, PSO3.
				CO4	Explain the significance of displays using the given view	PO1, PO2, PO3, PO4, PO5, PO6, PO7.	PSO1, PSO2, PSO3.
				CO5	Explain the features of services and able to publish android Application	PO1, PO2, PO3, PO4, PO5, PO6, PO7.	PSO1, PSO2, PSO3.

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				CO6	Developing interesting Android applications using MIT App Inventor	PO1, PO2, PO3, PO4, PO5, PO6, PO7.	PSO1, PSO2, PSO3.
21		SEC-6P	PC HARDWARE AND NETWORKING-LAB	CO1	Identify the computer peripherals, software and hardware devices	PO1, PO2, PO3, PO4, PO6, PO7.	PSO1, PSO2, PSO3.
				CO2	Describe the basics of networks and networking tools	PO1, PO2, PO3, PO4, PO6, PO7.	PSO1, PSO2, PSO3.
				CO3	Describe the Network Addressing and sub-netting	PO1, PO2, PO3, PO4, PO6, PO7.	PSO1, PSO2, PSO3.
				CO4	Explains the Networks protocols and management	PO1, PO2, PO3, PO4, PO6, PO7.	PSO1, PSO2, PSO3.
				CO5	Identifies Basic Network administrator roles	PO1, PO2, PO3, PO4, PO5, PO6	PSO1, PSO2, PSO3.

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I YEAR – BCA – I SEMESTER – COURCE– C1 - THEORY

	MAPPING(COs & POs)							MAPPING(COs & PSOs)		
	PO1 Essential Domain Knowledge	PO2 Creative and critical thinking and problem solving abilities	PO3 Communication Skills and Team Work	PO4 Digital Capabilities	PO5 Social Responsibilities, Ethical and Environmental Competency	PO6 Employability and Research related Skills	PO7 Life-Long Learning	PSO1	PSO2	PSO3
CO1	3	3	3	3	2	3	3	3	2	3
CO2	3	3	2	3	1	2	3	2	3	3
CO3	3	3	2	3	--	2	3	3	2	3
CO4	3	3	2	3	--	2	3	3	2	3

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CO5	3	3	3	3	--	2	3	3	2	2
Average	3	3	2.4	3	1.5	2.2	3	2.8	2	2.8

OVER ALL AVERAGE BETWEEN COS & POS = 2.58   OVER ALL AVERAGE BETWEEN COS & PSOS = 2.53

I YEAR – BCA – I SEMESTER – COURCE– C2 – THEORY

	MAPPING(COs & POs)							MAPPING(COs & PSOs)		
	PO1 Essential Domain Knowledge	PO2 Creative and critical thinking and problem solving abilities	PO3 Communication Skills and Team Work	PO4 Digital Capabilities	PO5 Social Responsibilities, Ethical and Environmental Competency	PO6 Employability and Research related Skills	PO7 Life-Long Learning	PSO1	PSO2	PSO3
CO1	3	3	3	3	--	2	3	3	3	3
CO2	3	3	3	3	--	2	3	3	3	3
CO3	3	3	3	3	--	2	3	3	3	3
CO4	3	3	3	3	--	2	3	3	3	3
CO5	3	3	3	3	--	2	3	3	3	3

CO6	3	3	3	3	--	2	3	3	3	3
Average	3	3	3	3	--	2	3	3	3	3

OVER ALL AVERAGE BETWEEN COS & POS =2.83   **OVER ALL AVERAGE BETWEEN COS & PSOS = 3**

I YEAR – BCA – I SEMESTER – COURCE– C3 - THEORY

	MAPPING(COs & POs)							MAPPING(COs & PSOs)		
	PO1 Essential Domain Knowledge	PO2 Creative and critical thinking and problem solving abilities	PO3 Communication Skills and Team Work	PO4 Digital Capabilities	PO5 Social Responsibilities, Ethical and Environmental Competency	PO6 Employability and Research related Skills	PO7 Life-Long Learning	PSO1	PSO2	PSO3
CO1	3	3	2	2	2	3	3	3	2	3
CO2	3	3	2	2	2	3	3	3	2	3
CO3	3	3	2	2	2	3	3	3	2	3
Average	3	3	2	2	2	3	3	3	2	3

OVER ALL AVERAGE BETWEEN COS & POS = 2.57   **OVER ALL AVERAGE BETWEEN COS & PSOS = 2.66**

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I YEAR – BCA – II SEMESTER – COURCE– C4 - THEORY

| | MAPPING(COs & POs) | | | | | | | MAPPING(COs & PSOs) | | |
	PO1 Essential Domain Knowledge	PO2 Creative and critical thinking and problem solving abilities	PO3 Communication Skills and Team Work	PO4 Digital Capabilities	PO5 Social Responsibilities, Ethical and Environmental Competency	PO6 Employability and Research related Skills	PO7 Life-Long Learning	PSO1	PSO2	PSO3
CO1	3	3	3	3	---	3	3	3	3	3
CO2	3	3	3	3	1	3	3	3	3	3
CO3	3	3	3	3	--	3	3	3	3	3
CO4	3	3	3	3	--	3	3	3	3	3

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Average	3	3	3	3	1	3	3	3	3	3

OVER ALL AVERAGE BETWEEN COS & POS = 2.71   **OVER ALL AVERAGE BETWEEN COS & PSOS = 3**

I YEAR – BCA – II SEMESTER – COURCE– C5 - THEORY

	MAPPING(COs & POs)							MAPPING(COs & PSOs)		
	PO1 Essential Domain Knowledge	PO2 Creative and critical thinking and problem solving abilities	PO3 Communication Skills and Team Work	PO4 Digital Capabilities	PO5 Social Responsibilities, Ethical and Environmental Competency	PO6 Employability and Research related Skills	PO7 Life-Long Learning	PSO1	PSO2	PSO3
CO1	3	3	3	3	--	3	3	3	3	3
CO2	3	3	3	3	--	3	3	2	2	3
CO3	3	3	2	3	--	2	3	2	3	3
CO4	3	3	3	3	--	3	3	2	2	3

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CO5	3	3	3	3	1	3	3	3	3	3
Average	3	3	2.8	3	1	2.8	3	2.4	2.6	3

OVER ALL AVERAGE BETWEEN COS & POS =2.65   OVER ALL AVERAGE BETWEEN COS & PSOS = 2.66

I YEAR – BCA – II SEMESTER – COURCE– C6 - THEORY

	MAPPING(COs & POs)							MAPPING(COs & PSOs)		
	PO1 **Essential Domain Knowledge**	PO2 **Creative and critical thinking and problem solving abilities**	PO3 **Communication Skills and Team Work**	PO4 **Digital Capabilities**	PO5 **Social Responsibilities, Ethical and Environmental Competency**	PO6 **Employability and Research related Skills**	PO7 **Life-Long Learning**	PSO1	PSO2	PSO3
CO1	3	2	3	3	--	3	3	3	3	3
CO2	3	2	3	3	1	3	3	3	3	3
CO3	3	3	3	3	--	3	3	3	3	3
CO4	3	3	3	3	--	3	3	3	3	3

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CO5	3	3	3	3	1	2	3	3	3	3
Average	3	2.6	3	3	1	2.8	3	3	3	3

OVER ALL AVERAGE BETWEEN COS & POS = 2.62   **OVER ALL AVERAGE BETWEEN COS & PSOS = 3**

II YEAR – BCA – III SEMESTER – COURCE– C7 - THEORY

	MAPPING(COs & POs)							MAPPING(COs & PSOs)		
	PO1 Essential Domain Knowledge	PO2 Creative and critical thinking and problem solving abilities	PO3 Communication Skills and Team Work	PO4 Digital Capabilities	PO5 Social Responsibilities, Ethical and Environmental Competency	PO6 Employability and Research related Skills	PO7 Life-Long Learning	PSO1	PSO2	PSO3
CO1	3	3	3	3	2	3	3	3	3	3
CO2	3	3	3	3	--	3	3	3	2	3
CO3	3	3	3	3	--	3	3	3	1	3

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Average	3	3	3	3	2	3	3	3	2	3

OVER ALL AVERAGE BETWEEN COS & POS = 2.85 OVER ALL AVERAGE BETWEEN COS & PSOS = 2.6

II YEAR – BCA – III SEMESTER – COURCE– C8 - THEORY

	MAPPING(COs & POs)							MAPPING(COs & PSOs)		
	PO1 **Essential Domain Knowledge**	PO2 **Creative and critical thinking and problem solving abilities**	PO3 **Communication Skills and Team Work**	PO4 **Digital Capabilities**	PO5 **Social Responsibilities, Ethical and Environmental Competency**	PO6 **Employability and Research related Skills**	PO7 **Life-Long Learning**	PSO1	PSO2	PSO3
CO1	3	3	3	3	1	2	3	3	3	3
CO2	3	3	2	3	--	3	3	3	3	3
CO3	3	3	3	3	2	3	3	3	3	3
CO4	3	3	3	3	--	3	3	3	3	3

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CO5	3	3	3	3	3	3	3	3	3	3
CO6	3	3	3	3	--	3	3	3	3	3
Average	3	3	2.8	3	2	2.8	3	3	3	3

OVER ALL AVERAGE BETWEEN COS & POS =2.8OVER ALL AVERAGE BETWEEN COS & PSOS = 3

II YEAR – BCA – III SEMESTER – COURCE– C9 - THEORY

	MAPPING(COs & POs)							MAPPING(COs & PSOs)		
	PO1 Essential Domain Knowledge	PO2 Creative and critical thinking and problem solving abilities	PO3 Communication Skills and Team Work	PO4 Digital Capabilities	PO5 Social Responsibilities, Ethical and Environmental Competency	PO6 Employability and Research related Skills	PO7 Life-Long Learning	PSO1	PSO2	PSO3
CO1	3	3	2	3	--	2	3	3	3	1
CO2	3	3	3	2	--	--	3	3	3	2
CO3	3	3	3	2	--	--	3	3	3	2

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CO4	3	3	3	--	--	--	3	3	3	1
Average	3	3	2.75	2.3	--	2	3	3	3	1.5

OVER ALL AVERAGE BETWEEN COS & POS =2.67OVER ALL AVERAGE BETWEEN COS & PSOS = 2.5

II YEAR – BCA – IV SEMESTER – COURCE– C10 - THEORY

	MAPPING(COs & POs)							MAPPING(COs & PSOs)		
	PO1 Essential Domain Knowledge	PO2 Creative and critical thinking and problem solving abilities	PO3 Communication Skills and Team Work	PO4 Digital Capabilities	PO5 Social Responsibilities, Ethical and Environmental Competency	PO6 Employability and Research related Skills	PO7 Life-Long Learning	PSO1	PSO2	PSO3
CO1	3	3	3	3	3	2	3	2	2	2
CO2	3	3	3	3	3	2	3	2	2	2
CO3	3	3	3	3	3	2	3	2	2	2

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CO4	3	3	2	3	3	2	3	2	2	2
CO5	3	3	2	3	3	2	3	2	2	2
Average	3	3	2.6	3	3	2	3	2	2	2

OVER ALL AVERAGE BETWEEN COS & POS = 2.8 OVER ALL AVERAGE BETWEEN COS & PSOS = 2

II YEAR – BCA – IV SEMESTER – COURCE– C11 - THEORY

	MAPPING(COs & POs)							MAPPING(COs & PSOs)		
	PO1 **Essential Domain Knowledge**	PO2 **Creative and critical thinking and problem solving abilities**	PO3 **Communication Skills and Team Work**	PO4 **Digital Capabilities**	PO5 **Social Responsibilities, Ethical and Environmental Competency**	PO6 **Employability and Research related Skills**	PO7 **Life-Long Learning**	PSO1	PSO2	PSO3
CO1	3	3	3	3	1	2	3	3	2	3
CO2	3	3	3	3	--	2	3	3	3	3
CO3	3	3	3	3	--	3	3	3	3	3

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CO4	3	3	3	3	1	2	3	3	3	3
CO5	3	3	3	3	--	3	3	3	3	3
CO6	3	3	3	3	--	3	3	3	3	3
Average	3	3	3	3	1	2.5	3	3	2.8	3

OVER ALL AVERAGE BETWEEN COS & POS = 2.64   **OVER ALL AVERAGE BETWEEN COS & PSOS =2.93**

II YEAR – BCA – IV SEMESTER – COURCE– C12 - THEORY

	MAPPING(COs & POs)							MAPPING(COs & PSOs)		
	PO1 Essential Domain Knowledge	PO2 Creative and critical thinking and problem solving abilities	PO3 Communication Skills and Team Work	PO4 Digital Capabilities	PO5 Social Responsibilities, Ethical and Environmental Competency	PO6 Employability and Research related Skills	PO7 Life-Long Learning	PSO1	PSO2	PSO3
CO1	3	3	3	3	--	1	2	3	2	3
CO2	3	3	3	3	---	3	3	3	3	3

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CO3	3	3	3	3	1	2	3	3	3	3
CO4	3	3	3	3	1	2	3	3	3	3
CO5	3	3	3	3	--	3	3	3	3	3
Average	3	3	3	3	1	2.2	2.8	3	2.8	3

OVER ALL AVERAGE BETWEEN COS & POS =2.57 OVER ALL AVERAGE BETWEEN COS & PSOS = 2.93

II YEAR – BCA – IV SEMESTER – COURCE– C13 - THEORY

	MAPPING(COs & POs)							MAPPING(COs & PSOs)		
	PO1 Essential Domain Knowledge	PO2 Creative and critical thinking and problem solving abilities	PO3 Communication Skills and Team Work	PO4 Digital Capabilities	PO5 Social Responsibilities, Ethical and Environmental Competency	PO6 Employability and Research related Skills	PO7 Life-Long Learning	PSO1	PSO2	PSO3
CO1	3	3	3	3	--	2	3	3	3	3
CO2	3	3	3	3	2	2	3	3	3	3

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CO3	3	3	3	3	3	2	3	3	3	3
CO4	3	3	3	3	3	2	3	3	3	3
CO5	3	3	3	3	2	2	3	3	3	3
Average	3	3	3	3	2.5	2	3	3	3	3

OVER ALL AVERAGE BETWEEN COS & POS = 2.78 OVER ALL AVERAGE BETWEEN COS & PSOS = 3

II YEAR – BCA – IV SEMESTER – COURCE– C14 - THEORY

	MAPPING(COs & POs)							MAPPING(COs & PSOs)		
	PO1 Essential Domain Knowledge	PO2 Creative and critical thinking and problem solving abilities	PO3 Communication Skills and Team Work	PO4 Digital Capabilities	PO5 Social Responsibilities, Ethical and Environmental Competency	PO6 Employability and Research related Skills	PO7 Life-Long Learning	PSO1	PSO2	PSO3
CO1	3	3	3	3	--	2	3	3	3	3

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CO2	3	3	3	3	1	2	3	3	3	3
CO3	3	3	3	3	1	2	3	3	3	3
CO4	3	3	3	3	--	2	3	3	3	3
Average	3	3	3	3	1	2	3	3	3	3

OVER ALL AVERAGE BETWEEN COS & POS = 2.57 OVER ALL AVERAGE BETWEEN COS & PSOS = 3

II YEAR – BCA – IV SEMESTER – COURCE– C15 - THEORY

	MAPPING(COs & POs)							MAPPING(COs & PSOs)		
	PO1 Essential Domain Knowledge	PO2 Creative and critical thinking and problem solving abilities	PO3 Communication Skills and Team Work	PO4 Digital Capabilities	PO5 Social Responsibilities, Ethical and Environmental Competency	PO6 Employability and Research related Skills	PO7 Life-Long Learning	PSO1	PSO2	PSO3
CO1	3	3	3	3	--	3	3	3	3	3

CO2	3	3	3	3	--	2	3	3	3	3
CO3	3	3	2	3	1	2	3	3	3	3
CO4	3	3	2	3	1	2	3	3	3	3
CO5	3	3	3	3	--	2	3	3	3	3
Average	3	3	2.6	3	1	2.2	3	3	3	3

OVER ALL AVERAGE BETWEEN COS & POS = 2.54 OVER ALL AVERAGE BETWEEN COS & PSOS = 3

III YEAR – BCA – V SEMESTER – COURCE– SEC1 - THEORY

	MAPPING(COs & POs)							MAPPING(COs & PSOs)		
	PO1 **Essential Domain Knowledge**	PO2 **Creative and critical thinking and problem solving abilities**	PO3 **Communication Skills and Team Work**	PO4 **Digital Capabilities**	PO5 **Social Responsibilities, Ethical and Environmental Competency**	PO6 **Employability and Research related Skills**	PO7 **Life-Long Learning**	PSO1	PSO2	PSO3
CO1	3	3	2	3	--	2	3	3	3	3

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CO2	3	3	3	3	--	2	3	3	3	3
CO3	3	3	3	3	2	2	3	3	3	3
CO4	3	3	3	3	2	2	3	3	3	3
CO5	3	3	3	3	2	2	3	3	3	3
Average	3	3	3	3	2	2	3	3	3	3

