INDEX

SESSION 2022-2023

(1.3.2)

S.NO	SYLLABUS/CURRICULUM OF THE PROGRAMS PRESCRIBED BY THE AFFILIATING UNIVERSITY FOR ALL THE PROGRAMS OFFERED HIGHLIGHTING THE RELEVANT PARTS WHICH INSTRUCT STUDENTS OF DIFFERENT SEMESTERS TO UNDERTAKE A/AN PROJECT/INTERNSHIP/FIELDWORK	COURSE CODE (if any)
1	SYLLABUS	CS & ALLIED BRANCHES
2	SYLLABUS	ECE
3	SYLLABUS	CIVIL
4	SYLLABUS	ME
5	SYLLABUS	MBA
6	SYLLABUS	MCA
7	SYLLABUS	M.TECH

Director
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Duhai, Ghaziabad

B.TECH
(CSAI/CSML/CSDS/CSIOT)
COMPUTER SCIENCE AND ENGINEERING)
SEMESTER- III

Sl. No.	Subject Codes	Subject	Periods			Evaluation Scheme				End Semester		Total	Credit
			L	T	P	CT	TA	Total	PS	TE	PE		
1	KOE031-38/ KAS302	Engineering Science Course/Maths IV	3	1	0	30	20	50		100		150	4
2	KAS301/ KVE 301	Technical Communication/Universal Human values	2	1	0	30	20	50		100		150	3
			3	0	0								
3	KCS301	Data Structure	3	1	0	30	20	50		100		150	4
4	KCS302	Computer Organization and Architecture	3	1	0	30	20	50		100		150	4
5	KCS303	Discrete Structures & Theory of Logic	3	0	0	30	20	50		100		150	3
6	KCS351	Data Structures Using C Lab	0	0	2				25		25	50	1
7	KCS352	Computer Organization Lab	0	0	2				25		25	50	1
8	KCS353	Discrete Structure & Logic Lab	0	0	2				25		25	50	1
9	KCS354	Mini Project or Internship Assessment*	0	0	2			50				50	1
10	KNC301/ KNC302	Computer System Security/Python Programming	2	0	0	15	10	25		50			0
11		MOOCs (Essential for Hons. Degree)											
		Total										**950**	**22**

*The Mini Project or internship (3-4 weeks) conducted during summer break after II semester and will be assessed during III semester.

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SEMESTER- IV													
Sl. No.	Subject Codes	Subject	Periods			Evaluation Scheme				End Semester		Total	Credit
			L	T	P	CT	TA	Total	PS	TE	PE		
1	KAS402/ KOE041-48	Maths IV/Engg. Science Course	3	1	0	30	20	50		100		150	4
2	KVE401/ KAS301	Universal Human Values/ Technical Communication	3 2	0 1	0 0	30	20	50		100		150	3
3	KCS401	Operating Systems	3	0	0	30	20	50		100		150	3
4	KCS402	Theory of Automata and Formal Languages	3	1	0	30	20	50		100		150	4
5	KCS403	Microprocessor	3	1	0	30	20	50		100		150	4
6	KCS451	Operating Systems Lab	0	0	2				25		25	50	1
7	KCS452	Microprocessor Lab	0	0	2				25		25	50	1
8	KCS453	Python Language Programming Lab	0	0	2				25		25	50	1
9	KNC402/ KNC401	Python Programming/Computer System Security	2	0	0	15	10	25		50			0
10		MOOCs (Essential for Hons. Degree)											
		Total										**900**	**21**

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B.TECH (COMPUTER SCIENCE AND ENGINEERING)

Information Technology

SEMESTER- III

Sl. No.	Subject Codes	Subject	Periods			Evaluation Scheme				End Semester		Total	Credit
			L	T	P	CT	TA	Total	PS	TE	PE		
1	KOE031-38/ KAS302	Engineering Science Course/Maths-IV	3	1	0	30	20	50		100		150	4
2	KAS301/ KVE301	Technical Communication/Universal Human Values	2	1	0	30	20	50		100		150	3
			3	0	0								
3	KCS301	Data Structure	3	1	0	30	20	50		100		150	4
4	KCS302	Computer Organization and Architecture	3	1	0	30	20	50		100		150	4
5	KCS303	Discrete Structures & Theory of Logic	3	0	0	30	20	50		100		150	3
6	KCS351	Data Structures Using C Lab	0	0	2				25		25	50	1
7	KCS352	Computer Organization Lab	0	0	2				25		25	50	1
8	KCS353	Discrete Structure & Logic Lab	0	0	2				25		25	50	1
9	KCS354	Mini Project or Internship Assessment*	0	0	2			50				50	1
10	KNC301/ KNC302	Computer System Security/Python Programming	2	0	0	15	10	25		50			0
11		MOOCs (Essential for Hons. Degree)											
		Total										**950**	**22**

*The Mini Project or internship (3-4 weeks) conducted during summer break after II semester and will be assessed during III semester.

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SEMESTER- IV													
Sl. No.	Subject Codes	Subject	Periods			Evaluation Scheme				End Semester		Total	Credit
			L	T	P	CT	TA	Total	PS	TE	PE		
1	KAS402/ KOE041-48	Maths IV/Engg. Science Course	3	1	0	30	20	50		100		150	4
2	KVE401/ KAS401	Universal Human Values/Technical Communication	3	0	0	30	20	50		100		150	3
			2	1	0								
3	KCS401	Operating Systems	3	0	0	30	20	50		100		150	3
4	KCS402	Theory of Automata and Formal Languages	3	1	0	30	20	50		100		150	4
5	KIT401	Web Designing	3	1	0	30	20	50		100		150	4
6	KCS451	Operating Systems Lab	0	0	2				25		25	50	1
7	KIT451	Web Designing Lab	0	0	2				25		25	50	1
8	KCS453	Python Language Programming Lab	0	0	2				25		25	50	1
9	KNC402/ KNC401	Python Programming/ Computer System Security	2	0	0	15	10	25		50			0
10		MOOCs (Essential for Hons. Degree)											
		Total										**900**	**21**

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B.TECH (COMPUTER SCIENCE & ENGINEERING/ COMPUTER SCIENCE)
CURRICULUM STRUCTURE

SEMESTER- V

Sl. No.	Subject Codes	Subject	Periods			Evaluation Scheme				End Semester		Total	Credit
			L	T	P	CT	TA	Total	PS	TE	PE		
1	KCS501	Database Management System	3	1	0	30	20	50		100		150	4
2	KCS502	Compiler Design	3	1	0	30	20	50		100		150	4
3	KCS503	Design and Analysis of Algorithm	3	1	0	30	20	50		100		150	4
4	Deptt. Elective-I	Departmental Elective-I	3	0	0	30	20	50		100		150	3
5	Deptt. Elective-II	Departmental Elective-II	3	0	0	30	20	50		100		150	3
6	KCS551	Database Management System Lab	0	0	2				25		25	50	1
7	KCS552	Compiler Design Lab	0	0	2				25		25	50	1
8	KCS553	Design and Analysis of Algorithm Lab	0	0	2				25		25	50	1
9	KCS554	Mini Project or Internship Assessment*	0	0	2				50			50	1
10	KNC501/ KNC502	Constitution of India, Law and Engineering / Indian Tradition, Culture and Society	2	0	0	15	10	25		50			
11		MOOCs (Essential for Hons. Degree)											
		Total	**17**	**3**	**8**							**950**	**22**

*The Mini Project or internship (4 weeks) conducted during summer break after IV semester and will be assessed during V semester.