OVER ALL AVERAGE BETWEEN COS & POS =2.71   **OVER ALL AVERAGE BETWEEN COS & PSOS = 3**

III YEAR – BCA – V SEMESTER – COURCE– SEC2 - THEORY

	MAPPING(COs & POs)							MAPPING(COs & PSOs)		
	PO1 Essential Domain Knowledge	PO2 Creative and critical thinking and problem solving abilities	PO3 Communication Skills and Team Work	PO4 Digital Capabilities	PO5 Social Responsibilities, Ethical and Environmental Competency	PO6 Employability and Research related Skills	PO7 Life-Long Learning	PSO1	PSO2	PSO3
CO1	3	3	2	3	--	2	3	3	3	3

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CO2	3	3	3	3	2	2	3	3	3	3
CO3	3	3	2	3	--	2	3	3	3	3
CO4	3	3	2	3	--	2	3	3	3	3
CO5	3	3	2	3	--	2	3	3	3	3
Average	3	3	2.2	3	2	2	3	3	3	3

OVER ALL AVERAGE BETWEEN COS & POS =2.6   **OVER ALL AVERAGE BETWEEN COS & PSOS = 3**

III YEAR – BCA – V SEMESTER – COURCE– SEC3 – THEORY

	MAPPING(COs & POs)							MAPPING(COs & PSOs)		
	PO1 Essential Domain Knowledge	PO2 Creative and critical thinking and problem solving abilities	PO3 Communication Skills and Team Work	PO4 Digital Capabilities	PO5 Social Responsibilities, Ethical and Environmental Competency	PO6 Employability and Research related Skills	PO7 Life-Long Learning	PSO1	PSO2	PSO3

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CO1	3	3	3	3	2	3	3	3	3	3
CO2	3	3	3	3	3	3	3	2	3	3
CO3	3	3	3	3	2	3	3	2	3	3
CO4	3	3	3	3	2	3	3	3	3	3
CO5	3	3	3	3	3	3	3	2	3	3
Average	3	3	3	3	2.4	3	3	2.4	3	3

OVER ALL AVERAGE BETWEEN COS & POS =2.9 OVER ALL AVERAGE BETWEEN COS & PSOS = 2.8

III YEAR – BCA – V SEMESTER – COURCE– SEC4 - THEORY

	MAPPING(COs & POs)							MAPPING(COs & PSOs)		
	PO1 Essential Domain Knowledge	PO2 Creative and critical thinking and problem solving abilities	PO3 Communication Skills and Team Work	PO4 Digital Capabilities	PO5 Social Responsibilities, Ethical and Environmental Competency	PO6 Employability and Research related Skills	PO7 Life-Long Learning	PSO1	PSO2	PSO3

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CO1	3	3	3	3	1	1	3	3	3	3
CO2	3	3	3	3	2	1	3	3	3	3
CO3	3	3	3	3	1	2	3	3	3	3
CO4	3	3	3	3	--	1	3	3	3	3
Average	3	3	3	3	1	1.25	3	3	3	3

OVER ALL AVERAGE BETWEEN COS & POS = 2.46 OVER ALL AVERAGE BETWEEN COS & PSOS = 3

III YEAR – BCA – V SEMESTER – COURCE– SEC5 - THEORY

	MAPPING(COs & POs)							MAPPING(COs & PSOs)		
	PO1 Essential Domain Knowledge	PO2 Creative and critical thinking and problem solving abilities	PO3 Communication Skills and Team Work	PO4 Digital Capabilities	PO5 Social Responsibilities, Ethical and Environmental Competency	PO6 Employability and Research related Skills	PO7 Life-Long Learning	PSO1	PSO2	PSO3
CO1	3	3	3	3	2	2	3	3	3	3

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CO2	3	3	3	3	3	2	3	3	3	3
CO3	3	3	3	3	2	2	3	3	3	3
CO4	3	3	3	3	2	2	3	3	3	3
CO5	3	3	3	3	3	2	3	3	3	3
CO6	3	3	3	3	2	2	3	3	3	3
Average	3	3	3	3	2.3	2	3	3	3	3

OVER ALL AVERAGE BETWEEN COS & POS =2.75 OVER ALL AVERAGE BETWEEN COS & PSOS = 3

III YEAR – BCA – V SEMESTER – COURCE– SEC6 - THEORY

	MAPPING(COs & POs)							MAPPING(COs & PSOs)		
	PO1 Essential Domain Knowledge	PO2 Creative and critical thinking and problem solving abilities	PO3 Communication Skills and Team Work	PO4 Digital Capabilities	PO5 Social Responsibilities, Ethical and Environmental Competency	PO6 Employability and Research related Skills	PO7 Life-Long Learning	PSO1	PSO2	PSO3

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CO1	3	3	3	3	--	2	3	3	2	3
CO2	3	3	3	3	--	2	3	3	2	3
CO3	3	3	3	3	--	2	3	3	2	3
CO4	3	3	3	3	--	3	3	3	2	3
CO5	3	3	3	3	2	3	3	3	2	3
Average	3	3	3	3	2	2.4	3	3	2	3

OVER ALL AVERAGE BETWEEN COS & POS =2.77 OVER ALL AVERAGE BETWEEN COS & PSOS = 2.6

III YEAR – BCA – V SEMESTER – COURSE– SEMESTER INTERNSHIP

	MAPPING(COs & POs)							MAPPING(COs & PSOs)		
	PO1 Essential Domain Knowledge	PO2 Creative and critical thinking and problem	PO3 Communication Skills and	PO4 Digital Capabilities	PO5 Social Responsibilities, Ethical and	PO6 Employability and Research related Skills	PO7 Life-Long Learning	PSO1	PSO2	PSO3

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		solving abilities	Team Work		Environmental Competency					
CO1	3	3	3	3	--	2	3	3	2	3
CO2	3	3	3	3	--	2	3	3	2	3
CO3	3	3	3	3	--	2	3	3	2	3
Average	3	3	3	3	2	2.4	3	3	2	3

OVER ALL AVERAGE BETWEEN COS & POS =2.77 OVER ALL AVERAGE BETWEEN COS & PSOS = 2.6

III YEAR – BCA– THEORY

Cource Code	MAPPING (COs & POs)							MAPPING (COs & PSOs)		
	PO1 Essential Domain Knowledge	PO2 Creative and critical thinking and problem solving abilities	PO3 Communication Skills and Team Work	PO4 Digital Capabilities	PO5 Social Responsibilities, Ethical and Environmental Competency	PO6 Employability and Research related Skills	PO7 Life-Long Learning	PSO1	PSO2	PSO3

C1	**3**	**3**	**2.4**	**3**	**1.5**	**2.5**	**3**	**2.8**	**2**	**2.8**
C2	**3**	**3**	**3**	**3**	**--**	**2**	**3**	**3**	**3**	**3**
C3	**3**	**3**	**2**	**2**	**2**	**3**	**3**	**3**	**2**	**3**
C4	**3**	**3**	**3**	**1**	**3**	**3**	**3**	**3**	**3**	**3**
C5	**3**	**3**	**2.8**	**3**	**1**	**2.8**	**3**	**2.4**	**2.6**	**3**
C6	**3**	**2.6**	**3**	**3**	**1**	**2.8**	**3**	**3**	**3**	**3**
C7	**3**	**3**	**3**	**3**	**2**	**3**	**3**	**3**	**2**	**3**
C8	**2**	**3**	**2.8**	**3**	**2**	**2.8**	**3**	**3**	**3**	**3**
C9	**3**	**3**	**2.75**	**2.3**	**--**	**2**	**3**	**3**	**3**	**1.5**
C10	**3**	**3**	**2.6**	**3**	**3**	**2**	**3**	**2**	**2**	**2**
C11	**3**	**3**	**3**	**3**	**1**	**2.5**	**3**	**3**	**2.8**	**3**
C12	**3**	**3**	**3**	**3**	**1**	**2.2**	**2.8**	**3**	**2.8**	**3**
C13	**3**	**3**	**3**	**3**	**2.5**	**2**	**3**	**3**	**3**	**3**

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C14	3	3	3	3	1	2	3	3	3	3
C15	3	3	2.6	3	1	2.2	3	3	3	3
SEC1	3	3	3	3	2	2	3	3	3	3
SEC2	3	3	2.2	3	2	2	3	3	3	3
SEC3	3	3	3	3	2.4	3	3	2.4	3	3
SEC4	3	3	3	3	1	1.25	3	3	3	3
SEC5	3	3	3	3	2.3	2	3	3	3	3
SEC6	3	3	3	3	2	2.4	3	3	2	3
Internship	3	3	3	3	2	2.4	3	3	2	3
Average	**2.9**	**2.98**	**2.82**	**2.83**	**1.6**	**2.35**	**2.99**	**2.89**	**2.69**	**2.87**

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DEPARTMENT OF MCA

Sl. No	Semester	Course Code	Course Title		CourseOutcomes(Cos)	Program Outcomes (POs)	Program Specific Outcomes (PSOs)
1	I	MCA	**MCA-101** DataStructure swithC++	CO1	Illustrate the implementation of linked lists and Recursion	PO1,PO2,PO3,PO4,PO5,PO7,PO9,PO10,PO11,PO12	PSO1,PSO2,PSO3
				CO2	Analyse search algorithms and hashing technique	PO1,PO2,PO3,PO4,PO5,PO6,PO7,PO9,PO10,PO11,PO12	PSO1,PSO2,PSO3
				CO3	Apply Stacks and Queues for real world tasks	PO1,PO2,PO3,PO4,PO5,PO7,PO8,PO10,PO11,PO12	PSO1,PSO2,PSO3
				CO4	Make use of trees and Graphs in solving Complex problems	PO1,PO2,PO3,PO4,PO5,PO7,PO10,PO11,PO12	PSO1,PSO2,PSO3
2	I	MCA	**MCA - 102**Database Management	CO1	Explain about database, different operations, queries performed for management system problems	PO1,PO2,PO3,PO8,PO10,PO12	PSO1,PSO3
				CO2	Demonstrate the significance of ER-diagram in DBMS	PO1,PO3,PO6,P	PSO2,PSO3

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			Systems			O8,PO9,PO10,PO11,PO12	
				CO3	Make use of different normalizations for database size reduction and removal of redundancy	PO1,PO3,PO5,PO9,PO10,PO11	PSO1,PSO2,PSO3
				CO4	Apply PL/SQL, SQL injection, procedures etc	PO1,PO2,PO3,PO6,PO10	PSO1,PSO3
3	I	MCA	**MCA-103**Probabilit yandStatistics	CO1	Show confidence in manipulating and drawing conclusions from data and provide them with a critical frame work for evaluating study designs and results	PO1,PO2,PO3	_
				CO2	Explain the basic notions of probability laws and develop them to the stage where one can begin to use	PO1,PO2,PO3	_
				CO3	Explain the basic notions of probability laws and develop them to the stage where one can begin to use	PO1,PO2,PO3	_
				CO4	Summarize the study of stochastic processes	PO1,PO2,PO3	_
4	I	MCA	**MCA-104** OperatingSys tems	CO1	Explain what is an operating system and the role it plays	PO1,PO2,PO3,PO4,PO10	PSO1,PSO3
				CO2	Infer high level understanding of the structure of operating systems, applications, and the relationship between t hem	PO1,PO2,PO3,PO4,PO7,PO10,PO12	PSO1,PSO3
				CO3	How to gather knowledge of the services provided by operating systems	PO1,PO4,PO10,PO12	PSO1,PSO3
				CO4	Compare the exposure to some details majors concepts.	PO1,PO2,PO3,PO4,PO8,PO10,PO12	PSO1,PSO3
5	I	MCA	**MCA-105** ComputerOrg anization	CO1	Explain the key concepts that are likely to be included in the design of any modern computer system	PO1,PO2,PO3,PO4,PO5,PO7,PO8,PO10,PO11,PO12	PSO1,PSO2,PSO3
				CO2	Make use of the basic metrics by which new and existing computer systems may be evaluated	PO1,PO2,PO3,PO4,PO5,PO6,P	PSO1,PSO2,PSO3

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							O8,PO9,PO11,PO12	
				CO3	Outline the impact that languages, their compilers and underlying operating systems have on the design of computer systems	PO1,PO2,PO3,PO4,PO6,PO9,PO10	PSO1,PSO2,PSO3
				CO4	How to evaluate the impact that peripherals, their inter connection and underlying data operations have on the design of computer systems	PO1,PO2,PO3,PO4,PO7	PSO1,PSO2
6	I	MCA	**MCA-106** Data Structures Lab	CO1	Understand the concept of array storage and examine the concept of row-major and column-major order.	PO1,PO3,PO4,PO12	PSO1,PSO3
				CO2	List and illustrate the implementation of basic data structure using an array.	PO1,PO2,PO3,PO4,PO12	PSO1,PSO3
				CO3	Compare various searching techniques using arrays.	PO1,PO2,PO3,PO4,PO12	PSO1,PSO3
				CO4	Use linear and non-linear data structures like stacks, queues, linked list, tree, etc.	PO1,PO2,PO3,PO4,PO12	PSO1,PSO3
				CO5	Design and formulate different sorting algorithms	PO1,PO2,PO3,PO4,PO12	PSO1,PSO3
7	I		**MCA-107** Database Management Systems Lab	CO1	Get practical knowledge on designing and creating relational database systems	PO1,PO2,PO3,PO4,PO6,PO8,PO9,PO10,PO11,PO12	PSO1,PSO2,PSO3
				CO2	Implement basic SQL DDL Queries	PO1,PO2,PO3,PO9,PO10,	PSO1,PSO2,PSO3
				CO3	Implement basic SQL DML Queries	PO1,PO2,PO3,PO9,PO10,	PSO1,PSO2,PSO3
				CO4	Understand various advanced queries execution such as relational constraints, joins, set operations, aggregate functions, trigger, view and embedded SQL.	PO1,PO2,PO3,PO4,PO5,PO6,PO9,PO10,PO11,PO12	PSO1,PSO2,PSO3

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				CO5	To design and implement database applications on their own.	PO1,PO2,PO3,PO4,PO5,PO6,PO8,PO9,PO10,PO11,PO12	PSO1,PSO2,PSO3
8	II	MCA	**MCA-201**Software Engineering	CO1	Describe software engineering layered technology and process framework	PO1,PO2,PO3,PO4,PO5,PO6,PO8,PO9,PO10	PSO1,PSO3
				CO2	Evaluate the different process models and choose the best model for their project	PO1,PO2,PO3,PO4,PO5,PO7,PO10,PO12	PSO1,PSO3
				CO3	Understand the different development practices and its advantages	PO1,PO4,PO5,PO10,PO12	PSO1,PSO3
				CO4	Explain software testing approaches, software tactics and metrics for process and project domains	PO1,PO2,PO3,PO4,PO7,PO8,PO10,PO12	PSO1,PSO3
				CO5	Analyze estimation techniques, quality management and formal methods		
9	II	MCA	**MCA-202**ProgrammingandProblemSolvingUsingPython	CO1	Demonstrate understanding of modern version control tools.	PO1,PO2,PO3,PO4,PO5,PO6,PO7,PO8,PO9,PO10,PO11,PO12	PSO1,PSO2,PSO3
				CO2	Exhibit facility with a Linux command line environment.	PO1,PO2,PO3,PO4,PO5,PO6,PO7,PO8,PO9,PO10,PO11,PO12	PSO1,PSO2,PSO3
				CO3	Demonstrate understanding of the role of testing in scientific computing, and Write unit tests in Python.	PO1,PO2,PO3,PO4,PO5,PO6,PO7,PO8,PO9,PO10,PO11,PO12	PSO1,PSO2,PSO3
				CO4	Use command line tools to write and edit code.	PO1,PO2,PO3,PO4,PO5,PO6,P	PSO1,PSO2,PSO3

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						O7,PO8,PO9,PO10,PO11,PO12	
				CO5	Develop publication-ready graphics from a dataset.	PO1,PO2,PO3,PO4,PO5,PO6,PO7,PO8,PO9,PO10,PO11,PO12	PSO1,PSO2,PSO3
10	**II**	MCA	**MCA-203** ComputerNetworks	CO1	Analyse basic taxonomy and terminology of the computer networking area.	PO1,PO2,PO4,PO5,PO7,PO10,PO12	PSO2,PSO3
				CO2	Describe the configuration and design of a small network	PO1,PO2,PO3,PO5,PO6,PO7,PO8,PO10,PO11	PSO1,PSO2,PSO3
				CO3	Explain about research areas and future internets research fields	PO1,PO2,PO3,PO4,PO5,PO6,PO7,PO9,PO10,PO11	PSO1,PSO2,PSO3
				CO4	Learn components and rules of communications	PO1,PO2,PO3,PO4,PO9,PO10,PO12	PSO2,PSO3
				CO5	Construct and implement layer protocols within an environment	PO1,PO2,PO3,PO4,PO8,PO10	PSO2,PSO3
11	**II**	MCA	**MCA-204** WebTechnologies	CO1	Explain the technologies used in web applications.	PO1,PO2,PO3,PO4,PO5,PO7,PO9,PO10,PO12	PSO1,PSO3
				CO2	DemonstrateHTML5, CSS, Java Script coding for web applications	PO1,PO2,PO3,PO4,PO6,PO7,PO9,PO10,PO12	PSO1,PSO3
				CO3	Design creative websites using object-based scripting concepts	PO1,PO2,PO3,PO4,PO6,PO10,PO11	PSO1,PSO2,PSO3
				CO4	Learn to access data base through Java programs, using Java Data	PO1,PO2,PO3,P	PSO1,PSO2,P

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13					Base Connectivity (JDBC)	O4,PO10,PO11	SO3
				CO5	Create dynamic webpages, using Servlets andJSP	PO1,PO2,PO3,PO4,,PO10,	PSO1,PSO3
12	**II**	MCA	**MCA-205** ArtificialIntelligence	CO1	Understand the history, development and various applications of artificial intelligence	PO1,PO2,PO4,PO9,PO10,PO11	PSO1,PSO2,PSO3
				CO2	Illustrate knowledge base system	PO1,PO2,PO3,PO9,PO10,PO11	PSO1,PSO3
				CO3	Solve different problems using AI algorithm	PO1,PO2,,PO4,PO5,PO9,PO10,PO11,PO12	PSO1,PSO3
				CO4	Analyse how uncertainty is being tackled in the knowledge representation and reasoning process	PO1,PO2,PO9,PO10,PO11,PO12	PSO1
				CO5	Classify the expert systems	PO1,PO2,PO3,PO4,PO10,PO11	PSO1,PSO3
13	**II**	MCA	**MCA-206** PythonProgramming Lab	CO1	Write, test, and debug simple Python programs	PO1,PO2,PO3,PO4,PO5,PO6,PO7,PO8,PO9,PO10,PO11,PO12	PSO1,PSO2,PSO3
				CO2	Apply the concept of conditionals and loops in Python programs.	PO1,PO2,PO3,PO4,PO5,PO6,PO7,PO8,PO9,PO10,PO11,PO12	PSO1,PSO2,PSO3
				CO3	Develop the Python programs step-wise by defining functions and calling them.	PO1,PO2,PO3,PO4,PO5,PO6,PO7,PO8,PO9,PO10,PO11,PO12	PSO1,PSO2,PSO3
				CO4	Develop the programs in basic C constructs	PO1,PO2,PO3,PO4,PO5,PO6,PO7,PO8,PO9,PO10,PO11,PO12	PSO1,PSO2,PSO3

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				CO5	Read and write data from/to files in Python.	PO1,PO2,PO3,PO4,PO5,PO6,PO7,PO8,PO9,PO10,PO11,PO12	PSO1,PSO2,PSO3
14	II	MCA	**MCA-207** Web Technologies Lab	CO1	List varioustags in html and use these, apply Cascaded style sheetto create web page.	PO1,PO2,PO3,PO4,PO5,PO6,PO7,PO8,PO9,PO10,PO11,PO12	PSO1,PSO2,PSO3
				CO2	Design and explain the basic concept of XML and create XML documents and Schema.	PO1,PO2,PO3,PO5,PO6,PO7,PO8,PO9,PO10,PO11,PO12	PSO1,PSO2,PSO3
				CO3	Compare Servlet and JSP concepts and apply JSP concepts to create dynamic webpages by reducing the code complexity and store data in database.	PO1,PO2,PO3,PO4,PO5,PO6,PO7,PO8,PO9,PO10,PO11,PO12	PSO1,PSO2,PSO3
				CO4	Explain usage of web servers and use this to develop webpage and store data in database in JSP on Web server.	PO1,PO2,PO3,PO4,PO5,PO6,PO7,PO8,PO9,PO10,PO11,PO12	PSO1,PSO2,PSO3
				CO5	Develop solution to complex problems using appropriate method, technologies, framework, web services and content management.	PO1,PO2,PO3,PO4,PO5,PO6,PO7,PO8,PO10,PO11,PO12	PSO1,PSO2,PSO3
15	III	MCA	**MCA-301** Data Mining and Big Data	CO1	Explain Data Ware house fundamentals, Data Mining Principles	PO1,PO2,PO3,PO4,PO6	PSO1
				CO2	Demonstrate appropriate data mining algorithms to solve real world problems	PO1,PO2,PO3,PO4,PO7,PO9,PO12	PSO1
				CO3	Compare different data mining techniques like classification, prediction, clustering and association rule mining.	PO1,PO2,PO3,PO4,PO5,PO7,P	PSO1

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						O9,PO11,PO12	
				CO4	Construct big data associated applications in intelligent business and scientific computing	PO1,PO2,PO3,PO4,PO6,PO9,PO11,PO12	PSO1,PSO3
				CO5	Infer fundamental enabling techniques and scalable algorithms like Hadoop, Map Reduce in big dataanalytics	PO1,PO2,PO3,PO4,PO9,PO11,PO12	PSO1,PSO3
16	**III**	MCA	**MCA-302** Cryptography andNetworkSecurity	CO1	Find the factors driving the need for network security,	PO1,PO2,PO8,PO9,PO10	PSO1,PSO2
				CO2	Identify and classify particular examples of attacks,	PO1,PO2,PO3,PO8,PO9,PO10	PSO1,PSO2
				CO3	Compare symmetric and a symmetric encryption system and their vulnerability to attacks	PO1,PO2,PO3,PO4,PO8,PO9,PO10	PSO1,PSO2,PSO3
				CO4	Summarize the use of hash functions and explain the characteristics of one-way and collision-free functions	PO1,PO2,PO3,PO8,PO10,PO11,PO12	PSO1,PSO2,PSO3
				CO5	Illustratetheeffectivenessofpasswordsinaccesscontrolandtheinfluence ofhuman behaviour.	PO1,PO8,PO10,PO11,PO12	PSO1,PSO2,PSO3
17	**III**	MCA	**MCA-303** Cloud Computing	CO1	Distinguish different types of Distributed Computing models and identify different cloud computing models and services provided by cloud providers.	PO1,PO2,PO3,PO4,PO6,PO8,PO9,PO11	PSO1,PSO2
				CO2	Demonstrate virtualization of clusters and data centres	PO1,PO2,PO3,PO4,PO5,PO6,PO7,PO8,PO9,PO11,PO12	PSO1,PSO2
				CO3	Apply and design Cloud Resource Management and scheduling algorithms	PO1,PO2,PO3,PO4,PO6,PO8,PO10,PO11,PO12	PSO1,PSO2,PSO3
				CO4	Explain Storage models and security aspects of Cloud	PO1,PO2,PO3,P	PSO1,PSO2,P

							O4,PO8,PO10,PO11	SO3
				CO5	Illustrate Cloud Applications and Paradigms		PO1,PO2,PO3,PO4,PO8,PO11	PSO1,PSO2,PSO3
18	**III**	MCA	**MCA-304** MachineLearning	CO1	How to make a computer program learn from experience		PO1,PO2,PO3,PO4,PO5,PO7,PO8,PO9,PO10,PO12	PSO1,PSO3
				CO2	Illustrate the significance of concept learning		PO1,PO2,PO3,PO4,PO10,PO12	PSO1,PSO3
				CO3	Representation of decisions and decision making explicitly		PO1,PO3,PO4,PO5,PO6,PO10	PSO1,PSO3
				CO4	Construct finite and infinite Hypothesis spaces for computational learning		PO1,PO2,PO3,PO4,PO5,PO7,PO8,PO10	PSO1,PSO3
				CO5	Apply Inductive and Analytical learning in developing learning tasks		PO1,PO2,PO10,PO12	PSO1,PSO3
19	**III**	MCA	**MCA-305.2** Open source Technologies	CO1	To implement PHP script using Decisions and Loops.		PO1,PO2,PO3,PO4,PO7,PO8,PO9,PO10,PO12	PSO1,PSO2,PSO3
				CO2	To develop PHP applications using Strings, Arrays and Functions		PO1,PO2,PO3,PO4,PO7,PO8,PO9,PO10,PO12	PSO1,PSO2,PSO3
				CO3	To design object-oriented programming (OOP) principals for PHP and use HTML form elements that work with any server-side Language.		PO1,PO2,PO3,PO4,PO5,PO6,PO7,PO8,PO9,PO10,PO11,PO12	PSO1,PSO2,PSO3
				CO4	To display and insert data using PHP and My SQL.		PO1,PO2,PO3,PO4,PO5,PO6,PO7,PO8,PO9,PO10,PO11,PO12	PSO1,PSO2,PSO3

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20	III	MCA	**MCA -306** Data Mining and Big Data Lab	CO1	Understand and implement the basics of data structures like Linked list, stack, queue, set and map in Java.	PO1,PO2,PO3,PO4,PO6,PO8,PO10	PSO1
				CO2	Demonstrate the knowledge of big data analytics and implement different file management task in Hadoop.	PO1,PO2,PO3,PO4,PO5,PO6,PO8,PO10,PO11,PO12	PSO1,PSO2
				CO3	Understand Map Reduce Paradigm and develop data applications using variety of systems.	PO1,PO2,PO3,PO4,PO5,PO6,PO8,PO10,PO11,PO12	PSO1,PSO2,PSO3
				CO4	Analyze and perform different operations on data using Pig Latin scripts.	PO1,PO2,PO3,PO4,PO7,PO10,PO11,PO12	PSO1,PSO3
21	III	MCA	**MCA- 307** Cryptography &Network Security Lab	**CO1**	Discuss the basics of network security and cryptography.	PO1,PO2,PO8,PO9,PO10	PSO1,PSO2
				CO2	Explain the various standards Symmetric Encryption algorithms used to provide confidentiality.	PO1,PO2,PO3,PO8,PO9,PO10	PSO1,PSO2
				CO3	Explain the various standards Asymmetric Encryption algorithms to achieve authentication.	PO1,PO2,PO3,PO8,PO9,PO10	PSO1,PSO2,PSO3
				CO4	Demonstrate encryption techniques to secure data in transit across network.	PO1,PO2,PO3,PO4,PO8,PO10,PO11,PO12	PSO1,PSO2,PSO3
22	IV	MCA	**MCA – 401** Project Work	CO1	To Prepare abstract for given project by identifying the requirements and prospective solution.	PO1,PO2,PO3,PO4,PO5,PO9,PO10,PO11,PO12	
				CO2	To Develop latest information related to the project from various sources to analyze the project.	PO1,PO2,PO3,PO4,PO5,PO8,PO10,PO11,PO12	

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				CO3	To Choose the materials for the project as per specifications and efficient test for developing the project.		
				CO4	To Illustrate effective team work after efficient testing, elaborate the completed task and compile the project.		
				CO5	To Prepare a good report of the project as per the guidelines and present to the panel of experts.		

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I MCA – I SEMESTER – MCA-101-DATASTRUCTURESwithC++

	MAPPING(COs & POs)												MAPPING(COs &PSOs)		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	P012	PSO1	PSO2	PSO3
CO1	3	3	3	2	2	-	2	-	1	3	2	2	3	3	3
CO2	3	3	3	2	2	1	2	-	1	3	2	2	3	3	3
CO3	3	3	3	2	2	2	3	3	-	3	2	2	3	3	3
CO4	3	3	3	2	2	-	3	-	-	3	2	2	3	3	3
Ave rage	3	3	3	2	2	1.5	2.5	3	1	3	2	2	3	3	3

OVER ALL AVERAGE BETWEEN COS & POS =   2.3   **OVER ALL AVERAGE BETWEEN COS & PSOS = 3**

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I MCA – I SEMESTER – MCA -102 DATABASE MANAGEMENT SYSTEM

	MAPPING(COs & POs)												MAPPING(COs &PSOs)		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	P012	PSO1	PSO2	PSO3
CO1	2	2	3	-	-	-	-	2	-	1	-	2	2	-	1
CO2	2	-	3	-	-	2	-	2	2	2	2	2	-	2	2
CO3	2	-	2	-	2	-	-	-	2	2	2	-	2	2	2
CO4	2	2	3	-	-	2	-	-	-	3	-	-	2	-	3
Ave rage	2	**2**	2.75	-	2	**2**	-	2	2	2	2	2	2	2	2

OVER ALL AVERAGE BETWEEN COS & POS = 2.075   **OVER ALL AVERAGE BETWEEN COS & PSOS =2**

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I MCA – I SEMESTER – MCA-103 - PROBABILITYANDSTATISTICS

CO	MAPPING(COs & POs)												MAPPING(COs &PSOs)		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	P012	PSO1	PSO2	PSO3
CO1	3	2	3	-	-	-	-	-	-	-	-	-	-	-	-
CO2	2	2	1	-	-	-	-	-	-	-	-	-	-	-	-
CO3	3	2	2	-	-	-	-	-	-	-	-	-	-	-	-
CO4	2	2	2	-	-	-	-	-	-	-	-	-	-	-	-
Ave rage	**2.5**	**2**	**2**	-	-	-	-	-	-	-	-	-	-	-	-

OVER ALL AVERAGE BETWEEN COS & POS =2.1   **OVER ALL AVERAGE BETWEEN COS & PSOS =0**

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I MCA – I SEMESTER – MCA-104 - OPERATINGSYSTEMS

	MAPPING(COs & POs)												MAPPING(COs &PSOs)		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	P012	PSO1	PSO2	PSO3
CO1	3	2	1	3	-	-	-	-	-	3	-	-	3	-	2
CO2	3	3	1	3	-	-	3	-	-	3	-	3	3	-	3
CO3	3	-	-	3	-	-	-	-	-	3	-	3	3	-	2
CO4	3	3	1	3	-	-	-	3	-	3	-	3	3	-	3
Ave rage	**3**	**2.6**	**1**	**3**	**-**	**-**	**3**	**3**	**-**	**3**	**-**	**3**	**3**	**-**	**2.5**

OVER ALL AVERAGE BETWEEN COS & POS = 2.7   **OVER ALL AVERAGE BETWEEN COS & PSOS = 2.75**

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I MCA – I SEMESTER – MCA-105- COMPUTERORGANIZATION

	MAPPING(COs & POs)												MAPPING(COs &PSOs)		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	P012	PSO1	PSO2	PSO3
CO1	3	2	2	3	2	-	2	3	-	3	3	2	2	3	2
CO2	3	2	2	3	2	3	-	2	3	-	3	2	2	3	2
CO3	3	2	2	2	-	2	-	-	2	2	-	-	2	2	3
CO4	3	2	2	2	-	-	3	-	-	-	-	-	2	2	-
Ave rage	3	2	2	2.5	2	2.5	2.5	2.5	2.5	2.5	3	2	2	2.5	2.3

OVER ALL AVERAGE BETWEEN COS & POS = 2.41   **OVER ALL AVERAGE BETWEEN COS & PSOS =2.26**

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I MCA – I SEMESTER – MCA-106 -DATASTRUCTURESLab

	MAPPING(COs & POs)												MAPPING(COs &PSOs)		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	P012	PSO1	PSO2	PSO3
CO1	3	-	3	3	-	-	-	-	-	-	-	3	3	-	2
CO2	3	2	1	3	-	-	-	-	-	-	-	3	3	-	2
CO3	3	2	2	3	-	-	-	-	-	-	-	2	3	-	2
CO4	3	3	3	3	-	-	-	-	-	-	-	2	3	-	2
CO5	3	2	2	3	-	-	-	-	-	-	-	3	3	-	2
Ave rage	3	2.25	2.2	3	-	-	-	-	-	-	-	2.6	3	-	2

OVER ALL AVERAGE BETWEEN COS & POS = 2.6   **OVER ALL AVERAGE BETWEEN COS & PSOS = 2.5**

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I MCA – I SEMESTER – MCA-107 -DATABASE MANAGEMENT SYSTEMS LAB

	MAPPING(COs & POs)												MAPPING(COs &PSOs)		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	P012	PSO1	PSO2	PSO3
CO1	2	1	1	1	-	1	-	1	2	2	1	2	3	1	3
CO2	1	1	1	-	-	-	-	-	1	1	-	-	1	1	1
CO3	2	2	2	-	-	-	-	-	2	2	-	-	1	1	2
CO4	3	3	3	3	3	3	-	-	3	3	3	3	2	2	3
CO5	3	3	3	3	3	3	-	3	3	3	3	3	3	3	3
Ave rage	2.2	2	2.5	2.3	3	2.3	-	2	2.2	2.2	2.3	2.6	2	1.6	2.4

OVER ALL AVERAGE BETWEEN COS & POS = 2.3   **OVER ALL AVERAGE BETWEEN COS & PSOS = 2**

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I MCA – II SEMESTER – MCA-201:SOFTWAREENGINEERING

	MAPPING(COs & POs)												MAPPING(COs &PSOs)		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	P012	PSO1	PSO2	PSO3
CO1	3	2	3	3	3	2	-	2	3	3	-	-	3	-	3
CO2	3	3	3	3	3	-	3	-	-	3	-	3	3	-	3
CO3	3	-	-	3	3	-	-	-	-	3	-	3	3	-	2
CO4	3	3	2	3	-	-	2	-	-	3	-	3	3	-	3
Average	3	2.6	2.6	3	3	2	2.5	2	3	3	-	3	3	-	2.75

OVER ALL AVERAGE BETWEEN COS & POS = 2.7   **OVER ALL AVERAGE BETWEEN COS & PSOS = 2.87**

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I MCA – II SEMESTER – MCA-202: Programming and Problem Solving Using Python

	MAPPING(COs & POs)												MAPPING(COs &PSOs)		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	P012	PSO1	PSO2	PSO3
CO1	3	3	3	3	2	2	3	1	2	3	2	3	3	3	3
CO2	3	3	3	2	2	2	2	1	2	3	2	2	3	3	3
CO3	3	3	3	2	2	2	2	1	2	3	2	2	3	3	3
CO4	3	3	3	3	2	2	2	1	2	3	2	2	3	3	3
CO5	3	3	3	3	2	2	2	1	2	3	2	2	3	3	3
Average	3	3	3	2.6	2	2	2.2	1	2	3	2	2.2	3	3	3