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SEMESTER- VI													
Sl. No.	Subject Codes	Subject	Periods			Evaluation Scheme				End Semester		Total	Credit
			L	T	P	CT	TA	Total	PS	TE	PE		
1	KCS601	Software Engineering	3	1	0	30	20	50		100		150	4
2	KCS602	Web Technology	3	1	0	30	20	50		100		150	4
3	KCS603	Computer Networks	3	1	0	30	20	50		100		150	4
4	Deptt. Elective-III	Departmental Elective-III	3	0	0	30	20	50		100		150	3
5		Open Elective-I [Annexure - B(iv)]	3	0	0	30	20	50		100		150	3
6	KCS651	Software Engineering Lab	0	0	2				25		25	50	1
7	KCS652	Web Technology Lab	0	0	2				25		25	50	1
8	KCS653	Computer Networks Lab	0	0	2				25		25	50	1
9	KNC601/ KNC602	Constitution of India, Law and Engineering / Indian Tradition, Culture and Society	2	0	0	15	10	25		50			
10		MOOCs (Essential for Hons. Degree)											
		Total	**0**	**3**	**6**							**900**	**21**

Departmental Elective-I

1. KCS-051 Data Analytics
2. KCS-052 Web Designing
3. KCS-053 Computer Graphics
4. KCS-054 Object Oriented System Design

Departmental Elective-II

1. KCS-055 Machine Learning Techniques
2. KCS-056 Application of Soft Computing
3. KCS-057 Augmented & Virtual Reality
4. KCS-058 Human Computer Interface

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Departmental Elective-III

1. KCS-061 Big Data
2. KCS-062 Image Processing
3. KCS-063 Real Time Systems
4. KCS-064 Data Compression

B.TECH (INFORMATION TECHNOLOGY AND CSI) CURRICULUM STRUCTURE

SEMESTER- V													
Sl. No.	Subject Codes	Subject	Periods			Evaluation Scheme				End Semester		Total	Credit
			L	T	P	CT	TA	Total	PS	TE	PE		
1	KCS501	Database Management System	3	1	0	30	20	50		100		150	4
2	KIT501	Web Technology	3	1	0	30	20	50		100		150	4
3	KCS503	Design and Analysis of Algorithm	3	1	0	30	20	50		100		150	4
4	Deptt-Elective-I	Departmental Elective-I	3	0	0	30	20	50		100		150	3
5	Deptt.-Elective-II	Departmental Elective-II	3	0	0	30	20	50		100		150	3
6	KCS551	Database Management System Lab	0	0	2				25		25	50	1
7	KIT551	Web Technology Lab	0	0	2				25		25	50	1
8	KCS553	Design and Analysis of Algorithm Lab	0	0	2				25		25	50	1
9	KCS554	Mini Project or Internship Assessment*	0	0	2				50			50	1
10	KNC501/ KNC502	Constitution of India, Law and Engineering / Indian Tradition, Culture and Society	2	0	0	15	10	25		50			
11		MOOCs (Essential for Hons. Degree)											
		Total	**17**	**3**	**8**							**950**	**22**

*The Mini Project or internship (4 weeks) conducted during summer break after IV semester and will be assessed during V semester.

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SEMESTER- VI													
Sl. No.	Subject Codes	Subject	Periods			Evaluation Scheme				End Semester		Total	Credit
			L	T	P	CT	TA	Total	PS	TE	PE		
1	KCS601	Software Engineering	3	1	0	30	20	50		100		150	4
2	KIT601	Data Analytics	3	1	0	30	20	50		100		150	4
3	KCS603	Computer Networks	3	1	0	30	20	50		100		150	4
4	Deptt-Elective-III	Departmental Elective-III	3	0	0	30	20	50		100		150	3
5		Open Elective-I	3	0	0	30	20	50		100		150	3
6	KCS651	Software Engineering Lab	0	0	2				25		25	50	1
7	KIT651	Data Analytics Lab	0	0	2				25		25	50	1
8	KCS653	Computer Networks Lab	0	0	2				25		25	50	1
9	KNC601/ KNC602	Constitution of India, Law and Engineering / Indian Tradition, Culture and Society	2	0	0	15	10	25		50			
10		MOOCs (Essential for Hons. Degree)											
		Total	**0**	**3**	**6**							**900**	**21**

Departmental Elective-I

1. KIT-051 Statistical Computing
2. KIT-052 Compiler Design
3. KCS-053 Computer Graphics
4. KCS-054 Object Oriented System Design

Departmental Elective-II

5. KCS-055 Machine Learning Techniques
6. KCS-056 Application of Soft Computing
7. KCS-057 Augmented & Virtual Reality
8. KCS-058 Human Computer Interface

Departmental Elective-III

1. KCS-061 Big Data
2. KCS-062 Image Processing
3. KIT -061 Blockchain Architecture Design
4. KCS-064 Data Compression

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COMPUTER SCIENCE AND ENGINEERING/CS

B.TECH

(COMPUTER SCIENCE & ENGINEERING/CS) CURRICULUM STRUCTURE

SEMESTER- VII

Sl. No.	Subject Codes	Subject	Periods			Evaluation Scheme				End Semester		Total	Credit
			L	T	P	CT	TA	Total	PS	TE	PE		
1	KHU701/KHU702	HSMC -1 / HSMC-2	3	0	0	30	20	50		100		150	3
2	KCS07X	Departmental Elective-IV	3	0	0	30	20	50		100		150	3
3	KCS07X	Departmental Elective-V	3	0	0	30	20	50		100		150	3
4	KOE07X	Open Elective-II	3	0	0	30	20	50		100		150	3
5	KCS751A	The Department may conduct one Lab of either of the two Electives (4 or 5) based on the elective chosen for the curriculum. The Department shall on its own prepare complete list of practical for the Lab and arrange for proper setup and conduct accordingly.	0	0	2				25		25	50	1
6	KCS752	Mini Project or Internship Assessment*	0	0	2				50			50	1
7	KCS753	Project	0	0	8				150			150	4
8		MOOCs (Essential for Hons. Degree)											
		Total	**12**	**0**	**12**							**850**	**18**

*The Mini Project or internship (4 - 6 weeks) conducted during summer break after VI semester and will be assessed during VII semester.

SEMESTER- VIII

Sl. No.	Subject Codes	Subject	Periods			Evaluation Scheme				End Semester		Total	Credit
			L	T	P	CT	TA	Total	PS	TE	PE		
1	KHU801/KHU802	HSMC-1#/HSMC-2#	3	0	0	30	20	50		100		150	3
2	KOE08X	Open Elective-III	3	0	0	30	20	50		100		150	3
3	KOE08X	Open Elective-IV	3	0	0	30	20	50		100		150	3
4	KCS851	Project 1	0	0	18				100		300	400	9
5		MOOCs (Essential for Hons. Degree)											
		Total	**9**	**0**	**18**							**850**	**18**

INFORMATION TECHNOLOGY /CSIT

B.TECH IV YEAR

(INFORMATION TECHNOLOGY /CSIT) CURRICULUM STRUCTURE

SEMESTER- VII

Sl. No.	Subject Codes	Subject	Periods			Evaluation Scheme				End Semester		Total	Credit
			L	T	P	CT	TA	Total	PS	TE	PE		
1	KHU701/KHU702	HSMC -1 / HSMC-2	3	0	0	30	20	50		100		150	3
2	KCS07X	Departmental Elective-IV	3	0	0	30	20	50		100		150	3
3	KCS07X	Departmental Elective-V	3	0	0	30	20	50		100		150	3
4	KOE07X	Open Elective-II	3	0	0	30	20	50		100		150	3
5	KIT751A	The Department may conduct one Lab of either of the two Electives (4 or 5) based on the elective chosen for the curriculum. The Department shall on its own prepare complete list of practical for the Lab and arrange for proper setup and conduct accordingly.	0	0	2				25		25	50	1
6	KIT752	Mini Project or Internship Assessment*	0	0	2				50			50	1
7	KIT753	Project 1	0	0	8				150			150	4
8		MOOCs (Essential for Hons. Degree)											
		Total	**12**	**0**	**12**							**850**	**18**

*The Mini Project or internship (4 - 6 weeks) conducted during summer break after VI semester and will be assessed during VII semester.