OVER ALL AVERAGE BETWEEN COS & POS = 2.33   **OVER ALL AVERAGE BETWEEN COS & PSOS = 3**

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I MCA – II SEMESTER – MCA-203:COMPUTERNETWORKS

	MAPPING(COs & POs)												MAPPING(COs &PSOs)		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	P012	PSO1	PSO2	PSO3
CO1	2	2	-	2	2	-	2	-	-	2	-	2	-	3	2
CO2	2	2	2	-	2	3	2	2	-	2	2	-	2	3	2
CO3	2	2	2	3	2	3	2	-	2	3	2	-	2	3	2
CO4	2	2	2	3	-	-	-	-	2	3	-	2	-	3	2
CO5	2	2	2	3	-	-	-	2	-	2	-	-	-	3	2
Ave rage	2	2	2	2.75	2	3	2	2	2	2.4	2	2	2	3	2

OVER ALL AVERAGE BETWEEN COS & POS = 2.17   **OVER ALL AVERAGE BETWEEN COS & PSOS = 2.33**

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I MCA – II SEMESTER – MCA-204:WEBTECHNOLOGIES

	MAPPING(COs & POs)												MAPPING(COs &PSOs)		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	P012	PSO1	PSO2	PSO3
CO1	3	2	2	2	2	-	2	-	2	2	-	2	2	-	2
CO2	3	2	2	2	2	2	2	-	2	2	-	2	2	-	2
CO3	3	2	2	3	-	2	-	-	-	3	3	-	3	2	3
CO4	3	2	2	3	-	-	-	-	-	3	3	-	3	2	3
CO5	3	2	2	3	-	-	-	-	-	3	-	-	3	-	3
Ave rage	3	2	2	2.6	2	2	2	-	2	2.6	3	2	2.6	2	2.6

OVER ALL AVERAGE BETWEEN COS & POS = 2.29   **OVER ALL AVERAGE BETWEEN COS & PSOS =2.4**

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I MCA – II SEMESTER – MCA- 205:ARTIFICIALINTELLIGENCE

	MAPPING(COs & POs)												MAPPING(COs &PSOs)		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	P012	PSO1	PSO2	PSO3
CO1	3	3	-	3	-	-	-	-	2	3	3	-	2	2	2
CO2	3	3	3	-	-	-	-	-	2	3	3	-	2	-	2
CO3	3	3	-	3	3	-	-	-	3	2	3	3	3	-	2
CO4	3	3	-	-	-	-	-	-	3	2	3	3	3	-	-
CO5	3	3	3	3	-	-	-	-	-	3	2	-	3	-	3
Ave rage	3	3	3	3	3	-	-	-	2.5	2.6	2.8	3	2.6	2	2.25

OVER ALL AVERAGE BETWEEN COS & POS = 2.87   **OVER ALL AVERAGE BETWEEN COS & PSOS = 2.28**

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I MCA – II SEMESTER – MCA-206 -PYTHON PROGRAMMING LAB

	MAPPING(COs & POs)												MAPPING(COs &PSOs)		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	P012	PSO1	PSO2	PSO3
CO1	3	3	3	3	2	1	2	1	1	3	2	2	3	3	3
CO2	3	3	3	3	2	1	2	1	1	3	2	2	3	3	3
CO3	3	3	3	3	2	1	2	1	1	3	2	2	3	3	3
CO4	3	3	3	3	2	1	2	1	1	3	2	2	3	3	3
CO5	3	3	3	3	2	1	2	1	1	3	2	2	3	3	3
Ave rage	**3**	**3**	**3**	**3**	**2**	**1**	**2**	**1**	**1**	**3**	**2**	**2**	**3**	**3**	**3**

OVER ALL AVERAGE BETWEEN COS & POS = 2.16   **OVER ALL AVERAGE BETWEEN COS & PSOS =3**

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I MCA – II SEMESTER – MCA-207 –WEB TECHNOLOGIES LAB

	MAPPING(COs & POs)												MAPPING(COs &PSOs)		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	P012	PSO1	PSO2	PSO3
CO1	3	3	3	2	2	3	2	2	2	3	2	2	3	3	3
CO2	3	3	3	-	2	2	3	2	2	3	2	2	3	3	3
CO3	3	3	3	3	2	2	3	2	3	3	2	2	3	3	3
CO4	3	3	3	3	2	3	3	3	3	3	2	2	3	3	3
CO5	3	3	3	3	2	2	3	3		2	2	2	3	3	3
Ave rage	3	3	3	2.75	2	2.4	2.8	2.4	2.5	2.8	2	2	3	3	3

OVER ALL AVERAGE BETWEEN COS & POS = 2.55   **OVER ALL AVERAGE BETWEEN COS & PSOS = 3**

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II MCA – III SEMESTER – MCA -301 - DATA MININGANDBIGDATA

	MAPPING(COs & POs)												MAPPING(COs &PSOs)		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	P012	PSO1	PSO2	PSO3
CO1	3	2	2	2	-	2	-	-	-	-	-	-	2	-	-
CO2	3	2	2	2	-	-	2	-	3	-	3	3	2	-	-
CO3	3	3	2	2	2	-	2	-	3	-	3	3	3	-	-
CO4	3	3	2	2	-	2	-	-	3	-	3	3	3	-	3
CO5	3	3	2	2	-	-	-	-	3	-	3	3	3	-	3
Ave rage	3	2.6	2	2	2	2	2	-	3	-	3	3	2.6	-	3

OVER ALL AVERAGE BETWEEN COS & POS =   2.46   **OVER ALL AVERAGE BETWEEN COS & PSOS =2.8**

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II MCA – III SEMESTER –MCA- 302- CRYPTOGRAPHY ANDNETWORKSECURITY

	MAPPING(COs & POs)												MAPPING(COs &PSOs)		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	P012	PSO1	PSO2	PSO3
CO1	3	3	-	-	-	-	-	3	2	3	-	-	3	3	-
CO2	3	3	3	-	-	-	-	3	2	3	-	-	3	3	-
CO3	3	3	2	3	-	-	-	3	2	3	-	-	3	3	3
CO4	3	3	3	-	-	-	-	3	-	3	3	3	3	3	3
CO5	3	-	-	-	-	-	-	3	-	3	3	3	3	3	3
Average	3	3	2.6	3	-	-	-	3	2	3	3	3	3	3	3

OVER ALL AVERAGE BETWEEN COS & POS = 2.84   **OVER ALL AVERAGE BETWEEN COS & PSOS = 3**

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II MCA – III SEMESTER – MCA- 303-CLOUD COMPUTING

	MAPPING(COs & POs)												MAPPING(COs &PSOs)		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	P012	PSO1	PSO2	PSO3
CO1	2	2	2	2	-	2	-	2	2	-	2	-	2	2	-
CO2	2	3	2	2	2	2	2	2	2	-	2	2	2	2	-
CO3	3	2	2	3	-	2	-	3	-	2	3	2	3	3	2
CO4	3	3	2	3	-	-	-	3	-	2	3	-	3	3	3
CO5	3	3	2	3	-	-	-	3	-	-	3	-	3	3	3
Ave rage	2.6	2.6	2	2.6	2	2	2	2.6	2	2	2.6	2	2.6	2.6	2.6

OVER ALL AVERAGE BETWEEN COS & POS = 2.25   **OVER ALL AVERAGE BETWEEN COS & PSOS = 2.6**

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II MCA – III SEMESTER – MCA-304-MACHINELEARNING

	MAPPING(COs & POs)												MAPPING(COs &PSOs)		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	P012	PSO1	PSO2	PSO3
CO1	3	2	3	3	3	-	3	2	3	3	-	3	3	-	2
CO2	3	3	3	3	-	-	-	-	-	3	-	3	3	-	3
CO3	3	-	3	3	3	2	-	-	-	3	-	-	3	-	2
CO4	3	3	2	3	3	-	2	2	-	3	-	-	3	-	3
CO5	3	2	-	-	-	-	-	-	-	3	-	3	3	-	3
Ave rage	3	2.5	2.75	3	3	2	2.5	2	3	3	-	3	3	-	2.6

OVER ALL AVERAGE BETWEEN COS & POS = 2.7   **OVER ALL AVERAGE BETWEEN COS & PSOS =2.8**

II MCA – III SEMESTER –MCA-305.2-OPEN SOURCE TECHNOLOGY

	MAPPING(COs & POs)												MAPPING(COs &PSOs)		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	P012	PSO1	PSO2	PSO3
CO1	3	3	2	3	-	-	2	1	1	3	-	3	3	3	3
CO2	3	3	3	3	-	-	2	1	2	3	-	2	3	3	3
CO3	3	3	3	3	1	2	3	1	1	3	2	2	3	3	3
CO4	3	3	3	3	2	1	3	1	2	2	1	2	3	3	3
CO5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Average	3	3	2.75	3	1.5	1.5	2.5	1	1.5	2.75	1.5	2.25	3	3	3

OVER ALL AVERAGE BETWEEN COS & POS = 2.22   **OVER ALL AVERAGE BETWEEN COS & PSOS = 3**

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II MCA – III SEMESTER –MCA-306- Data Mining and Big Data LAB

	MAPPING(COs & POs)												MAPPING(COs &PSOs)		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	P012	PSO1	PSO2	PSO3
CO1	3	2	2	2	-	2	-	-	-	-	-	-	2	-	-
CO2	3	2	2	2	-	-	2	-	3	-	3	3	2	-	-
CO3	3	3	2	2	2	-	2	-	3	-	3	3	3	-	-
CO4	3	3	2	2	-	2	-	-	3	-	3	3	3	-	3
CO5	3	3	2	2	-	-	-	-	3	-	3	3	3	-	3
Ave rage	3	2.6	2	2	2	2	2	-	3	-	3	3	2.6	-	3

OVER ALL AVERAGE BETWEEN COS & POS = 2.22   **OVER ALL AVERAGE BETWEEN COS & PSOS = 3**

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II MCA – III SEMESTER –MCA-307- Cryptography & Network Security LAB

	MAPPING(COs & POs)												MAPPING(COs &PSOs)		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	P012	PSO1	PSO2	PSO3
CO1	3	3	-	-	-	-	-	3	2	3	-	-	3	3	-
CO2	3	3	3	-	-	-	-	3	2	3	-	-	3	3	-
CO3	3	3	2	3	-	-	-	3	2	3	-	-	3	3	3
CO4	3	3	3	-	-	-	-	3	-	3	3	3	3	3	3
CO5	3	-	-	-	-	-	-	3	-	3	3	3	3	3	3
Average	3	3	2.6	3	-	-	-	3	2	3	3	3	3	3	3

OVER ALL AVERAGE BETWEEN COS & POS = 2.22   **OVER ALL AVERAGE BETWEEN COS & PSOS = 3**

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II MCA – IV SEMESTER –MCA-401 - Project Work

	MAPPING(COs & POs)												MAPPING(COs &PSOs)		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	P012	PSO1	PSO2	PSO3
CO1	2	2	3	2	2	-	-	-	2	1	2	3	3	2	2
CO2	3	3	3	3	3	-	2	-	-	2	-	2	2	3	2
CO3	3	2	3	2	-	2	-	-	-	-	2	-	3	2	2
CO4	2	2	3	-	2	-	-	2	-	2	-	2	2	2	2
CO5	2	3	2	3	2	-	-	-	-	-	2	2	1	3	2
Ave rage	2.4	2.4	2.8	2.5	2.25	2	2	2	2	1.6	2	2.75	2.2	2.4	2

OVER ALL AVERAGE BETWEEN COS & POS = 2.26   **OVER ALL AVERAGE BETWEEN COS & PSOS = 2.3**

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Course Code	Mapping Matrix														
	CO vs PO												COvsPSO		
	PO1	PO2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO1	PSO2	PSO3
MCA-101	3	3	3	2	2	1.5	2.5	3	1	3	2	2	3	3	3
MCA-102	2	2	2.75	-	2	2	-	2	2	2	2	2	2	2	2
MCA-103	2.5	2	2	-	-	-	-	-	-	-	-	-	-	-	-
MCA-104	3	2.6	1	3	-	-	3	3	-	3	-	3	3	-	2.5
MCA-105	3	2	2	2.5	2	2.5	2.5	2.5	2.5	2.5	3	2	2	2.5	2.3
MCA- 106	3	2.25	2.2	3	-	-	-	-	-	-	-	2.6	3	-	2
MCA -107	2.2	2	2.5	2.3	3	2.3	-	2	2.2	2.2	2.3	2.6	2	1.6	2.4
MCA-201	3	2.6	2.6	3	3	2	2.5	2	3	3	-	3	3	-	2.75
MCA-202	3	3	3	2.6	2	2	2.2	1	2	3	2	2.2	3	3	3
MCA-203	2	2	2	2.75	2	3	2	2	2	2.4	2	2	2	3	2

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MCA-204	3	2	2	2.6	2	2	2	-	2	2.6	3	2	2.6	2	2.6
MCA-205	3	3	3	3	3	-	-	-	2.5	2.6	2.8	3	2.6	2	2.25
MCA -206	3	3	3	3	2	1	2	1	1	3	2	2	3	3	3
MCA- 207	3	3	3	2.75	2	2.4	2.8	2.4	2.5	2.8	2	2	3	3	3
MCA-301	3	2.6	2	2	2	2	2	-	3	-	3	3	2.6	-	3
MCA-302	3	3	2.6	3	-	-	-	3	2	3	3	3	3	3	3
MCA-303	2.6	2.6	2	2.6	2	2	2	2.6	2	2	2.6	2	2.6	2.6	2.6
MCA-304	3	2.5	2.75	3	3	2	2.5	2	3	3	-	3	3	-	2.6
MCA-305.2	3	3	2.75	3	1.5	1.5	2.5	1	1.5	2.75	1.5	2.25	3	3	3
MCA -306	3	2.6	2	2	2	2	2	-	3	-	3	3	2.6	-	3
MCA -307	3	3	2.6	3	-	-	-	3	2	3	3	3	3	3	3
MCA-401 Project work	2.4	2.4	2.8	2.5	2.25	2	2	2	2	1.6	2	2.75	2.2	2.4	2
Average	2.80	2.52	2.43	2.68	2.20	2.01	2.30	2.15	2.16	2.63	2.42	2.49	2.67	2.60	2.61

OVER ALL AVERAGE BETWEEN COS & POS = 2.06　　　　　**OVER ALL AVERAGE BETWEEN COS & PSOS = 2.27**

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DEPARTMENT OF MBA

S. No	Semester	Course Code	Course Title	Course Outcomes(Cos)		Program Outcomes (POs)	Program Specific Outcomes (PSOs)
1	I	Bus1.1 (R22)	Management process	CO1	By the end of the course, students will be able to understand the basic concepts in Management- Levels, Skills, Role, Functions & Principles of Management.	PO1,PO2,PO3,PO4,PO5,PO6,PO7,PO8,PO9,PO10,PO11, PO12	PSO1,PSO2,PSO3
				CO2	By the end of the course, students will be able to analyse the theoretical concepts - Forecasting – Techniques of Forecasting. Decision making, MBO.	PO1,PO2,PO3,PO4,PO5,PO6,PO7,PO8,PO9,PO10,PO11, PO12	PSO1,PSO2,PSO3
				CO3	By the end of the course, students will be able to investigate the Functions & Responsibilities of Managers	PO1,PO2,PO3,PO4,PO5,PO6,PO7,PO8,PO9,PO10,PO11, PO12	PSO1,PSO2,PSO3
				CO4	By the end of the course, students will be able to evaluate the role of managers in Business Environment of the organization-, key elements in Organizational Behaviour, Challenges & Opportunities for OB.	PO1,PO2,PO3,PO4,PO5,PO6,PO7,PO8,PO9,PO10,PO11, PO12	PSO1,PSO2,PSO3
				CO5	By the end of the course, students will be able to explain the principles of human behaviour in an organization through Communication, Motivation, Group Dynamics, Leadership &	PO1,PO2,PO3,PO4,PO5,PO6,PO7,PO8,PO9,PO10,PO11, PO12	PSO1,PSO2,PSO3

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					Organizational Design.		
2		Bus1.2 (R22)	Quantitative Techniques for Managerial decisions	CO1	By the end of the course, students will be able to understand various statistical and mathematical techniques for business decisions.	PO1, PO3,PO4,PO5, PO9,PO10,PO11, PO12	PSO1,PSO2,PSO3
				CO2	By the end of the course, students will be able to analyse the benefits as well as the limits of quantitative analysis in a real-world context.	PO1, PO3,PO4,PO5, PO9,PO11, PO12	PSO2,PSO3
				CO3	By the end of the course, students will be able to investigate the probabilistic distributions in solving problems.	PO1, PO3,PO4, PO9, PO11, PO12	PSO2,PSO3
				CO4	By the end of the course, students will be able to evaluate the hypothesis testing for large and small samples.	PO3,PO4,PO5, PO9, PO10 PO11, PO12	PSO1,PSO2
				CO5	By the end of the course, students will be able to explain the linear programming problems by graphical and simplex methods.	PO3,PO4,PO5, PO11, PO12	PSO2,PSO3
3		Bus1.3. 2(R22)	Managerial Economics	CO1	By the end of the course, students will be able to understand the Role and Responsibilities of Managerial Economist in decision making.	PO1,PO2,PO3,PO4,PO5, PO8,PO9,PO10, PO12	PSO1,PSO2,PSO3
				CO2	By the end of the course, students will be able to analyse the Consumer Equilibrium under Ordinal and Cardinal Utility Theories-Indifference Curve Analysis - Income Substitution and Price Effects - Demand Analysis - Law of Demand	PO1,PO2,PO3,PO4,PO5, PO7,PO8,PO9,PO10, PO12	PSO1,PSO2,PSO3
				CO3	By the end of the course, students will be able to investigate the Total Product, Marginal and Average	PO1,PO2,PO3,PO4,PO5, PO8,PO9,PO10, PO12	PSO1,PSO2,PSO3

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					Product Curves, their derivation and interrelationships - The law of Diminishing Marginal Returns in Production		
				CO4	By the end of the course, students will be able to evaluate the Pricing and output decisions of firm under different market structures - Perfect Competitions pure monopoly, Oligopoly	PO1,PO2,PO3,PO4,PO5, PO8,PO9,PO10, PO12	PSO1,PSO2,PSO3
				CO5	By the end of the course, students will be able to explain the Pricing Practices of Firms	PO1,PO2,PO3,PO4,PO5, PO8,PO9,PO10, PO11, PO12	PSO1,PSO2,PSO3
4		Bus1.4 (R22)	Environment Management	CO1	By the end of the course, students will be able to understand how the economy is affected by internal and external factors and how this in turn affects the business.	PO1,PO2,PO3,PO4,PO5,PO6,PO7,PO8,PO9,PO10,PO11, PO12	PSO1,PSO2,PSO3
				CO2	By the end of the course, students will be able to analyze the consumption affects on business and economy.	PO1,PO2,PO3,PO4,PO5,PO6,PO7,PO8,PO9,PO10,PO11, PO12	PSO1,PSO2,PSO3
				CO3	By the end of the course, students will be able to investigate the factors of the Economic, Political, Legal and Global environment of business.	PO1,PO2,PO3,PO4,PO5,PO6,PO7,PO8,PO9,PO10,PO11, PO12	PSO1,PSO2,PSO3
				CO4	By the end of the course, students will be able to evaluate the Political and Legal Environment of Business.	PO1,PO2,PO3,PO4,PO5,PO6,PO7,PO8,PO9,PO10,PO11, PO12	PSO1,PSO2,PSO3
				CO5	By the end of the course, students will be able to explain the Global Environment of Business-Foreign collaborations in the Indian business, International economic	PO1,PO2,PO3,PO4,PO6,PO7,PO8,PO9,PO10,PO11, PO12	PSO1,PSO2,PSO3

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					institutions.	
5		Bus1.5 (R22)	Managerial Skill Development	CO1	By the end of the course, students will be able to understand the Business communication- essential elements of effective communication – communication barriers – overcoming communication barriers.	PO1,PO2,PO3,PO4,PO5,PO6,PO7,PO8,PO9,PO10,PO11, PO12	PSO1,PSO2,PSO3
				CO2	By the end of the course, students will be able to analyse the Media of Communication-: Verbal & non-verbal. Oral communication: Forms	PO1,PO2,PO3,PO4,PO5,PO6,PO7,PO8,PO9,PO10,PO11, PO12	PSO1,PSO2,PSO3
				CO3	By the end of the course, students will be able to investigate the Channels of Communication- steps to improve the effectiveness of formal and informal communication – 7C's of Communication	PO1,PO2,PO3,PO4,PO5,PO6,PO7,PO8,PO9,PO10,PO11, PO12	PSO1,PSO2,PSO3
				CO4	By the end of the course, students will be able to evaluate the Listening process importance in business communication	PO1,PO2,PO3,PO4,PO5,PO6,PO7,PO8,PO9,PO10,PO11, PO12	PSO1,PSO2,PSO3
				CO5	By the end of the course, students will be able to explain the Procedure and guidelines for effective report writing & essential skills of negotiation.	PO1,PO2,PO3,PO4,PO5,PO6,PO7,PO8,PO9,PO10,PO11, PO12	PSO1,PSO2,PSO3
6		Bus1.6 (R22)	Accounting for Managers	CO1	By the end of the course, students will be able to understand the Introduction to Accounting.	PO1,PO3,PO4,PO5,PO6,PO7,PO9,PO10,PO11, PO12	PSO1,PSO2,PSO3
				CO2	By the end of the course, students will be able to analyse the Preparation of Financial statements-Income statement and Balance sheet – Bank Reconciliation Statement.	PO1,PO3,PO4,PO5,PO6,PO7,PO9,PO10,PO11, PO12	PSO1
				CO3	By the end of the course, students will be able to investigate the Analysis of Financial Statements--Financial Ratio analysis – Funds	PO1,PO3,PO4,PO5,PO6,PO7,PO9,PO10,PO11, PO12	PSO1

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					Flow and Cash Flow Analysis.		
				CO4	By the end of the course, students will be able to evaluate the Management Accounting.	PO1,PO3,PO4,PO5,PO6,PO7,PO9,PO10,PO11,PO12	PSO1,PSO3
				CO5	By the end of the course, students will be able to explain the Contemporary Developments in fundamental of accounting.	PO1,PO3,PO4,PO5,PO6,PO7,PO9,PO10,PO11,PO12	PSO1,PSO3
7		Bus1.7 (R22)	IT for Managers	CO1	By the end of the course, students will be able to understand the Basic Computer Architecture-Input Output devices- Storage devices-Hardware and software-Networks.	PO1,PO2,PO3,PO4,PO5,PO6,PO7,PO8,PO9,PO10,PO11,PO12	PSO1,PSO2,PSO3
				CO2	By the end of the course, students will be able to analyse the Creation of Document- format document-Text Editing and saving-Organising information with tables and outlines- Mail merge.	PO1,PO2,PO3,PO4,PO5,PO6,PO7,PO8,PO9,PO10,PO11,PO12	PSO1,PSO2,PSO3
				CO3	By the end of the course, students will be able to investigate the Use of templates and slide designs, Slide master, Animation Timings, Action buttons, Rehearse Narration, Slideshow.	PO1,PO2,PO3,PO4,PO5,PO6,PO7,PO8,PO9,PO10,PO11,PO12	PSO1,PSO2,PSO3
				CO4	By the end of the course, students will be able to evaluate the Data Types, Variables, Constants, Input / Output, Operators (Arithmetic, relational, logical, bitwise.	PO1,PO2,PO3,PO4,PO5,PO6,PO7,PO8,PO9,PO10,PO11,PO12	PSO1,PSO2,PSO3
				CO5	By the end of the course, students will be able to explain the Security Threats and Attacks, Malicious Software, Hacking & Security Mechanisms.	PO1,PO2,PO3,PO4,PO5,PO6,PO7,PO8,PO9,PO10,PO11,PO12	PSO1,PSO2,PSO3
8	II	Bus 2.1 (R22)	Entrepreneurship	CO1	By the end of the course, students will be able to understand the Entrepreneurship-Characteristics-	PO1,PO2,PO3,PO4,PO5,PO6,PO7,PO8,PO9,PO10,PO11,	PSO1,PSO2,PSO3

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			Develo pment		Entrepreneur Vs Intrapreneur-Management Vs Entrepreneurship	PO12	
				CO2	By the end of the course, students will be able to analyse the Steps in assessingbusiness potential of an idea- Opportunity Recognition	PO1,PO2,PO3,PO4,PO5,PO6,PO7,PO8,PO9,PO10,PO11,PO12	PSO1,PSO2,PSO3
				CO3	By the end of the course, students will be able to investigate the Project preparationand Financing Ventures	PO1,PO2,PO3,PO4,PO5,PO6,PO7,PO8,PO9,PO10,PO11,PO12	PSO1,PSO2,PSO3
				CO 4	By the end of the course, students will be able to evaluate the Institutions SupportingSmall Business Enterprises	PO1,PO2,PO3,PO4,PO5,PO6,PO7,PO8,PO9,PO10,PO11,PO12	PSO1,PSO2,PSO3
				CO5	By the end of the course, students will be able to explain the Build a StartupManagement Team.	PO1,PO2,PO3,PO4,PO5,PO6,PO7,PO8,PO9,PO10,PO11,PO12	PSO1,PSO2,PSO3
9		Bus2.2 (R22)	Researc h Method ology & Busines s Analyti cs	CO1	By the end of the course, students will be able to understand the Nature and Scope ofResearch Methodology	PO1,PO2,PO3,PO4,PO5,PO6,PO7,PO8,PO9,PO10,PO11,PO12	PSO1,PSO2,PSO3
				CO2	By the end of the course, students will be able to analyse the Qualitative and Quantitative Research	PO1,PO2,PO3,PO4,PO5,PO6,PO7,PO8,PO9,PO10,PO11,PO12	PSO1,PSO2,PSO3
				CO3	By the end of the course, students will be able to investigate the Characteristics of agood sample,Types of sampling-Probability Sampling Types,Non-	PO1,PO2,PO3,PO4,PO5,PO6,PO7,PO8,PO9,PO10,PO11,PO12	PSO1,PSO2,PSO3

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					Probability		
				CO4	By the end of the course, students will be able to evaluate Multivariate Data analysis	PO1,PO2,PO3,PO4,PO5,PO6,PO7,PO8,PO9,PO10,PO11, PO12	PSO1,PSO2,PSO3
				CO5	By the end of the course, students will be able to explain Automated Data AnalysisUsing SPSS.	PO1,PO2,PO3,PO4,PO5,PO6,PO7,PO8,PO9,PO10,PO11, PO12	PSO1,PSO2,PSO3
10		Bus2.3 (R22)	Organizational Behaviour	CO1	By the end of the course, students will be able to understand the basic concepts in Management- Levels, Skills, Role, and Functions & Principles of Management.	PO1,PO2,PO3,PO4,PO5,PO6,PO7,PO8,PO9,PO10,PO11, PO12	PSO1,PSO2,PSO3
				CO2	By the end of the course, students will be able to analyse the theoretical concepts - Forecasting – Techniques of Forecasting. Decision making, MBO.	PO1,PO2,PO3,PO4,PO5,PO6,PO7,PO8,PO9,PO10,PO11, PO12	PSO1,PSO2,PSO3
				CO3	By the end of the course, students will be able to investigate the Functions & Responsibilities of Managers	PO1,PO2,PO3,PO4,PO5,PO6,PO7,PO8,PO9,PO10,PO11, PO12	PSO1,PSO2,PSO3
				CO4	By the end of the course, students will be able to evaluate the role of managers in Business Environment of the organization-, key elements in Organizational Behaviour, Challenges & Opportunities for OB.	PO1,PO2,PO3,PO4,PO5,PO6,PO7,PO8,PO9,PO10,PO11, PO12	PSO1,PSO2,PSO3
				CO5	By the end of the course, students will be able to explain the principles of human behaviour in an organization through Communication, Motivation, Group Dynamics, and Leadership	PO1,PO2,PO3,PO4,PO5,PO6,PO7,PO8,PO9,PO10,PO11, PO12	PSO1,PSO2,PSO3

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					& Organizational Design.		
11		Bus2.4(R22)	Human Resouir ce manage ment	CO1	By the end of the course, students will be able to understand the concept and importance of Human Resource Management in organizations	PO1,PO2,PO3,P O4,PO5,PO6,P O7,PO8,PO9,P O10,PO11, PO12	PSO1,PS O2,PSO3
				CO2	By the end of the course, students will be able to analyse the various functions of HRM, such as recruitment, selection, training and development, performance management, compensation and benefits, and employee relations	PO1,PO2,PO3,P O4,PO5,PO6,P O7,PO8,PO9,P O10,PO11, PO12	PSO1,PS O2,PSO3
				CO3	By the end of the course, students will be able to investigate the internal and external factors that impact human resource planning and Effective Coaching and Mentoring Skills	PO1,PO2,PO3,P O4,PO5,PO6,P O7,PO8,PO9,P O10,PO11, PO12	PSO1,PS O2,PSO3
				CO4	By the end of the course, students will be able to evaluate the training needs and design effective training programs and Career Development	PO1,PO2,PO3,P O4,PO5,PO6,P O7,PO8,PO9,P O10,PO11, PO12	PSO1,PS O2,PSO3
				CO5	By the end of the course, students will be able to explain the concepts of Quality ofWork Life (QWL) and Grievance handling Procedure	PO1,PO2,PO3,P O4,PO5,PO6,P O7,PO8,PO9,P O10,PO11, PO12	PSO1,PS O2,PSO3
12		Bus2.5(R22)	Financi al Manage ment	CO1	By the end of the course, students will be able to understand the Financial Managementand the goals of the firm	PO1,PO3,PO4,P O5,PO6,PO7,P O8,PO9,PO10,P O11, PO12	PSO1,PS O2,PSO3
				CO2	By the end of the course, students will be able to Analyse Investment DecisionsTraditional Techniques and Discounted Cash Flow Methods	PO1,PO2,PO3,P O4,PO5,PO6,P O7,PO8,PO9,P O10,PO11, PO12	PSO1,PS O2,PSO3

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				CO3	By the end of the course, students will be able to investigate the Capital StructureTheories – Net Income approach – Net operating income approach	PO1,PO2,PO3,PO4,PO5,PO6,PO7,PO8,PO9,PO10,PO11, PO12	PSO1,PSO2,PSO3
				CO4	By the end of the course, students will be able to evaluate Dividend Theories –Traditional position	PO1,PO2,PO3,PO4,PO5, PO10,PO11, PO12	PSO1,PSO2,PSO3
				CO5	By the end of the course, students will be able to explain Concepts of working capital –Determinants of working capital – Optimum level of current assets	PO1,PO2,PO3,PO4,PO5,PO6,PO7,PO10,PO11, PO12	PSO1,PSO2,PSO3
13		Bus2.6 (R22)	Marketing Management	CO1	By the end of the course, students will be able to understand the Concepts ofMarketing; Marketing Management Tasks; Marketing Environment	PO1,PO2,PO3,PO4,PO5,PO6,PO7,PO8,PO9,PO10,PO11, PO12	PSO1,PSO2,PSO3
				CO2	By the end of the course, students will be able to analyse Marketing InformationSystem and Marketing Research	PO1,PO2,PO3,PO4,PO5,PO6,PO7,PO8,PO9,PO10,PO11, PO12	PSO1,PSO2,PSO3
				CO3	By the end of the course, students will be able to investigate the Development ofMarketing Offerings Strategy	PO1,PO2,PO3,PO4,PO5,PO6,PO7,PO8,PO9,PO10,PO11, PO12	PSO1,PSO2,PSO3
				CO4	By the end of the course, students will be able to evaluate Pricing Strategies andPrograms Networks – Channels of Distribution.	PO1,PO2,PO3,PO4,PO5,PO6,PO7,PO8,PO9,PO10,PO11, PO12	PSO1,PSO2,PSO3
				CO5	By the end of the course, students will be able to explain the Designing and ManagingMarketing Communications.	PO1,PO2,PO3,PO4,PO5,PO6,PO7,PO8,PO9,PO10,PO11, PO12	PSO1,PSO2,PSO3
14		Bus2.7 (R22)	Production & Operati	CO1	By the end of the course, students will be able to understand the Evolution of Operations	PO1,PO2,PO3,PO4,PO5,PO7,PO8,PO9,PO10,P	PSO1,PSO2,PSO3

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			ons Management		Management	O11, PO12	
				CO2	By the end of the course, students will be able to analyse the Location Decision Factors and Planning methods (Numerical); Layout planning – Planning and Principles of Layout, Classification of Plant Layout	PO1,PO2,PO3,PO4,PO5,PO6,PO7,PO8,PO9,PO10,PO11, PO12	PSO1,PSO2,PSO3
				CO3	By the end of the course, students will be able to investigate the Supply Chain Management – Framework, principles, electronic supply chain management.	PO1,PO2,PO3,PO4,PO5,PO6,PO7,PO8,PO9,PO10,PO11, PO12	PSO1,PSO2,PSO3
				CO4	By the end of the course, students will be able to evaluate Inventory Management and Work study	PO1,PO2,PO3,PO4,PO5,PO6,PO7,PO8,PO9,PO10,PO11, PO12	PSO1,PSO2,PSO3
				CO5	By the end of the course, students will be able to explain the Quality, Maintenance and Project Management.	PO1,PO2,PO3,PO4,PO5,PO6,PO7,PO8,PO9,PO10,PO11, PO12	PSO1,PSO2,PSO3
15	III	Bus3.1 (R22)	Strategic Management & Business Policy	CO1	By the end of the course, students will be able to understand the Strategic Management	PO1,PO2,PO3,PO4,PO5,PO6,PO7,PO8,PO9,PO10,PO11, PO12	PSO1,PSO2,PSO3
				CO2	By the end of the course, students will be able to analyse corporate, business and functional level strategy; Intended, Deliberate, Realized, Unrealized and Emergent strategies	PO1,PO2,PO3,PO4,PO5,PO6,PO7,PO8,PO9,PO10,PO11, PO12	PSO1,PSO2,PSO3
				CO3	By the end of the course, students will be able to investigate the Strategic tools for analysis and appraisal of External Environment	PO1,PO2,PO3,PO4,PO5,PO6,PO7,PO8,PO9,PO10,PO11, PO12	PSO1,PSO2,PSO3