SEMESTER- VIII

Sl. No.	Subject Codes	Subject	Periods			Evaluation Scheme				End Semester		Total	Credit
			L	T	P	CT	TA	Total	PS	TE	PE		
1	KHU801/KHU802	HSMC-2#/HSMC-1#	3	0	0	30	20	50		100		150	3
2	KOE08X	Open Elective-III	3	0	0	30	20	50		100		150	3
3	KOE08X	Open Elective-IV	3	0	0	30	20	50		100		150	3
4	KIT851	Project	0	0	18				100		300	400	9
5		MOOCs (Essential for Hons. Degree)											
		Total	**9**	**0**	**18**							**850**	**18**

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B.Tech. (Electronics & Communication Engg.) Semester III

Sr. No.	Course Code	Course Title	Periods			Evaluation Scheme				End Semester		Total	Credits
			L	T	P	CT	TA	Total	PS	TE	PE		
	KOE031-38/ KAS302	Engg. Science Course /Maths IV	3	1	0	30	20	50		100		150	4
1.	KAS301/ KVE301	Technical Communication /Universal Human values	2	1	0	30	20	50		100		150	3
			3	0	0								
2.	KEC301	Electronic Devices	3	1	0	30	20	50		100		150	4
3.	KEC302	Digital System Design	3	1	0	30	20	50		100		150	4
4.	KEC303	Network Analysis and Synthesis	3	0	0	30	20	50		100		150	3
6.	KEC351	Electronics Devices Lab	0	0	2				25		25	50	1
7.	KEC352	Digital System Design Lab	0	0	2				25		25	50	1
8.	KEC353	Network Analysis and Synthesis lab	0	0	2				25		25	50	1
9.	KEC354	Mini Project or Internship Assessment	0	0	2			50				50	1
10.	KNC301 /KNC302	Computer System Security /Python Programming	2	0	0	15	10	25		50			0
11.		MOOCs (Essential for Hons. Degree)											
		TOTAL										**950**	**22**

*The Mini Project or internship (3-4 weeks) conducted during summer break after II semester and will be assessed during III semester.

Semester IV

Sr. No.	Course Code	Course Title	Periods			Evaluation Scheme				End Semester		Total	Credits
			L	T	P	CT	TA	Total	PS	TE	PE		
1.	KAS402/ KOE041-48	Maths-IV / Engg. Science Course	3	1	0	30	20	50		100		150	4
2.	KVE401/ KAS401	Universal Human Values/ Technical Communication	3	0	0	30	20	50		100		150	3
			2	1	0								
3.	KEC401	Communication Engineering	3	0	0	30	20	50		100		150	3
4.	KEC402	Analog Circuits	3	1	0	30	20	50		100		150	4
5.	KEC403	Signal System	3	1	0	30	20	50		100		150	4
6.	KEC451	Communication Engineering Lab	0	0	2				25		25	50	1
7.	KEC452	Analog Circuits Lab	0	0	2				25		25	50	1
8.	KEC453	Signal System Lab	0	0	2				25		25	50	1
9.	KNC402/ KNC401	Python Programming/ Computer System Security	2	0	0	15	10	25		50			0
10.		MOOCs (Essential for Hons. Degree)											
		TOTAL										**900**	**21**

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B.Tech. VII Semester

Electronics and Communication Engineering

S. No.	Course Code	Course Title	Periods			Evaluation Scheme				End Semester		Total	Credits
			L	T	P	CT	TA	Total	PS	TE	PE		
1.	KHU701/KHU702	HSMC -1 #/HSMC-2 #	3	0	0	30	20	50		100		150	3
2.	KEC-071-074	Department Elective –IV	3	0	0	30	20	50		100		150	3
3.	KEC-075-076	Department Elective –V	3	0	0	30	20	50		100		150	3
4.		Open Elective-II	3	0	0	30	20	50		100		150	3
5.	KEC-751X	Lab for Department Elective -	0	0	2				25		25	50	1
6.	KEC-752	Mini Project or Internship Assessment**	0	0	2				50			50	1
7.	KEC-753	Project I	0	0	8				150			150	4
		MOOCs (Essential for Hons. Degree)											
		Total										**850**	**18**

Course Code	Course Title
	Department Elective-IV
KEC-071	Digital Image Processing
KEC-072	VLSI Design
KEC-073	Optical Network
KEC-074	Microwave & Radar Engineering
	Department Elective-V
KEC-075	Information Theory & Coding
KEC-076	Wireless & Mobile Communication
KEC-077	Micro & Smart Systems
KEC-078	Speech Processing

Course Code	***Elective Lab
KEC751A	Digital Image Processing Lab
KEC751B	VLSI Design Lab
KEC751C	Optical System and Networking Lab
KEC751D	Microwave & Radar Engineering Lab

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***Students will opt one subject from the list of Department Elective-IV with its corresponding lab. i.e. if someone has opted Digital Image Processing (KEC071) from Department Elective-IV then it will be mandatory to opt the DIP Lab (KEC751A).

B.Tech. VIII Semester

Electronics and Communication Engineering

S. No.	Course Code	Course Title	Periods			Evaluation Scheme				End Semeste		Total	Credits
			L	T	P	CT	TA	Total	PS	TE	PE		
1.	KHU801/KHU802	HSMC -1 #/HSMC-2 #	3	0	0	30	20	50		100		150	3
2.		Open Elective –III	3	0	0	30	20	50		100		150	3
3.		Open Elective –IV	3	0	0	30	20	50		100		150	3
4.	KEC-851	Project II	0	0	18				100		300	400	9
		MOOCs (Essential for Hons.											
		Total										**850**	**18**

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B.Tech. V Semester

Electronics and Communication Engineering

S. No.	Course Code	Course Title	Periods			Evaluation Scheme				End Semester		Total	Credits
			L	T	P	CT	TA	Total	PS	TE	PE		
1	KEC-501	Integrated Circuits	3	1	0	30	20	50		100		150	4
2	KEC-502	Microprocessor & Microcontroller	3	1	0	30	20	50		100		150	4
3	KEC-503	Digital Signal Processing	3	1	0	30	20	50		100		150	4
4	KEC-051–054	Department Elective-I	3	0	0	30	20	50		100		150	3
5	KEC-055-058	Department Elective-II	3	0	0	30	20	50		100		150	3
6	KEC-551	Integrated Circuits Lab	0	0	2				25		25	50	1
7	KEC-552	Microprocessor & Microcontroller Lab	0	0	2				25		25	50	1
8	KEC-553	Digital Signal Processing Lab	0	0	2				25		25	50	1
9	KEC-554	Mini Project/Internship **	0	0	2				50			50	1
10	KNC501/KNC502	Constitution of India, Law and Engineering / Indian Tradition, Culture and Society	2	0	0	15	10	25		50			NC
11		MOOCs (Essential for Hons. Degree)											
		Total										**950**	**22**

**The Mini Project or Internship (4weeks) conducted during summer break after IV Semester and will be assessed during Vth Semester.