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				CO4	By the end of the course, students will be able to evaluate strengths and weakness of a firm - Resource Based Theory of the firm	PO1,PO2,PO3,PO4,PO5,PO6,PO7,PO8,PO9,PO10,PO11,PO12	PSO1,PSO2,PSO3
				CO5	By the end of the course, students will be able to explain the strategies for competitiveadvantage	PO1,PO2,PO3,PO4,PO5,PO6,PO7,PO8,PO9,PO10,PO11,PO12	PSO1,PSO2,PSO3
16		Bus3.2 (R22)	DSS & MIS	CO1	By the end of the course, students will be able to understand the MIS operating in functional areas of an organization.	PO1,PO2,PO3,PO4,PO5,PO6,PO7,PO8,PO9,PO10,PO11,PO12	PSO1,PSO2,PSO3
				CO2	By the end of the course, students will be able to analyse the Decision Making Process – Relationship between Decision- Making and MIS.	PO1,PO2,PO3,PO4,PO5,PO6,PO7,PO8,PO9,PO10,PO11,PO12	PSO1,PSO2,PSO3
				CO3	By the end of the course, students will be able to investigate the System Life Cycle Design - Prototype Approach - Detailed Study on Life Cycle System.	PO1,PO2,PO3,PO4,PO5,PO6,PO7,PO8,PO9,PO10,PO11,PO12	PSO1,PSO2,PSO3
				CO4	By the end of the course, students will be able to evaluate the Decision Support System: Definitions	PO1,PO2,PO3,PO4,PO5,PO6,PO7,PO8,PO9,PO10,PO11,PO12	PSO1,PSO2,PSO3
				CO5	By the end of the course, students will be able to explain the Database ManagementSystem.	PO1,PO2,PO3,PO4,PO5,PO6,PO7,PO8,PO9,PO10,PO11,PO12	PSO1,PSO2,PSO3
17		Bus3.3 (R22)	Business Ethcs & Corporate Governance	CO1	By the end of the course, students will be able to understand the Meaning and definition of Ethics – Ethical Theories	PO1,PO2,PO3,PO4,PO5,PO6,PO7,PO8,PO9,PO10,PO11,PO12	PSO1,PSO2,PSO3
				CO2	By the end of the course, students will be able to analyse the Ethical corporate behavior – Ethical	PO1,PO2,PO3,PO4,PO5,PO6,PO7,PO8,PO9,PO10,PO11,	PSO1,PSO2,PSO3

					decision making – Conflicts in decision making from the legal and moral points ofview.	PO12	
				CO3	By the end of the course, students will be able to investigate the Corporate Social Responsibility activities	PO1,PO2,PO3,PO4,PO5,PO6,PO7,PO8,PO9,PO10,PO11, PO12	PSO1,PSO2,PSO3
				CO4	By the end of the course, students will be able to evaluate the Meaning and definition of corporate governance – Corporate management structure for corporate governance	PO1,PO2,PO3,PO4,PO5,PO6,PO7,PO8,PO9,PO10,PO11, PO12	PSO1,PSO2,PSO3
				CO5	By the end of the course, students will be able to explain the Corporate governance requirements in the ever changing global scenario. Global practices.	PO1,PO2,PO3,PO4,PO5,PO6,PO7,PO8,PO9,PO10,PO11, PO12	PSO1,PSO2,PSO3
18		Bus3.4 F (R22)	International Financial Management	CO1	By the end of the course, students will be able to understand the Finance function in anInternational Context. Additional dimensions in achieving the wealth maximization goal	PO1,PO2,PO3,PO4,PO5,PO6,PO7,PO8,PO9,PO10,PO11, PO12	PSO1,PSO2,PSO3
				CO2	By the end of the course, students will be able to analyse the Foreign Exchange Markets	PO1,PO2,PO3,PO4,PO5,PO6,PO7,PO8,PO9,PO10,PO11, PO12	PSO1,PSO2,PSO3
				CO3	By the end of the course, students will be able to investigate the International CapitalMarkets	PO1,PO2,PO3,PO4,PO5,PO6,PO7,PO8,PO9,PO10,PO11, PO12	PSO1,PSO2,PSO3
				CO4	By the end of the course, students will be able to evaluate the International CapitalStructure and	PO1,PO2,PO3,PO4,PO5,PO6,PO7,PO8,PO9,PO10,PO11,	PSO1,PSO2,PSO3

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					Cost of Capital.	PO12	
				CO5	By the end of the course, students will be able to explain the International CashManagement, techniques	PO1,PO2,PO3,PO4,PO5,PO6,PO7,PO8,PO9,PO10,PO11, PO12	PSO1,PSO2,PSO3
19		3.4 HR	Management of Industrial Relations	CO1	By the end of the course, students will be able to understand the, Evolution and growth of Industrial Relations in India	PO1,PO2,PO3,PO4,PO5,PO6,PO7,PO8,PO9,PO10,PO11, PO12	PSO1,PSO2,PSO3
				CO2	By the end of the course, students will be able to analyse Evaluation of Worker's Participation in Management, and Conditions for success of Worker's Participation in Management	PO1,PO2,PO3,PO4,PO5,PO6,PO7,PO8,PO9,PO10,PO11, PO12	PSO1,PSO2,PSO3
				CO3	By the end of the course, students will be able to investigate the Grievance procedure, Machinery available for redressal of Grievances	PO1,PO2,PO3,PO4,PO5,PO6,PO7,PO8,PO9,PO10,PO11, PO12	PSO1,PSO2,PSO3
				CO4	By the end of the course, students will be able to evaluate Prevention and settlement of Industrial Disputes in India, Industrial Disputes act	PO1,PO2,PO3,PO4,PO5,PO6,PO7,PO8,PO9,PO10,PO11, PO12	PSO1,PSO2,PSO3
				CO5	By the end of the course, students will be able to explain the Labour laws in Fundamental Rights.	PO1,PO2,PO3,PO4,PO5,PO6,PO7,PO8,PO9,PO10,PO11, PO12	PSO1,PSO2,PSO3
20		Bus3.5 F (R22)	Security Analysis & Investment Management	CO1	By the end of the course, students will be able to understand the Investment Process	PO1,PO2,PO3,PO4,PO5,PO6,PO7,PO8,PO9,PO10,PO11, PO12	PSO1,PSO2,PSO3
				CO2	By the end of the course, students will be able to analyse the Valuation of fixed incomeSecurities	PO1,PO2,PO3,PO4,PO5,PO6,PO7,PO8,PO9,PO10,PO11,	PSO1,PSO2,PSO3

							PO12	
				CO3	By the end of the course, students will be able to investigate the Approaches to Security Analysis: Fundamental Analysis		PO1,PO2,PO3,PO4,PO5,PO6,PO7,PO8,PO9,PO10,PO11, PO12	PSO1,PSO2,PSO3
				CO4	By the end of the course, students will be able to evaluate the Portfolio Return andPortfolio Risk		PO1,PO2,PO3,PO4,PO5,PO6,PO7,PO8,PO9,PO10,PO11, PO12	PSO1,PSO2,PSO3
				CO5	By the end of the course, students will be able to explain the Portfolio Evaluation &Revision.		PO1,PO2,PO3,PO4,PO5,PO6,PO7,PO8,PO9,PO10,PO11, PO12	PSO1,PSO2,PSO3
21		3.5HR	Management Training & Development	CO1	By the end of the course, students will be able to understand the HRD objectives andphilosophy		PO1,PO2,PO3,PO4,PO5,PO6,PO7,PO8,PO9,PO10,PO11, PO12	PSO1,PSO2,PSO3
				CO2	By the end of the course, students will be able to analyse the Observing and Assessing HRD needs, Planning and Designing HRD Needs		PO1,PO2,PO3,PO4,PO5,PO6,PO7,PO8,PO9,PO10,PO11, PO12	PSO1,PSO2,PSO3
				CO3	By the end of the course, students will be able to investigate the Reviewing and Evaluating HRD		PO1,PO2,PO3,PO4,PO5,PO6,PO7,PO8,PO9,PO10,PO11, PO12	PSO1,PSO2,PSO3
				CO4	By the end of the course, students will be able to evaluate the HRD managers in MNC		PO1,PO2,PO3,PO4,PO5,PO6,PO7,PO8,PO9,PO10,PO11, PO12	PSO1,PSO2,PSO3
				CO5	By the end of the course, students will be able to explain the Designing HRD model- Global Restrictions on certain Countries by the hiring Country		PO1,PO2,PO3,PO4,PO5,PO6,PO7,PO8,PO9,PO10,PO11, PO12	PSO1,PSO2,PSO3

22		Bus4.1 (R22)	Busines s Analyti cs	CO1	By the end of the course, students will be able to understand the Introduction toBusiness Analytics	PO1,PO4,PO5,PO7,PO8,PO11, PO12	PSO1,PSO2,PSO3
				CO2	By the end of the course, students will be able to analyse the Business Analytics Cycle Information and Database Architecture and Data Gathering Process	PO1,PO2,PO3,PO4,PO5,PO6,PO7,PO8,PO11, PO12	PSO1,PSO2,PSO3
				CO3	By the end of the course, students will be able to investigate the Business Applicationsof Big Data	PO1,PO2,PO3,PO4,PO5,PO6,PO7,PO8,PO11, PO12	PSO1,PSO2,PSO3
				CO4	By the end of the course, students will be able to evaluate the Encourage an aptitude for business improvement, innovation and entrepreneurial action	PO1,PO2,PO3,PO4,PO5,PO6,PO7,PO8,PO11, PO12	PSO1,PSO2,PSO3
				CO5	By the end of the course, students will be able to explain the Reading R data sets andcreating variables	PO1,PO2,PO3,PO4,PO5,PO6,PO7,PO8,PO11, PO12	PSO1,PSO2,PSO3
23		Bus4.2 (R22)	Knowle dge manage ment	CO1	By the end of the course, students will be able to understand the concepts of Knowledge Economy	PO1,PO2,PO3,PO4,PO5,PO7,PO8,PO9,PO10,PO11, PO12	PSO1,PSO2,PSO3
				CO2	By the end of the course, students will be able to analyse the Information Technology & Knowledge Management	PO1,PO2,PO3,PO4,PO5,PO7,PO8,PO9,PO10,PO11, PO12	PSO1,PSO2,PSO3
				CO3	By the end of the course, students will be able to investigate the Future of Knowledge Management & Industry Perspective	PO1,PO2,PO3,PO4,PO5,PO7,PO8,PO9,PO10,PO11, PO12	PSO1,PSO2,PSO3
				CO4	By the end of the course, students will be able to evaluate the Knowledge Management Process	PO1,PO2,PO3,PO4,PO5,PO7,PO8,PO9,PO10,PO11, PO12	PSO1,PSO2,PSO3
				CO5	By the end of the course, students will be able to explain the	PO1,PO2,PO3,PO4,PO5,PO7,P	PSO1,PSO2,PSO3

					Implementation of Knowledge Management and Study of Road Blocks to the implementation of knowledge management	O8,PO9,PO10,PO11, PO12	
24		Bus4.3 (R22)	Global Business	CO1	By the end of the course, students will be able to understand the International business environment	PO1,PO2,PO3,PO4,PO5,PO7,PO8,PO9,PO10,PO11, PO12	PSO1,PSO2,PSO3
				CO2	By the end of the course, students will be able to analyse the Evaluating and selecting the country for global business and modes of entry into global business	PO1,PO2,PO3,PO4,PO5,PO7,PO8,PO9,PO10,PO11, PO12	PSO1,PSO2,PSO3
				CO3	By the end of the course, students will be able to investigate the Trends in internationalinvestments	PO1,PO2,PO3,PO4,PO5,PO6,PO7,PO8,PO9,PO10,PO11, PO12	PSO1,PSO2,PSO3
				CO4	By the end of the course, students will be able to evaluate the Trade restrictions and economic development	PO1,PO2,PO3,PO4,PO5,PO8,PO9,PO10,PO11, PO12	PSO1,PSO2,PSO3
				CO5	By the end of the course, students will be able to explain the Global Business Operations strategies	PO1,PO2,PO3,PO4,PO5,PO8,PO9,PO10,PO11, PO12	PSO1,PSO2,PSO3
25	IV	Bus 4.4 HR (R22)	International Human Resource Management	CO1	By the end of the course, students will be able to understand the concepts of HumanResource Management	PO1,PO2,PO3,PO4,PO6,PO7,PO8,PO9,PO10,PO11, PO12	PSO1,PSO2,PSO3
				CO2	By the end of the course, students will be able to analyse the International recruitment and selection - Training and development of expatriates	PO1,PO2,PO3,PO4,PO6,PO7,PO8,PO9,PO10,PO11, PO12	PSO1,PSO2,PSO3
				CO3	By the end of the course, students will be able to investigate the Repatriation -Processof repatriation, job related adjustments, organisational development	PO1,PO2,PO3,PO4,PO6,PO7,PO8,PO9,PO10,PO11, PO12	PSO1,PSO2,PSO3

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				CO4	By the end of the course, students will be able to evaluate Employer-EmployeeRelation in MNCs	PO1,PO2,PO3,PO4,PO6,PO7,PO8,PO9,PO10,PO11, PO12	PSO1,PSO2,PSO3
				CO5	By the end of the course, students will be able to explain Cross Cultural Management	PO1,PO2,PO3,PO4,PO6,PO7,PO8,PO9,PO10,PO11, PO12	PSO1,PSO2,PSO3
26		Bus4.5.F (R22)	Management of Financial Services	CO1	By the end of the course, students will be able to understand the Financial Services	PO1,PO2,PO3,PO4,PO5,PO6,PO7,PO8,PO9,PO10,PO11, PO12	PSO1,PSO2,PSO3
				CO2	By the end of the course, students will be able to analyse the Merchant Bankingguidelines	PO1,PO2,PO3,PO4,PO5,PO6,PO7,PO8,PO9,PO10,PO11, PO12	PSO1,PSO2,PSO3
				CO3	By the end of the course, students will be able to investigate the Mutual Funds policiesand Forfeiting – Securitization.	PO1,PO2,PO3,PO4,PO5,PO6,PO7,PO8,PO9,PO10,PO11, PO12	PSO1,PSO2,PSO3
				CO4	By the end of the course, students will be able to evaluate the Venture CapitalInstitutions in India	PO1,PO2,PO3,PO4,PO5,PO6,PO7,PO8,PO9,PO10,PO11, PO12	PSO1,PSO2,PSO3
				CO5	By the end of the course, students will be able to explain the Lease Financing	PO1,PO2,PO3,PO4,PO5,PO6,PO7,PO8,PO9,PO10,PO11, PO12	PSO1,PSO2,PSO3
27		Bus4.5 H (R22)	Performance & Compensation Management	CO1	By the end of the course, students will be able to understand the Introduction toPerformance Management	PO2,PO6,PO7,PO8,PO9,PO11,PO12	PSO1,PSO2,PSO3
				CO2	By the end of the course, students will be able to analyse the Introduction toCompensation Management	PO2,PO6,PO7,PO8,PO9,PO11,PO12	PSO1,PSO2,PSO3

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				CO3	By the end of the course, students will be able to investigate the Performance LinkedCompensation	PO2,PO6,PO7,PO8,PO9,PO11,PO12	PSO1,PSO2,PSO3
				CO4	By the end of the course, students will be able to evaluate the InternationalCompensation Management.	PO1,PO2,PO6,PO7,PO8,PO9,PO11, PO12	PSO1,PSO2,PSO3
				CO5	By the end of the course, students will be able to explain the CompensationAdministration	PO1,PO2,PO6,PO7,PO8,PO9,PO11, PO12	PSO1,PSO2,PSO3
28		Bus 4.6 F (R22)	Corporate Taxation	CO1	By the end of the course, students will be able to understand the concepts of IncomeTax Act, 1961	PO1,PO2,PO3,PO4,PO5, PO9,PO11,PO12	PSO1,PSO2,PSO3
				CO2	By the end of the course, students will be able to analyse the Computation of income of a company under Income from House Properties	PO2,PO6,PO7,PO8,PO9,PO11,PO12	PSO1,PSO2,PSO3
				CO3	By the end of the course, students will be able to investigate the Set-off and set-off and carry forward of losses	PO1,PO2,PO3,PO4,PO5,PO9, PO12	PSO1,PSO2,PSO3
				CO4	By the end of the course, students will be able to evaluate the Assessment of CompanyAssessee	PO1,PO2,PO3,PO4,PO5,PO9, PO12	PSO1,PSO2,PSO3
				CO5	By the end of the course, students will be able to explain the Tax planning	PO1,PO2,PO3,PO4,PO5,PO9, PO12	PSO1,PSO2,PSO3
29		Bus 4.6 H (R22)	HRD Strategy & Systems	CO1	By the end of the course, students will be able to understand the HRD objectives andphilosophy	PO1,PO2,PO3,PO4,PO5,PO6,PO7,PO8,PO9,PO10,PO11, PO12	PSO1,PSO2,PSO3
				CO2	By the end of the course, students will be able to analyse the Observing and AssessingHRD needs, Planning and Designing HRD Needs	PO1,PO2,PO3,PO4,PO5,PO6,PO7,PO8,PO9,PO10,PO11, PO12	PSO1,PSO2,PSO3

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				CO3	By the end of the course, students will be able to investigate the Reviewing and Evaluating HRD	PO1,PO2,PO3,PO4,PO5,PO6,PO7,PO8,PO9,PO10,PO11, PO12	PSO1,PSO2,PSO3
				CO4	By the end of the course, students will be able to evaluate the HRD managers in MNC	PO1,PO2,PO3,PO4,PO5,PO6,PO7,PO8,PO9,PO10,PO11, PO12	PSO1,PSO2,PSO3
				CO5	By the end of the course, students will be able to explain the Designing HRD model- Global Restrictions on certain Countries by the hiring Country	PO1,PO2,PO3,PO4,PO5,PO6,PO7,PO8,PO9,PO10,PO11, PO12	PSO1,PSO2,PSO3

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First Semester

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MAPPING OF COs WITH POs – ATTRIBUTIVE MATRIX
Department of MBA
Semester I

Course code and Name: 1.1 Management Process

	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12	PSO-1	PSO-2	PSO-3
CO-1	3	3	3	2	2	3	3	3	3	2	3	3	3	3	3
CO-2	3	3	3	3	2	2	2	3	3	2	2	2	2	3	3
CO-3	3	2	3	2	3	2	2	3	2	3	3	3	3	3	3
CO-4	3	3	3	3	2	2	3	3	3	2	2	2	2	3	2
CO-5	3	2	3	2	2	3	2	3	2	2	3	2	2	3	3
Avg	3	2.6	3	2.4	2.4	2.4	2.4	3	2.6	2.4	2.6	2.4	2.4	3	2.8

Overall Average between COs & POs = 2.60

Overall Average between COs & PSOs = 2.73

Levels: 1 = L1 – Remembering, 2 = L2 – Understanding, 3 = L3 – Applying, 4 = L4 – Analyzing, 5 = L5 – Evaluating, 6 = L6 – Creating.

Course code and Name: 1.2 Quantitative Techniques for Managerial Decisions

	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12	PSO-1	PSO-2	PSO-3
CO-1	3	-	3	2	2	-	-	-	3	3	2	2	3	3	3
CO-2	3	-	2	3	3	-	-	-	3	-	3	2	-	2	3
CO-3	3	-	3	3	-	-	-	-	3	-	2	3	-	2	3
CO-4	-	-	3	3	3	-	-	-	3	3	3	2	3	2	-
CO-5	-	-	2	2	2	-	-	-	-	-	2	3	-	2	3
Avg	3	-	2.6	2.6	2.4	-	-	-	3	3	2.4	2.4	3	2.2	3

Overall Average between COs & POs = 2.67

Overall Average between COs & PSOs = 2.73

Levels: 1 = L1 – Remembering, 2 = L2 – Understanding, 3 = L3 – Applying, 4 = L4 – Analyzing, 5 = L5 – Evaluating, 6 = L6 – Creating.

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Course code and Name: 1.3 Managerial Economics

	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12	PSO-1	PSO-2	PSO-3
CO-1	2	3	2	-	2	-	-	2	2	3	-	2	2	3	3
CO-2	3	3	2	3	3	-	3	2	3	3	-	2	3	3	3
CO-3	3	3	3	3	3	-	-	3	2	3	-	3	2	3	3
CO-4	3	3	2	3	2	-	-	3	3	2	-	2	3	3	3
CO-5	3	3	3	3	2	-	3	3	3	2	-	2	3	2	3
Avg	2.8	3	2.4	3	2.4	-	3	2.8	2.6	2.6	-	2.2	2.6	2.8	3

Overall Average between COs & POs = 2.68
Overall Average between COs & PSOs = 2.8
Levels: 1 = L1 – Remembering, 2 = L2 – Understanding, 3 = L3 – Applying, 4 = L4 – Analyzing, 5 = L5 – Evaluating, 6 = L6 – Creating.

Course code and Name: 1.4 Environment Management

	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12	PSO-1	PSO-2	PSO-3
CO-1	3	3	2	3	3	3	3	3	2	3	3	2	3	3	2
CO-2	3	2	3	3	3	3	2	2	3	2	2	3	2	3	3
CO-3	3	3	2	3	3	3	3	2	2	3	3	2	3	3	2
CO-4	3	3	3	2	3	2	2	2	2	2	2	2	2	3	3
CO-5	3	3	2	2	-	3	2	2	3	2	3	2	2	3	3
Avg	3	2.8	2.4	2.6	3	2.8	2.4	2.2	2.4	2.4	2.6	2.2	2.4	3	2.6

Overall Average between COs & POs = 2.56
Overall Average between COs & PSOs = 2.67
Levels: 1 = L1 – Remembering, 2 = L2 – Understanding, 3 = L3 – Applying, 4 = L4 – Analyzing, 5 = L5 – Evaluating, 6 = L6 – Creating.

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Course code and Name: 1.5 Managerial Skill Development

	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12	PSO-1	PSO-2	PSO-3
CO-1	3	3	2	3	3	2	3	3	2	2	2	3	3	3	2
CO-2	3	2	3	3	3	3	3	3	2	2	2	3	2	3	2
CO-3	3	3	2	2	3	3	3	2	2	3	3	2	3	3	3
CO-4	3	3	3	3	3	2	3	2	3	3	3	2	3	3	3
CO-5	3	2	2	2	3	2	3	2	2	3	3	3	2	3	3
Avg	3	2.6	2.4	2.6	3	2.4	3	2.4	2.2	2.6	2.6	2.6	2.6	3	2.6

Overall Average between COs & POs = 2.61
Overall Average between COs & PSOs = 2.73
Levels: 1 = L1 – Remembering, 2 = L2 – Understanding, 3 = L3 – Applying, 4 = L4 – Analyzing, 5 = L5 – Evaluating, 6 = L6 – Creatin

Course code and Name: 1.6 Accounting for Managers

	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12	PSO-1	PSO-2	PSO-3
CO-1	3	-	3	2	3	3	3	-	3	2	3	3	3	2	3
CO-2	2	-	3	3	3	2	-	-	3	3	3	2	2	3	-
CO-3	3	-	3	3	2	3	3	-	2	3	3	3	2	-	-
CO-4	3	-	3	3	2	3	3	-	3	3	2	2	3	-	3
CO-5	3	-	3	2	3	2	3	-	2	3	2	2	2	-	3
Avg	2.8	-	3	2.6	2.6	2.6	3	-	2.6	2.8	2.6	2.4	2.4	2.5	3

Overall Average between COs & POs = 2.70
Overall Average between COs & PSOs = 2.63
Levels: 1 = L1 – Remembering, 2 = L2 – Understanding, 3 = L3 – Applying, 4 = L4 – Analyzing, 5 = L5 – Evaluating, 6 = L6 – Creating.

Course code and Name: 1.7 IT for Managers

	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12	PSO-1	PSO-2	PSO-3
CO-1	3	-	3	2	3	3	-	-	-	-	2	3	3	2	3
CO-2	3	-	-	3	3	2	-	-	-	-	3	3	3	3	3
CO-3	3	-	2	2	3	-	-	-	3	-	2	3	-	3	2
CO-4	3	-	3	3	2	3	-	-	3	-	3	2	3	3	2
CO-5	3	-	3	3	3	2	-	-	3	-	3	3	-	2	3
Avg	3	-	2.7	2.6	2.8	2.5	-	-	3	-	2.6	2.8	3	2.6	2.6

Overall Average between COs & POs = 2.75
Overall Average between COs & PSOs = 2.73
Levels: 1 = L1 – Remembering, 2 = L2 – Understanding, 3 = L3 – Applying, 4 = L4 –
Analyzing, 5 = L5 – Evaluating, 6 = L6 – Creating.

2021-2022

I YEAR – MBA – I SEM

COs	MAPPING (Cos & Pos)												MAPPING (Cos &PSos)		
	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12	PSO-1	PSO-2	PSO-3
1.1	3	2.6	3	2.4	2.4	2.4	2.4	3	2.6	2.4	2.6	2.4	2.4	3	2.8
1.2	3	-	2.6	2.6	2.4	-	-	-	3	3	2.4	2.4	3	2.2	3
1.3	2.8	3	2.4	3	2.4	-	3	2.8	2.6	2.6	-	2.2	2.6	2.8	3
1.4	3	2.8	2.4	2.6	3	2.8	2.4	2.2	2.4	2.4	2.6	2.2	2.4	3	2.6
1.5	3	2.6	2.4	2.6	3	2.4	3	2.4	2.2	2.6	2.6	2.6	2.6	3	2.6
1.6	2.8	-	3	2.6	2.6	2.6	3	-	2.6	2.8	2.6	2.4	2.4	2.5	3
1.7	3	-	2.7	2.6	2.8	2.5	-	-	3	-	2.6	2.8	3	2.6	2.6
Avg	2.94	2.75	2.64	2.62	2.65	2.54	2.76	2.6	2.62	2.63	2.56	2.42	2.57	2.72	2.8

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Second Semester

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Semester II

Course code and Name: 2.1 Entrepreneurship Development

	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12	PSO-1	PSO-2	PSO-3
CO-1	3	2	3	3	3	3	2	3	3	2	3	3	3	3	3
CO-2	3	2	3	2	3	3	3	3	2	3	3	3	2	3	3
CO-3	2	3	3	3	2	2	2	3	3	3	3	3	3	3	3
CO-4	2	3	3	3	3	3	3	2	3	3	2	2	2	3	2
CO-5	3	3	3	2	3	2	2	3	2	2	2	2	2	2	2
Avg	2.6	2.6	3	2.6	2.8	2.6	2.4	2.8	2.6	2.6	2.6	2.6	2.4	2.8	2.6

Overall Average between COs & POs = 2.65
Overall Average between COs & PSOs = 2.60
Levels: 1 = L1 – Remembering, 2 = L2 – Understanding, 3 = L3 – Applying, 4 = L4 – Analyzing, 5 = L5 – Evaluating, 6 = L6 – Creating.

Course code and Name: 2.2 Research Methodology & Business Analytics

	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12	PSO-1	PSO-2	PSO-3
CO-1	3	2	3	3	3	3	3	2	2	2	3	3	3	3	2
CO-2	3	2	3	2	3	3	2	2	2	2	3	2	3	3	3
CO-3	3	3	3	3	3	3	3	2	2	2	3	3	3	3	2
CO-4	3	3	3	3	3	3	2	2	2	3	3	2	3	3	2
CO-5	2	3	3	2	3	3	2	2	2	3	3	3	3	2	2
Avg	2.8	2.6	3	2.6	3	3	2.4	2	2	2.4	3	2.6	3	2.8	2.2

Overall Average between COs & POs = 2.61
Overall Average between COs & PSOs = 2.67
Levels: 1 = L1 – Remembering, 2 = L2 – Understanding, 3 = L3 – Applying, 4 = L4 – Analyzing, 5 = L5 – Evaluating, 6 = L6 – Creating.

Course code and Name: 2.3 Organizational Behaviour

	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12	PSO-1	PSO-2	PSO-3
CO-1	3	3	3	2	2	3	3	2	2	2	3	3	3	3	3
CO-2	3	2	3	3	3	3	3	2	3	3	3	2	2	3	3
CO-3	2	3	3	2	3	2	2	3	3	3	3	3	2	3	3
CO-4	2	3	3	3	3	2	3	2	3	2	3	2	3	3	3
CO-5	3	2	3	3	3	2	2	2	2	3	3	2	2	3	2
Avg	2.6	2.6	3	2.6	2.8	2.4	2.6	2.2	2.6	2.6	3	2.4	2.4	3	2.8

Overall Average between COs & POs = 2.61

Overall Average between COs & PSOs = 2.73

Levels: 1 = L1 – Remembering, 2 = L2 – Understanding, 3 = L3 – Applying, 4 = L4 – Analyzing, 5 = L5 – Evaluating, 6 = L6 – Creating.

Course code and Name: 2.4 Human Resource Management

	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12	PSO-1	PSO-2	PSO-3
CO-1	3	3	3	2	3	2	2	2	3	2	2	3	3	3	3
CO-2	3	2	3	2	2	3	3	3	2	3	3	3	2	3	3
CO-3	2	3	3	3	3	3	2	3	3	3	2	3	2	3	3
CO-4	2	3	3	3	2	2	2	3	2	3	2	3	3	3	2
CO-5	2	2	3	3	2	2	3	3	2	3	3	3	2	3	2
Avg	2.4	2.6	3	2.6	2.4	2.4	2.4	2.8	2.4	2.8	2.4	3	2.4	3	2.6

Overall Average between COs & POs = 2.60

Overall Average between COs & PSOs = 2.67

Levels: 1 = L1 – Remembering, 2 = L2 – Understanding, 3 = L3 – Applying, 4 = L4 – Analyzing, 5 = L5 – Evaluating, 6 = L6 – Creating.

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Course code and Name: 2.5 Financial Management

	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12	PSO-1	PSO-2	PSO-3
CO-1	3	-	3	3	3	3	2	3	2	3	3	2	3	3	3
CO-2	3	3	3	2	3	3	3	3	3	2	3	2	3	3	2
CO-3	3	3	2	3	3	2	2	3	2	3	3	2	3	3	3
CO-4	3	2	3	3	2	-	-	-	-	3	3	2	2	3	2
CO-5	3	2	2	3	2	2	2	-	-	2	2	2	2	3	2
Avg	3	2.5	2.6	2.8	2.6	2.5	2.2	3	2.33	2.6	2.8	2	2.6	3	2.4

Overall Average between COs & POs = 2.57
Overall Average between COs & PSOs = 2.67
Levels: 1 = L1 – Remembering, 2 = L2 – Understanding, 3 = L3 – Applying, 4 = L4 –
Analyzing, 5 = L5 – Evaluating, 6 = L6 – Creating.

Course code and Name: 2.6 Marketing Management

	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12	PSO-1	PSO-2	PSO-3
CO-1	3	2	3	3	3	3	3	3	3	3	3	3	3	2	3
CO-2	3	3	3	3	2	2	2	2	3	3	3	3	2	3	3
CO-3	3	2	3	3	3	2	3	2	3	2	3	3	3	3	3
CO-4	3	3	3	3	2	3	2	2	3	2	2	3	3	3	3
CO-5	3	3	2	2	2	3	2	2	2	2	2	2	3	2	2
Avg	3	2.6	2.8	2.8	2.4	2.6	2.4	2.2	2.8	2.4	2.6	2.8	2.8	2.6	2.8

Overall Average between COs & POs = 2.62
Overall Average between COs & PSOs = 2.73
Levels: 1 = L1 – Remembering, 2 = L2 – Understanding, 3 = L3 – Applying, 4 = L4 –
Analyzing, 5 = L5 – Evaluating, 6 = L6 – Creating.

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Course code and Name: 2.7 Production and Operations Management

	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12	PSO-1	PSO-2	PSO-3
CO-1	3	3	3	3	3	-	3	3	3	2	3	2	3	2	3
CO-2	3	3	2	3	2	3	2	3	2	3	2	3	3	3	3
CO-3	2	3	2	3	3	3	2	3	2	3	2	3	3	3	3
CO-4	2	3	2	3	3	3	2	3	3	2	2	3	3	3	3
CO-5	3	2	3	2	3	3	3	2	3	2	2	2	3	2	2
Avg	2.6	2.8	2.4	2.8	2.8	3	2.4	2.8	2.6	2.4	2.2	2.3	3	2.6	2.8

Overall Average between COs & POs = 2.59
Overall Average between COs & PSOs = 2.80
Levels: 1 = L1 – Remembering, 2 = L2 – Understanding, 3 = L3 – Applying, 4 = L4 – Analyzing, 5 = L5 – Evaluating, 6 = L6 – Creating.

2021-2022

I YEAR – MBA – II SEM

COs	MAPPING (Cos & Pos)												MAPPING (Cos &PSos)		
	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12	PSO-1	PSO-2	PSO-3
2.1	2.6	2.6	3	2.6	2.8	2.6	2.4	2.8	2.6	2.6	2.6	2.6	2.4	2.8	2.6
2.2	2.8	2.6	3	2.6	3	3	2.4	2	2	2.4	3	2.6	3	2.8	2.2
2.3	2.6	2.6	3	2.6	2.8	2.4	2.6	2.2	2.6	2.6	3	2.4	2.4	3	2.8
2.4	2.4	2.6	3	2.6	2.4	2.4	2.4	2.8	2.4	2.8	2.4	3	2.4	3	2.6
2.5	3	2.5	2.6	2.8	2.6	2.5	2.2	3	2.33	2.6	2.8	2	2.6	3	2.4
2.6	3	2.6	2.8	2.8	2.4	2.6	2.4	2.2	2.8	2.4	2.6	2.8	2.8	2.6	2.8
2.7	2.6	2.8	2.4	2.8	2.8	3	2.4	2.8	2.6	2.4	2.2	2.3	3	2.6	2.8
Avg	2.71	2.61	2.82	2.68	2.68	2.65	2.4	2.54	2.47	2.54	2.65	2.52	2.65	2.82	2.60

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Third Semester

Semester III

Course code and Name: 3.1 Strategic Management & Business Policy

	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12	PSO-1	PSO-2	PSO-3
CO-1	3	3	-	3	3	3	2	2	2	2	3	3	3	3	3
CO-2	3	2	3	2	3	3	2	3	3	3	-	-	2	3	3
CO-3	3	2	3	3	3	3	2	3	3	3	3	3	3	2	3
CO-4	2	3	-	3	2	3	2	2	3	3	3	2	2	3	3
CO-5	2	3	3	3	2	2	3	2	2	2	3	2	2	2	2
Avg	2.6	2.6	3	2.8	2.6	2.8	2.2	2.4	2.6	2.6	3	2.5	2.4	2.6	2.8

Overall Average between COs & POs = 2.64

Overall Average between COs & PSOs = 2.60

Levels: 1 = L1 – Remembering, 2 = L2 – Understanding, 3 = L3 – Applying, 4 = L4 – Analyzing, 5 = L5 – Evaluating, 6 = L6 – Creating.