Course Code	Course Title
	Department Elective-I
KEC-051	Computer Architecture and Organization
KEC-052	Industrial Electronics
KEC-053	VLSI Technology
KEC-054	Advance Digital Design using Verilog
	Department Elective-II
KEC-055	Electronics Switching
KEC-056	Advance Semiconductor Device
KEC-057	Electronics Measurement & Instrumentation
KEC-058	Optical Communication

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B.Tech. VI Semester
Electronics and Communication Engineering

S. No.	Course Code	Course Title	Periods			Evaluation Scheme				End Semester		Total	Credits
			L	T	P	CT	TA	Total	PS	TE	PE		
1	KEC-601	Digital Communication	3	1	0	30	20	50		100		150	4
2	KEC-602	Control System	3	1	0	30	20	50		100		150	4
3	KEC-603	Antenna and Wave Propagation	3	1	0	30	20	50		100		150	4
4		Department Elective–III	3	0	0	30	20	50		100		150	3
5		Open Elective-I	3	0	0	30	20	50		100		150	3
6	KEC-651	Digital Communication Lab	0	0	2				25		25	50	1
7	KEC-652	Control System Lab	0	0	2				25		25	50	1
8	KEC-653	Elective Lab	0	0	2				25		25	50	1
9	KNC601/ KNC602	Constitution of India, Law and Engineering / Indian Tradition, Culture and Society	2	0	0	15	10	25		50			NC
10		MOOCs (Essential for Hons. Degree)											
		Total										**900**	**21**

Course Code	Course Title
	Department Elective-III
KEC-061	Microcontroller & Embedded System Design
KEC-062	Satellite Communication
KEC-063	Data Communication Networks
KEC-064	Analog Signal Processing
KEC-065	Random Variables & Stochastic Process

Course Code	Elective Lab
KEC-653A	Measurement & Instrumentation Lab
KEC-653B	Cad for Electronics Lab
KEC-653C	Microcontroller & Embedded System Design Lab

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DR. A.P.J ABDUL KALAM TECHNICAL UNIVERSITY, LUCKNOW

EVALUATION SCHEME & SYLLABUS

FOR

B. TECH. SECOND YEAR

(CIVIL ENGINEERING)

(Effective from session 2019-20)

Director
R.D. Engineering College
Duhai, Ghaziabad

THIRD SEMESTER **CIVIL ENGINEERING** **SESSION 2019-20**

S No.	Subject Codes	Subject	Periods			Evaluation Scheme				End Semester		Total	Credit
			L	T	P	CT	TA	Total	PS	TE	PE		
1	KOE031-38/KAS303	Engineering Science Course/Maths III	3	1	0	30	20	50		100		150	4
2	KAS301/ KVE301	Technical Communication/ Universal Human Values	2	1	0	30	20	50		100		150	3
			3	0	0								
3	KCE301	Engg. Mechanics	3	1	0	30	20	50		100		150	4
4	KCE302	Surveying and Geomatics	3	1	0	30	20	50		100		150	4
5	KCE303	Fluid Mechanics	3	0	0	30	20	50		100		150	3
6	KCE351	Building Planning & Drawing Lab	0	0	2				25		25	50	1
7	KCE352	Surveying and Geomatics Lab	0	0	2				25		25	50	1
8	KCE353	Fluid Mechanics Lab	0	0	2				25		25	50	1
9	KCE354	Mini Project or Internship Assessment*	0	0	2			50				50	1
10	KNC301/ KNC302	Computer System Security/ Python Programming	2	0	2	15	10	25		50			0
11		MOOCs (Essential for Hons. Degree)											
		Total										950	22

*The Mini Project or Internship (3-4 weeks) conducted during summer break after II semester and will be assessed during III semester.

SEMESTER - IV

S No.	Subject Codes	Subject	Periods			Evaluation Scheme				End Semester		Total	Credit
			L	T	P	CT	TA	Total	PS	TE	PE		
1	KAS403/ KOE041-48	Maths III/ Engg. Science Course	3	1	0	30	20	50		100		150	4
2	KVE401/ KAS401	Universal Human Values/Technical Communication	3	0	0	30	20	50		100		150	3
			2	1	0								
3	KCE401	Materials, Testing & Construction Practices	3	0	0	30	20	50		100		150	3
4	KCE402	Introduction to Solid Mechanics	3	1	0	30	20	50		100		150	4
5	KCE403	Hydraulic Engineering and Machines	3	1	0	30	20	50		100		150	4
6	KCE451	Material Testing Lab	0	0	2				25		25	50	1
7	KCE452	Solid Mechanics Lab	0	0	2				25		25	50	1
8	KCE453	Hydraulics & Hydraulic Machine Lab	0	0	2				25		25	50	1
9	KNC402/ KNC401	Python Programming/Computer System Security	2	0	0	15	10	25		50			0
10		MOOCs (Essential for Hons. Degree)											
		Total										900	21

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ENGINEERING MECHANICS **(L-T-P 3-1-0)** **Credit – 4**

Course Outcomes: At the end of this course the student will be able to-

1. Use scalar and vector analytical techniques for analyzing forces in statically determinate structures
2. Apply fundamental concepts of kinematics and kinetics of particles to the analysis of simple, practical problems.
3. Apply basic knowledge of mathematics and physics to solve real-world problems.
4. Understand basic dynamics concepts – force, momentum, work and energy;
5. Understand and be able to apply Newton's laws of motion;

UNIT - I Introduction to Engineering Mechanics: Force Systems, Basic concepts, Rigid Body equilibrium; System of Forces, Coplanar Concurrent Forces, Components in Space – Resultant-Moment of Forces and its Applications; Couples and Resultant of Force System, Equilibrium of System of Forces, Free body diagrams, Equations of Equilibrium of Coplanar Systems.

Friction: Types of friction, Limiting friction, Laws of Friction, Static and Dynamic Friction; Motion of Bodies, wedge friction, screw jack & differential screw jack; [8 Hours]

UNIT- II Centroid and Centre of Gravity, Centroid of simple figures from first principle, centroid of composite sections; Centre of Gravity and its implications; Area moment of inertia-Definition, Moment of inertia of plane sections from first principles, Theorems of moment of inertia, Moment of inertia of standard sections and composite sections; Mass moment inertia of circular plate, Cylinder, Cone, Sphere, Hook. [8 Hours]

UNIT - III Basic Structural Analysis, Equilibrium in three dimensions; Analysis of simple trusses by method of sections & method of joints, Zero force members, Simple beams and support reactions. [8 Hours]

UNIT - IV Review of particle dynamics- Rectilinear motion; Plane curvilinear motion (rectangular, path, and polar coordinates). Work-kinetic energy, power, potential energy. Impulse-momentum (linear, angular); Impact (Direct and oblique). [8 Hours]

UNIT - V Introduction to Kinetics of Rigid Bodies, Basic terms, general principles in dynamics; Types of motion, Instantaneous centre of rotation in plane motion and simple problems; D'Alembert's principle and its applications in plane motion and connected bodies; Work energy principle and its application in plane motion of connected bodies; Kinetics of rigid body rotation

Virtual Work and Energy Method- Virtual displacements, principle of virtual work for particle and ideal system of rigid bodies, Applications of energy method for equilibrium, Stability of equilibrium. [8 Hours]

Books and References

1. Irving H. Shames (2006), Engineering Mechanics, 4th Edition, Prentice Hall

Director
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DR. A.P.J ABDUL KALAM TECHNICAL UNIVERSITY, LUCKNOW

EVALUATION SCHEME & SYLLABUS

FOR

B. TECH. THIRD YEAR

(CIVIL ENGINEERING)

(Effective from session 2020-21)

Director
R.D. Engineering College
Dasnai, Ghaziabad

FIFTH SEMESTER CIVIL ENGINEERING SESSION 2020-21

S.No	Subject Code	Subject	Periods			Evaluation Scheme				End Semester		Total	Credit
			L	T	P	CT	TA	Total	PS	TE	PE		
1	KCE 501	Geotechnical Engineering	3	1	0	30	20	50		100		150	4
2	KCE 502	Structural Analysis	3	1	0	30	20	50		100		150	4
3	KCE 503	Quantity Estimation and Construction Management	3	1	0	30	20	50		100		150	4
4		Departmental Elective-I	3	0	0	30	20	50		100		150	3
	KCE 051	Concrete Technology											
	KCE 052	Modern Construction Materials											
	KCE 053	Open Channel Flow											
	KCE 054	Engineering Geology											
5		Departmental Elective-II	3	0	0	30	20	50		100		150	3
	KCE-055	Engineering Hydrology											
	KCE-056	Sensor and Instrumentation Technologies for Civil Engineering Applications											
	KCE-057	Air and Noise Pollution Control											
	KCE-058	GIS and Advance Remote Sensing											
6	KCE-551	CAD Lab	0	0	2				25		25	50	1
7	KCE-552	Geotechnical Engineering Lab	0	0	2				25		25	50	1
8	KCE-553	Quantity Estimation and Management Lab	0	0	2				25		25	50	1
9	KCE-554	Mini Project or Internship Assessment*	0	0	2				50			50	1
10		Constitution of India/Essence of Indian Traditional Knowledge	2	0	0								
11		MOOCs (Essential for Hons. Degree)											
		Total	17	3	8							950	22

* The Mini Project or Internship (4 weeks) conducted during semester break after IV semester and will be assessed during V semester.

NOTE:

1. Regular classroom interaction with industry experts is to be ensured in all theory courses (minimum two expert talks from relevant Industry).
2. Working on experiments using virtual labs is to be ensured in lab courses.
3. Student's visit to Industry/Industry Expert's project site must be arranged as & when possible.

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Duhai, Ghaziabad

SIXTH SEMESTER **CIVIL ENGINEERING** **SESSION 2020-21**

S.No	Subject Code	Subject	Periods			Evaluation Scheme				End Semester		Total	Credit
			L	T	P	CT	TA	Total	PS	TE	PE		
1	KCE 601	Design of Concrete Structures	3	1	0	30	20	50		100		150	4
2	KCE 602	Transportation Engineering	3	1	0	30	20	50		100		150	4
3	KCE 603	Environmental Engineering	3	1	0	30	20	50		100		150	4
4		Departmental Elective-III	3	0	0	30	20	50		100		150	3
	KCE 061	Advance Structural Analysis											
	KCE 062	River Engineering											
	KCE 063	Repair and Rehabilitation of Structures											
	KCE 064	Foundation Engineering											
5		Open Elective-I	3	0	0	30	20	50		100		150	3
6	KCE 651	Transportation Engineering Lab	0	0	2				25		25	50	1
7	KCE 652	Environmental Engineering Lab	0	0	2				25		25	50	1
8	KCE 653	Structural Detailing Lab	0	0	2				25		25	50	1
9	NC*	Essence of Indian Traditional Knowledge/Constitution of India	2	0	0	15	10	25		50			
10		MOOCs (Essential for Hons. Degree)											
		Total	17	3	6							900	21

NOTE:

1. Regular classroom interaction with industry experts is to be ensured in all theory courses (minimum two expert talks from relevant Industry).
2. Working on experiments using virtual labs is to be ensured in lab courses.
3. Student's visit to Industry/Industry Expert's project site must be arranged as & when possible.

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Duhai, Ghaziabad

CIVIL ENGINEERING

DR. A.P.J. ABDUL KALAM TECHNICAL UNIVERSITY, UTTAR PRADESH, LUCKNOW

EVALUATION SCHEME & SYLLABUS

FOR

B. TECH. FOURTH YEAR

CIVIL ENGINEERING

AS PER

AICTE MODEL CURRICULUM

[Effective from the Session: 2021-22]

Director
R.D. Engineering College
Duhai, Ghaziabad

CIVIL ENGINEERING

SEVENTH SEMESTER **CIVIL ENGINEERING** **SESSION 2021-22**

S.No	Subject Code	Subject	Periods			Evaluation Scheme				End Semester		Total	Credit
			L	T	P	CT	TA	Total	PS	TE	PE		
1	KHU701/ KHU702	HSMC-1*/HSMC-2*	3	0	0	30	20	50		100		150	3
2		Departmental Elective -IV	3	0	0	30	20	50		100		150	3
	KCE 070	Railway, Waterway and Airway Engineering											
	KCE 071	Sustainable Construction Methods											
	KCE 072	Probability Methods in Civil Engineering											
	KCE 073	Advance Concrete Design											
	KCE 074	Solid Waste Management											
3		Departmental Elective -V	3	0	0	30	20	50		100		150	3
	KCE 075	Design of Steel Structures											
	KCE 076	Urban Transportation Planning											
	KCE 077	Geosynthetics and Reinforced Soil Structures											
	KCE 078	Irrigation and Water Resource Engineering											
	KCE 079	Disaster Preparedness and Management											
4		Open Elective-II	3	0	0	30	20	50		100		150	3
5	KCE751	Concrete Lab	0	0	2				25		25	50	1
6	KCE752	Mini Project or Internship Assessment*	0	0	2				50			50	1
7	KCE753	Project	0	0	8				150			150	4
8		MOOCs (Essential for Hons. Degree)											
		Total	12	0	12							850	18

NOTE:

1. **Regular classroom interaction with industry experts is to be ensured in all theory courses (minimum two expert talks from relevant Industry).**
2. **Working on experiments using virtual labs is to be ensured in lab courses.**
3. **Student's visit to Industry/Industry Expert's project site must be arranged as & when possible.**
4. **The Mini Project or Internship (4 - 6 weeks) conducted during semester break after VI semester will be assessed during VII semester.**
5. **Project work is to be identified during VI semester, Initiated in VII semester (KCE 753) and completed in VIII semester (KCE 851).**

EIGHTH SEMESTER **CIVIL ENGINEERING** **SESSION 2021-22**

Director
R.D. Engineering College

CIVIL ENGINEERING

S.No	Subject Code	Subject	Periods			Evaluation Scheme				End Semester		Total	Credit
			L	T	P	CT	TA	Total	PS	TE	PE		
1	KHU801/ KHU802	HSMC-1* / HSMC-2*	3	0	0	30	20	50		100		150	3
2		Open Elective-III	3	0	0	30	20	50		100		150	3
3		Open Elective -IV	3	0	0	30	20	50		100		150	3
4	KCE851	Project	0	0	18				100		300	400	9
5		MOOCs (Essential for Hons. Degree)											
		Total	9	0	18							850	18

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B.Tech. (Mechanical Engineering)

SEMESTER- III

Sl. No.	Subject Codes	Subject	Periods			Evaluation Scheme				End Semester		Total	Credit
			L	T	P	CT	TA	Total	PS	TE	PE		
1	KOE031-38/ KAS302	Engg. Science Course/Maths IV	3	1	0	30	20	50		100		150	4
2	KAS301/ KVE301	Technical Communication/Universal Human Values	2 3	1 0	0 0	30	20	50		100		150	3
3	KME301	Thermodynamics	3	1	0	30	20	50		100		150	4
4	KME302	Fluid Mechanics & Fluid Machines	3	1	0	30	20	50		100		150	4
5	KME303	Materials Engineering	3	0	0	30	20	50		100		150	3
6	KME351	Fluid Mechanics Lab	0	0	2				25		25	50	1
7	KME352	Material Testing Lab	0	0	2				25		25	50	1
8	KME353	Computer Aided Machine Drawing-I Lab	0	0	2				25		25	50	1
9	KME354	Mini Project or Internship Assessment*	0	0	2			50				50	1
10	KNC301/ KNC302	Computer System Security/Python Programming	2	0	0	15	10	25		50			0
11		MOOCs (Essential for Hons. Degree)											
		Total										**950**	**22**

*The Mini Project or internship (3-4 weeks) conducted during summer break after II semester and will be assessed during III semester.