Course code and Name: 3.2 DSS & MIS

	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12	PSO-1	PSO-2	PSO-3
CO-1	3	3	2	3	3	2	2	-	-	3	2	3	3	2	2
CO-2	3	3	3	3	3	2	3	-	-	3	3	3	3	2	3
CO-3	3	3	3	3	3	2	3	-	-	3	3	3	3	3	3
CO-4	3	2	3	3	3	3	3	-	3	2	3	2	3	3	3
CO-5	3	2	2	2	3	3	2	3	3	2	3	2	3	3	3
Avg	3	2.6	2.6	2.8	3	2.4	2.6	3	3	2.6	2.8	2.6	3	2.6	2.8

Overall Average between COs & POs = 2.75

Overall Average between COs & PSOs = 2.80

Levels: 1 = L1 – Remembering, 2 = L2 – Understanding, 3 = L3 – Applying, 4 = L4 – Analyzing, 5 = L5 – Evaluating, 6 = L6 – Creating.

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Course code and Name: 3.3 Business Ethics & Corporate Governance

	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12	PSO-1	PSO-2	PSO-3
CO-1	3	2	3	2	2	2	3	2	2	2	3	2	3	2	2
CO-2	3	2	3	2	2	3	3	3	2	2	3	3	2	3	3
CO-3	3	2	3	3	2	3	3	3	2	2	3	3	3	2	3
CO-4	3	2	3	3	3	3	3	3	2	2	3	2	3	2	3
CO-5	3	3	3	3	3	2	2	3	3	3	2	2	2	3	3
Avg	3	2.2	3	2.6	2.4	2.6	2.8	2.8	2.2	2.2	2.8	2.4	2.6	2.4	2.8

Overall Average between COs & POs = 2.58
Overall Average between COs & PSOs = 2.60
Levels: 1 = L1 – Remembering, 2 = L2 – Understanding, 3 = L3 – Applying, 4 = L4 – Analyzing, 5 = L5 – Evaluating, 6 = L6 – Creating.

Course code and Name: 3.4. F. International Financial Management

	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12	PSO-1	PSO-2	PSO-3
CO-1	3	2	3	2	2	3	2	3	2	2	3	2	3	2	3
CO-2	3	3	3	3	3	3	2	3	2	3	3	2	3	3	3
CO-3	3	3	3	3	3	3	2	3	3	3	2	2	3	3	3
CO-4	3	3	3	2	3	2	3	3	2	3	2	2	3	3	3
CO-5	3	2	2	2	2	2	3	2	2	2	2	2	3	2	2
Avg	3	2.6	2.8	2.4	2.6	2.6	2.4	2.8	2.2	2.6	2.4	2	3	2.6	2.8

Overall Average between COs & POs = 2.53
Overall Average between COs & PSOs = 2.8
Levels: 1 = L1 – Remembering, 2 = L2 – Understanding, 3 = L3 – Applying, 4 = L4 – Analyzing, 5 = L5 – Evaluating, 6 = L6 – Creating.

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Course code and Name: 3.4.HR. Management of Industrial Relations

	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12	PSO-1	PSO-2	PSO-3
CO-1	3	3	2	3	2	-	3	2	2	2	3	3	3	3	3
CO-2	3	3	3	3	3	-	2	2	3	3	3	3	2	3	3
CO-3	3	3	3	2	3	-	2	2	3	3	3	2	2	3	3
CO-4	2	3	3	3	2	-	2	2	3	3	3	2	2	3	3
CO-5	3	3	2	2	2	-	2	2	3	2	3	2	2	3	2
Avg	2.8	3	2.6	2.6	2.4	-	2.2	2	2.8	2.6	3	2.4	2.2	3	2.8

Overall Average between COs & POs = 2.58
Overall Average between COs & PSOs = 2.66
Levels: 1 = L1 – Remembering, 2 = L2 – Understanding, 3 = L3 – Applying, 4 = L4 –
Analyzing, 5 = L5 – Evaluating, 6 = L6 – Creating.

Course code and Name: 3.5.F .Security Analysis and Investment Management

	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12	PSO-1	PSO-2	PSO-3
CO-1	3	3	-	2	3	-	-	-	3	-	-	2	3	2	3
CO-2	3	3	-	3	2	-	-	-	3	-	-	3	3	3	3
CO-3	3	3	-	3	3	-	-	-	3	-	-	3	3	3	3
CO-4	3	2	3	3	3	-	-	-	3	-	-	3	3	3	3
CO-5	3	2	3	2	2	-	-	-	2	-	-	2	2	2	2
Avg	3	2.6	3	2.6	2.6	-	-	-	2.8	-	-	2.6	2.8	2.6	2.8

Overall Average between COs & POs = 2.74
Overall Average between COs & PSOs = 2.73
Levels: 1 = L1 – Remembering, 2 = L2 – Understanding, 3 = L3 – Applying, 4 = L4 –
Analyzing, 5 = L5 – Evaluating, 6 = L6 – Creating.

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Course code and Name: 3.5.HR Management Training & Development

	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12	PSO-1	PSO-2	PSO-3
CO-1	3	3	2	2	-	-	3	-	2	-	3	2	3	3	2
CO-2	3	3	2	2	-	-	3	-	3	-	3	3	3	3	3
CO-3	3	3	3	2	-	-	3	-	3	-	3	3	3	3	3
CO-4	3	2	3	2	-	-	3	-	3	-	3	3	2	3	3
CO-5	3	2	2	2	-	-	2	-	2	-	3	2	2	2	2
Avg	3	2.6	2.4	2.6	-	-	2.8	-	2.6	-	3	2.6	2.6	2.8	2.6

Overall Average between COs & POs = 2.70
Overall Average between COs & PSOs = 2.66
**Levels: 1 = L1 – Remembering, 2 = L2 – Understanding, 3 = L3 – Applying, 4 = L4 –
Analyzing, 5 = L5 – Evaluating, 6 = L6 – Creating.**

2022-2023

II YEAR – MBA – III SEM

COs	MAPPING (Cos & Pos)												MAPPING (Cos &PSos)		
	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12	PSO-1	PSO-2	PSO-3
3.1	2.6	2.6	3	2.8	2.6	2.8	2.2	2.4	2.6	2.6	3	2.5	2.4	2.6	2.8
3.2	3	2.6	2.6	2.8	3	2.4	2.6	3	3	2.6	2.8	2.6	3	2.6	2.8
3.3	3	2.2	3	2.6	2.4	2.6	2.8	2.8	2.2	2.2	2.8	2.4	2.6	2.4	2.8
3.4F	3	2.6	2.8	2.4	2.6	2.6	2.4	2.8	2.2	2.6	2.4	2	3	2.6	2.8
3.4H	2.8	3	2.6	2.6	2.4	-	2.2	2	2.8	2.6	3	2.4	2.2	3	2.8
3.5F	3	2.6	3	2.6	2.6	-	-	-	2.8	-	-	2.6	2.8	2.6	2.8
3.5H	3	2.6	2.4	2.6	-	-	2.8	-	2.6	-	3	2.6	2.6	2.8	2.6
Avg	2.91	2.6	2.77	2.62	2.6	2.6	2.5	2.6	2.6	2.52	2.83	2.44	2.65	2.65	2.77

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Fourth Semester

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Semester IV

Course code and Name: 4.1 Business Analytics

	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12	PSO-1	PSO-2	PSO-3
CO-1	3	-	-	2	2	-	3	3	-	-	3	2	2	3	3
CO-2	3	2	-	2	2	2	3	2	-	-	3	3	3	3	3
CO-3	3	3	3	2	3	3	2	3	-	-	2	3	3	3	2
CO-4	3	2	3	2	2	2	3	3	-	-	2	3	3	3	2
CO-5	3	3	3	3	3	3	3	2	-	-	3	2	2	3	3
Avg	3	2.5	3	2.2	2.4	2.5	2.8	2.6	-	-	2.6	2.6	2.6	3	2.6

Overall Average between COs & POs = 2.62
Overall Average between COs & PSOs = 2.73
Levels: 1 = L1 – Remembering, 2 = L2 – Understanding, 3 = L3 – Applying, 4 = L4 – Analyzing, 5 = L5 – Evaluating, 6 = L6 – Creating.

Course code and Name: 4.2 Knowledge Management

	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12	PSO-1	PSO-2	PSO-3
CO-1	3	2	2	3	3	-	2	2	2	3	2	2	3	3	3
CO-2	3	3	2	3	3	2	3	2	3	3	2	2	2	3	3
CO-3	3	2	3	2	2	3	3	3	3	3	3	3	2	2	3
CO-4	3	3	3	2	2	3	3	3	3	2	2	3	3	3	2
CO-5	3	2	3	3	3	2	2	2	3	2	2	3	2	3	3
Avg	3	2.4	2.6	2.6	2.6	2.5	2.6	2.4	2.8	2.6	2.2	2.6	2.4	2.8	2.8

Overall Average between COs & POs = 2.57
Overall Average between COs & PSOs = 2.66
Levels: 1 = L1 – Remembering, 2 = L2 – Understanding, 3 = L3 – Applying, 4 = L4 – Analyzing, 5 = L5 – Evaluating, 6 = L6 – Creating.

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Course code and Name: 4.3 Global Business

	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12	PSO-1	PSO-2	PSO-3
CO-1	3	3	2	3	3	-	3	2	3	2	3	2	3	3	2
CO-2	3	3	3	3	3	-	3	3	3	3	3	2	3	3	3
CO-3	3	3	3	3	3	3	2	3	3	3	3	3	3	2	3
CO-4	2	3	3	2	3	-	-	3	3	2	2	3	3	3	3
CO-5	2	2	2	2	2	3	2	2	3	2	2	2	2	2	3
Avg	2.6	2.8	2.6	2.6	2.8	3	2.5	2.6	3	2.4	2.6	2.4	2.8	2.6	2.8

Overall Average between COs & POs = 2.65
Overall Average between COs & PSOs = 2.73
Levels: 1 = L1 – Remembering, 2 = L2 – Understanding, 3 = L3 – Applying, 4 = L4 – Analyzing, 5 = L5 – Evaluating, 6 = L6 – Creating.

Course code and Name: 4.4.(HR) International Human Resource Management

	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12	PSO-1	PSO-2	PSO-3
CO-1	3	2	2	3	-	3	2	3	3	2	2	2	3	3	2
CO-2	3	2	2	2	-	3	3	2	3	3	2	2	3	3	3
CO-3	3	2	2	2	-	2	2	3	3	3	2	2	2	3	2
CO-4	3	3	2	2	-	3	2	3	2	3	3	3	2	3	3
CO-5	3	2	3	3	-	2	3	2	3	2	3	3	2	3	3
Avg	3	2.2	2.2	2.4	-	2.6	2.4	2.6	2.8	2.6	2.4	2.4	2.4	3	2.6

Overall Average between COs & POs = 2.74
Overall Average between COs & PSOs = 2.67
Levels: 1 = L1 – Remembering, 2 = L2 – Understanding, 3 = L3 – Applying, 4 = L4 – Analyzing, 5 = L5 – Evaluating, 6 = L6 – Creating.

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Course code and Name: 4.5.F. Management of Financial Services

	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12	PSO-1	PSO-2	PSO-3
CO-1	3	2	3	3	3	3	2	2	2	2	2	2	2	3	3
CO-2	3	3	3	3	2	3	3	2	3	2	3	2	2	3	3
CO-3	3	2	3	2	3	3	2	3	2	2	3	3	3	2	3
CO-4	3	3	2	2	3	3	3	2	3	2	3	2	3	2	2
CO-5	2	3	2	3	2	2	2	2	2	3	3	3	3	3	3
Avg	2.8	2.6	2.6	2.6	2.6	2.8	2.4	2.2	2.4	2.2	2.8	2.4	2.6	2.6	2.8

Overall Average between COs & POs = 2.53
Overall Average between COs & PSOs = 2.66
Levels: 1 = L1 – Remembering, 2 = L2 – Understanding, 3 = L3 – Applying, 4 = L4 – Analyzing, 5 = L5 – Evaluating, 6 = L6 – Creating.

Course code and Name: 4.5 (HR) Compensation Management

	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12	PSO-1	PSO-2	PSO-3
CO-1	-	2	-	-	-	2	3	2	2	-	3	3	3	3	2
CO-2	-	3	-	-	-	3	3	2	3	-	3	2	2	3	3
CO-3	3	2	-	-	-	3	3	3	3	-	2	3	3	3	3
CO-4	3	3	-	-	-	3	3	2	3	-	3	3	3	2	3
CO-5	3	2	-	-	-	2	2	2	2	-	2	3	2	3	2
Avg	3	2.4	-	-	-	2.6	2.8	2.2	2.6	-	2.6	2.8	2.6	2.8	2.6

Overall Average between COs & POs = 2.62
Overall Average between COs & PSOs = 2.67
Levels: 1 = L1 – Remembering, 2 = L2 – Understanding, 3 = L3 – Applying, 4 = L4 – Analyzing, 5 = L5 – Evaluating, 6 = L6 – Creating.

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Course code and Name: 4.6.F. Corporate Taxation

	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12	PSO-1	PSO-2	PSO-3
CO-1	3	2	3	3	2	-	-	-	3	-	-	2	3	3	2
CO-2	-	3	3	3	3	-	-	-	3	-	-	3	2	3	2
CO-3	3	2	3	2	3	-	-	-	3	-	-	3	3	3	3
CO-4	3	2	3	3	2	-	-	-	2	-	-	2	2	2	3
CO-5	3	3	2	2	3	-	-	-	2	-	-	2	3	3	2
Avg	3	2.4	2.8	2.6	2.6	-	-	-	2.6	-	-	2.4	2.6	2.8	2.4

Overall Average between COs & POs = 2.62
Overall Average between COs & PSOs = 2.60
Levels: 1 = L1 – Remembering, 2 = L2 – Understanding, 3 = L3 – Applying, 4 = L4 – Analyzing, 5 = L5 – Evaluating, 6 = L6 – Creating.

Course code and Name: 4.6 (HR) HRD Strategy & Systems

	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12	PSO-1	PSO-2	PSO-3
CO-1	2	3	3	2	3	-	3	2	3	3	2	3	3	3	2
CO-2	3	3	3	3	3	-	2	3	3	3	3	3	3	3	3
CO-3	3	3	3	3	2	-	2	3	3	3	3	2	3	3	3
CO-4	3	3	2	3	2	-	2	3	2	3	3	2	2	3	3
CO-5	2	3	2	3	2	-	2	2	2	2	2	2	2	3	2
Avg	2.6	3	2.6	2.8	2.4	-	2.2	2.6	2.6	2.8	2.6	2.4	2.6	3	2.6

Overall Average between COs & POs = 2.60
Overall Average between COs & PSOs = 2.73
Levels: 1 = L1 – Remembering, 2 = L2 – Understanding, 3 = L3 – Applying, 4 = L4 – Analyzing, 5 = L5 – Evaluating, 6 = L6 – Creating.

2022-2023

II YEAR – MBA – IV SEM

COs	MAPPING (Cos & Pos)												MAPPING (Cos &PSos)		
	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12	PSO-1	PSO-2	PSO-3
4.1	3	2.5	3	2.2	2.4	2.5	2.8	2.6	-	-	2.6	2.6	2.6	3	2.6
4.2	3	2.4	2.6	2.6	2.6	2.5	2.6	2.4	2.8	2.6	2.2	2.6	2.4	2.8	2.8
4.3	2.6	2.8	2.6	2.6	2.8	3	2.5	2.6	3	2.4	2.6	2.4	2.8	2.6	2.8
4.4H	3	2.2	2.2	2.4	-	2.6	2.4	2.6	2.8	2.6	2.4	2.4	2.4	3	2.6
4.5F	2.8	2.6	2.6	2.6	2.6	2.8	2.4	2.2	2.4	2.2	2.8	2.4	2.6	2.6	2.8
4.5H	3	2.4	-	-	-	2.6	2.8	2.2	2.6	-	2.6	2.8	2.6	2.8	2.6
4.6F	3	2.4	2.8	2.6	2.6	-	-	-	2.6	-	-	2.4	2.6	2.8	2.4
4.6H	2.6	3	2.6	2.8	2.4	-	2.2	2.6	2.6	2.8	2.6	2.4	2.6	3	2.6
Avg	2.87	2.53	2.62	2.54	2.57	2.66	2.52	2.45	2.68	2.52	2.54	2.5	2.57	2.82	2.65

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