SEMESTER- IV

Sl. No.	Subject Codes	Subject	Periods			Evaluation Scheme				End Semester		Total	Credit
			L	T	P	CT	TA	Total	PS	TE	PE		
1	KAS402/ KOE041-48	Maths IV/Engg. Science Course	3	1	0	30	20	50		100		150	4
2	KVE401/ KAS401	Universal Human Values/Technical Communication	3 2	0 1	0 0	30	20	50		100		150	3
3	KME401	Applied Thermodynamics	3	0	0	30	20	50		100		150	3
4	KME402	Engineering Mechanics	3	1	0	30	20	50		100		150	4
5	KME403	Manufacturing Processes	3	1	0	30	20	50		100		150	4
6	KME451	Applied Thermodynamics Lab	0	0	2				25		25	50	1
7	KME452	Manufacturing Processes Lab	0	0	2				25		25	50	1
8	KME453	Computer Aided Machine Drawing-II Lab	0	0	2				25		25	50	1
9	KNC402/ KNC401	Python Programming / Computer System Security	2	0	0	15	10	25		50			0
10		MOOCs (Essential for Hons. Degree)											
		Total										**900**	**21**

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B. Tech Mechanical Engineering

Evaluation Scheme

SEMESTER- V													
Sl. No.	Code	Subject	Periods			Evaluation Scheme				End Semester		Total	Credits
			L	T	P	CT	TA	Total	PS	TE	PE		
1	KME 501	Heat and Mass Transfer	3	1	0	30	20	50		100		150	4
2	KME 502	Strength of Material	3	1	0	30	20	50		100		150	4
3	KME 503	Industrial Engineering	3	1	0	30	20	50		100		150	4
4		Departmental Elective-I	3	0	0	30	20	50		100		150	3
5		Departmental Elective-II	3	0	0	30	20	50		100		150	3
6	KME 551	Heat Transfer LAB	0	0	2				25		25	50	1
7	KME 552	Python Lab	0	0	2				25		25	50	1
8	KME 553	Internet of Things Lab	0	0	2				25		25	50	1
9	KME 554	Mini Project or Internship Assessment*	0	0	2				50			50	1
10	KNC501/ KNC502	Constitution of India, Law and Engineering / Indian Tradition, Culture and Society	2	0	0	15	10	25		50			NC
11	MOOCs (Essential for Hons. Degree)												
		Total	**17**	**3**	**6**							**950**	**22**

*The Mini Project or internship (4 - 5 weeks) conducted during summer break after IV semester and will be assessed during V semester.

SEMESTER- VI													
Sl. No.	Code	Subject	Periods			Evaluation Scheme				End Semester		Total	Credits
			L	T	P	CT	TA	Total	PS	TE	PE		
1	KME 601	Refrigeration and Air Conditioning	3	1	0	30	20	50		100		150	4
2	KME 602	Machine Design	3	1	0	30	20	50		100		150	4
3	KME 603	Theory of Machine	3	1	0	30	20	50		100		150	4
4		Departmental Elective-III	3	0	0	30	20	50		100		150	3
5		Open Elective-I	3	0	0	30	20	50		100		150	3
6	KME 651	Refrigeration and Air Conditioning Lab	0	0	2				25		25	50	1
7	KME 652	Machine Design Lab	0	0	2				25		25	50	1
8	KME 653	Theory of Machine Lab	0	0	2				25		25	50	1
9	KNC601/ KNC602	Constitution of India, Law and Engineering / Indian Tradition, Culture and Society	2	0	0	15	10	25		50			NC
10		**Total**	**17**	**3**	**6**							**900**	**21**

Director
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Duhai, Ghaziabad

B. Tech Mechanical Engineering
Evaluation Scheme
Effective in Session 2021-22

SEMESTER- VII													
Sl. No.	Code	Subject	Periods			Evaluation Scheme			End Semester			Total	Credit
			L	T	P	CT	TA	Total	PS	TE	PE		
1		HSMC-1/HSMC-2	3	0	0	30	20	50		100		150	3
2		Departmental Elective-IV	3	0	0	30	20	50		100		150	3
3		Departmental Elective-V	3	0	0	30	20	50		100		150	3
4		Open Elective-II	3	0	0	30	20	50		100		150	3
5	KME 751	Measurement & Metrology Lab	0	0	2				25		25	50	1
6	KME 752	Mini Project or Internship Assessment*	0	0	2				50			50	1
7	KME 753	Project	0	0	8				150			150	4
8		MOOCs (Essential for Hons. Degree)											
		Total	**9**	**0**	**12**	**21**						**850**	**18**

*The Mini Project or internship (5 - 6 weeks) conducted during summer break after VI semester and will be assessed during VII semester.

SEMESTER- VIII													
Sl. No	Code	Subject	Periods			Evaluation Scheme			End Semester			Total	Credit
			L	T	P	CT	TA	Total	PS	TE	PE		
1		HSMC-2/HSMC-1	3	0	0	30	20	50		100		150	3
2		Open Elective-III	3	0	0	30	20	50		100		150	3
3		Open Elective-IV	3	0	0	30	20	50		100		150	3
4	KME 851	Project	0	0	18				100		300	400	9
5		MOOCs (Essential for Hons. Degree)											
		Total	**9**	**0**	**18**	**27**						**850**	**18**

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Duhai, Ghaziabad

DR. A.P.J. ABDUL KALAM TECHNICAL UNIVERSITY

LUCKNOW

Teaching and Evaluation Scheme

For

MBA Main Second Year

AS PER AICTE MODEL CURRICULUM

(Effective from the Academic Session: 2021-22)

Director
R.D. Engineering College
Duhai, Ghaziabad

GUIDELINES FOR SUMMER INTERNSHIP (III SEMESTER) AND RESEARCH PROJECT REPORT(IV SEMESTER)

SUMMER TRAINING PROJECT REPORT

1. At the end of the second semester examination, it is mandatory for every student of MBA to undergo on-the-job practical training in any manufacturing, service or financial organization. The training will be of 6 to 8 weeks duration. The college/institute will facilitate this compulsory training for students.
2. During the training, the student is expected to learn about the organization and analyze and suggest solutions to a live problem. The objective is to equip the students with the knowledge of actual functioning of an organization and problems faced by them for exploring feasible solutions.
3. During the course of training, the organization (where the student is undergoing training) will assign a problem/project to the student.
4. The student, after the completion of training will present the work to his / her faculty guide / mentor. Guide will assess student's contribution and will award internal marks out of 50. Thereafter students will submit a report to the College/Institute which will form part of the third semester examination. However, the report must be submitted by the end of October 30.
5. The report (based on training and the problem/project studied) prepared by the student will be known as Summer Training Project Report. The report should ordinarily be based on primary data. It should reflect in depth study of a micro problem, ordinarily assigned by the organization where the student undergoes training. Relevant tables and bibliography should support it. One comprehensive chapter must be included about the organization where the student has undergone training. This should deal with brief history of the organization, its structure, performance products/services and problem faced. This chapter will form part 1 of the report. Part 2 of the report will contain the study of micro research problem. The average size of report ordinarily will be of minimum 100 pages in standard font size (12) and double spacing. Two neatly typed (one sided only) and soft bound copies of the report will be submitted to the College/Institute. The report will be typed on A-4 size paper.
6. The report will have three certificates, one by the Head of the Department, another by the Faculty guide and third one from reporting officer of the organization where the student has undergone training. These three certificates should be attached in the beginning of the report.
7. The Summer Training Project Report will carry 150 marks and will be evaluated by two examiners (external and internal). The evaluation will consist of (1) Project Report evaluation (2) Project Presentation and Viva Voce.
8. The Project Report evaluation will comprise of 50 sessional marks and would be evaluated by internal project guide. The Presentation and Viva Voce would comprise of 100 marks and would be evaluated by two examiners (1 external and 1 internal). The average of the marks awarded by the 2 examiners will be taken into account for the results. In case the difference in the awards given by the examiners is 30 or more marks, the project report will be referred to a third examiner. Only such person will evaluate the project report who has minimum three years of experience of teaching MBA classes in a College/University. Experience of teaching MBA classes as guest faculty shall not be counted.
9. The parameters on which external evaluation would be carried out are as under:

Project Report Evaluation:

Director
R.D. Engineering College
Duhai, Ghaziabad

Evaluation Criteria & Marks	Understanding of objectives with topic (20)	Understanding of Relevance of topic (20)	Interpretation & Analysis (20)	Presentation (20)	Query handling (20)

10. It is mandatory that the student will make presentation in the presence of teachers and students. The student is expected to answer to the queries and questions raised in such a meeting.
11. The student shall prepare the Summer Training Project Report as per the format given in the Summer Training Manual as prescribed by the University
12. In the beginning of III semester and before commencement of regular classes each student has to choose dual specialization of his/her choice or interest. University offers dual specialization in area Human Resource Management (HR), Marketing Management (MM), Financial Management (FM), International Business (IB) and Information Technology (IT) and Operations Management (OM). Institute shall help students to choose specialization by conducting workshop, Industry Interaction etc.
13. Institute has a right to close the date of choosing area of specialization in order to smooth functioning of classes and department and effective utilization of resources. However, this process shall complete before commencement of regular classes.

RESEARCH PROJECT REPORT (RPR)

1. In fourth semester, the candidates will have to submit a Research Project Report on a problem/topic (from the specialization areas) to be assigned by the MBA department under the supervision of a core faculty member of the department.
2. The Research Project Report will carry 150 marks.
3. The evaluation of the project report will be done by two examiners (external & internal). The evaluation will consist of (1) Evaluation of Project Report (2) Presentation and Viva Voce.
4. The evaluation of Project Report will comprise of 50 marks and would be evaluated by the internal guide.
5. The evaluation of Viva Voce of Project would comprise of 100 marks and would be evaluated by two examiners (1 external and 1 internal).The average of the marks awarded by the 2 examiners will be taken into account for the results. In case the difference in the marks given by the examiners is 30 or more, the project report will be referred to a third examiner. In such cases the average of two closer awards (given by three examiners) will be taken into account for the results.
6. The report will contain the objectives and scope of the study. Research Methodology, use and importance of the study, analysis of data collected, conclusions and recommendations. It will contain relevant charts, diagrams and bibliography. A certificate of the supervisor and the Head of the MBA program certifying the authenticity of the report shall be attached therewith. The student will submit two copies of the report to the Head of MBA program. The number of pages in the report will be minimum 75 or more. The report should be typed in A-4 size paper. The parameter on which both evaluation (1 & 2) would be carried on would be on the basis of:

The scheme of evaluation for Project Report

Criteria & Marks	Relevance of Objectives with topic (10)	Relevance of Research Methodology(20)	Interpretation & Analysis (20)	Total (50)

The scheme of evaluation of Viva voce

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Evaluation Criteria and Marks	Understanding of Objectives with topic (20)	Understanding of the relevance of Research (20)	Interpretation & Analysis (20)	Presentation & Communication skills (20)	Query Handling (20)	Total (100)

MBA II Year Teaching and Evaluation Scheme
W.E.F. Academic Session 2021-22
(In Accordance with AICTE Model Curriculum & New Education Policy)

SEMESTER III

SNo	Codes	SUBJECT	PERIODS			INTERNAL EVALUATION SCHEME				END SEMESTER EVALUATION		TOTAL	CREDIT
			L	T	P	CT	TA	PS	TOTAL	TE	PE		
1	KMBN301	STRATEGIC MANAGEMENT	4	0	0	30	20	0	50	100	0	150	3
2	KMBN302	INNOVATION AND ENTREPRENEURSHIP	4	0	0	30	20	0	50	100	0	150	3
3	KVE 301	Universal Human Values and Professional Ethics	3	1	0	30	20	0	50	100	0	150	3
4		Elective- 1 Specialization Group-1	4	0	0	30	20	0	50	100	0	150	3
5		Elective -2 Specialization Group-1	4	0	0	30	20	0	50	100	0	150	3
6		Elective -1 Specialization Group-2	4	0	0	30	20	0	50	100	0	150	3
7		Elective -2 Specialization Group-2	4	0	0	30	20	0	50	100	0	150	3
8	KMBN308	Summer Training Project Report & Viva Voce	0	2	0	0	50	0	50	0	100	150	4
		TOTAL										1200	25

SEMESTER IV

SNo	Codes	SUBJECT	PERIODS			INTERNAL EVALUATION SCHEME				END SEMESTER EVALUATION		TOTAL	CREDIT
			L	T	P	CT	TA	PS	TOTAL	TE	PE		
1	KMBN401	Emerging Technologies in Global Business Environment	4	0	0	30	20	0	50	100	0	150	3
2		Elective- 3 Specialization Group-1	4	0	0	30	20	0	50	100	0	150	3
3		Elective -4 Specialization Group-1	4	0	0	30	20	0	50	100	0	150	3
4		Elective- 5 Specialization Group-1	4	0	0	30	20	0	50	100	0	150	3
5		Elective -3 Specialization Group-2	4	0	0	30	20	0	50	100	0	150	3
6		Elective -4 Specialization Group-2	4	0	0	30	20	0	50	100	0	150	3
7		Elective -5 Specialization Group-2	4	0	0	30	20	0	50	100	0	150	3

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8	KMBN408	Research Project Report & Viva Voce	0	2	0	0	50	0	50	0	100	150	4
		TOTAL										1200	25

Specialization Group: HUMAN RESOURCE (HR)

Elective Subjects in III Semester

S.No.	Code	Course Title
1	KMBN HR01	TALENT MANAGEMENT
2	KMBN HR02	EMPLOYEE RELATIONS AND LABOUR LAWS

Elective Subjects in IV Semester

S.No.	Code	Course Title
1	KMBN HR03	HR ANALYTICS
2	KMBN HR04	PERFORMANCE AND REWARD MANAGEMENT
3	KMBN HR05	INTERNATIONAL HRM

Specialization Group: MARKETING (MK)

Elective Subjects in III Semester

S.No.	Code	Course Title
1	KMBN MK01	CONSUMER BEHAVIOUR AND MARKETING COMMUNICATION
2	KMBN MK02	MARKETING ANALYTICS

Elective Subjects in IV Semester

S.No.	Code	Course Title
1	KMBN MK03	B2B AND SERVICES MARKETING
2	KMBN MK04	SALES AND RETAIL MANAGEMENT
3	KMBN MK05	SOCIAL MEDIA AND WEB ANALYTICS

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Revised Evaluation Scheme & Syllabus

MBA

(Dual Specialization in Marketing, HR, Finance, Operation, IB & IT)

First Year

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AICTE MODEL CURRICULUM

(Effective from the Session: 2020-21)

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MBA 1st Year Course Structure in accordance with AICTE Model Curriculum Effective w.e.f.

Academic Session 2020-21

Semester I

SN	Codes	SUBJECT	PERIODS			INTERNAL EVALUATION SCHEME				END SEMESTER EVALUATION		TOTAL	CREDIT
			L	T	P	CT	TA	PS	TOTAL	TE	PE		
1	KMBN101	MANAGEMENT CONCEPTS & ORGANISATIONAL BEHAVIOUR	4	0	0	30	20	0	50	100	0	150	3
2	KMBN102	MANAGERIAL ECONOMICS	4	0	0	30	20	0	50	100	0	150	3
3	KMBN103	FINANCIAL ACCOUNTING & ANALYSIS	3	1	0	30	20	0	50	100	0	150	3
4	KMBN104	BUSINESS STATISTICS & ANALYTICS	3	1	0	30	20	0	50	100	0	150	3
5	KMBN105	MARKETING MANAGEMENT	4	0	0	30	20	0	50	100	0	150	3
6	KMBN106	DESIGN THINKING	2	0	0	15	10	0	25	50		75	2
7	KMBN107	BUSINESS COMMUNICATION	3	1	0	30	20	0	50	100	0	150	3
		LAB / PRACTICALS											
8	KMBN151	IT SKILLS LAB -1	0	0	3	0		50	50	-	100	150	3
9	KMBN152	MINI PROJECT -1	0	0	3	0	0	25	25	0	50	75	3
												1200	26

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Semester II

SN	CODE	SUBJECT	PERIODS			INTERNAL EVALUATION SCHEME				END SEMESTER EVALUATION		TOTAL	CREDIT
			L	T	P	CT	TA	PS	TOTAL	TE	PE		
1	KMBN201	**BUSINESS ENVIRONMENT & LEGAL ASPECT OF BUSINESS**	4	0	0	30	20	0	50	100	0	150	3
2	KMBN202	HUMAN RESOURCE MANAGEMENT	4	0	0	30	20	0	50	100	0	150	3
3	KMBN203	BUSINESS RESEARCH METHODS	4	0	0	30	20	0	50	100	0	150	3
4	KMBN204	FINANCIAL MANAGEMENT & CORPORATE FINANCE	3	1	0	30	20	0	50	100	0	150	3
5	KMBN205	OPERATIONS MANAGEMENT	3	1	0	30	20	0	50	100	0	150	3
6	KMBN206	QUANTITATIVE TECHNIQUES FOR MANAGERS	3	1	0	30	20	0	50	100	0	150	3
7	KMBN207	DIGITAL MARKETING & E COMMERCE	4	0	0	30	20	0	50	100	0	150	3
8	KMBN208	MANAGEMENT INFORMATION SYSTEMS	2	0	0	15	10	0	25	25	0	50	2
			LAB / PRACTICALS										
9	KMBN251	IT SKILLS LAB-2	0	0	2	0	0	25	25	0	25	50	1
10	KMBN252	MINI PROJECT -2	0	0	3	0	0	25	25	0	25	50	2
												1200	26

L/T/P – Lecture/Tutorial/Practical, CT/TA/PS- Class Test/Teachers Assessment/Practical Session, TE/PE- Term End/ Practical End

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SEMESTER I

MANAGEMENT CONCEPTS AND ORGANISATIONAL BEHAVIOUR

Course Credit: 3 Contact Hours: 40

Course Objectives:

1. To provide basic understandings of management processes
2. To help the students understand the concepts of organizational behaviour
3. To apply the concepts of management and organizational behaviors in real world situations
4. Familiarizing the students with the contemporary issues in management.
5. Developing managerial and leadership skills among students

UNIT I (8 Lectures)

Fundamentals of Management: Management practices from past to present, Different levels of management, Managerial skills and Managerial Functions , Case Studies

Planning- Objective of planning, Planning process, Types of planning, Types of plans, Management by Objective, Decision-making- types, process & techniques,. Case Studies

UNIT-II (8 Lectures)

Organising & Staffing- Types of organization, Organization structure and decentralization of authority, Meaning of staffing, Recruitment, selection & placement, Training & development..

Directing & Controlling- Principle of directing, Essence of coordination, Different control techniques, Management by exception. Case Studies

UNIT III(8 Lectures)

Fundamentals of individual behavior, Personality, types of personality, Personal effectiveness, meaning of Attitudes, Types, Components, attitude formation and attitude change. Meaning & Type of Group Behaviour, Interpersonal skills, Transactional Analysis, Johari Window,

UNIT IV (8 Lectures)

Motivation:, Theory of Motivation: Maslow's, Herzberg's, McClelland, Contemporary theories of Motivation: Self Determination Theory, Self Efficacy Theory, Vroom's Expectancy Theory, Equity Theory, Reinforcement Theory, Meaning of Perception, process, behavioral applications of perception. Case Studies

UNIT V: (8 Lectures)

Leadership: What is leadership, types of leaders and leadership styles, traits and qualities of effective leader, trait theory, LSM – Leadership Situational Model, Team Building, Tuckman Model of Team Development. Organizational Change: Meaning of organizational change approaches to managing organizational change, creating a culture for change, implementing the change, Kurt Lewin Model of change. Case Studies

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COURSE OUTCOME

Course Outcomes	Bloom's taxonomy
CO 1: Developing understanding of managerial practices and their perspectives.	Knowledge (K 2) Remembering (K1)
CO2: Understanding and Applying the concepts of organizational behaviour	Knowledge (K 2) Applying (K 4)
CO 3: Applying the concepts of management and analyze organizational behaviors in real world situations	Applying (K 4) Analyzing (K 5)
CO 4: Comprehend and practice contemporary issues in management.	Comprehending (K 3)
CO 5: Applying managerial and leadership skills among students	Applying (K4)

Suggested Readings

1. Koontz Harold &Weihrich Heinz – Essentials of management (Tata McGraw Hill, 5th Edition,2008)
2. L. M. Prasad- Principles and Practices of Management, Sulatn Chand & Sons, 7th edition, 2007.
3. Stephen P. Robbins, —Organizational Behaviourǁ, 12th Edition, Prentice Hall
4. Dr. Premvir Kapoor, Principles and Practices of Management, Khanna Publishing House, Delhi
5. Robbins & Coulter - Management (Prentice Hall of India, 9th Edition)
6. Principles of Management, George R. Terry & S.G. Franklin, AITBS, Delhi.
7. N M Khandelwal- Indian Ethos & Values for Management- Himalyan Publishing
8. Fred Luthans, —Organizational Behaviourǁ, 12th Edition, McGraw Hill International Edition
9. Aswathappa K, —Organizational Behaviour (Text, Cases and Games)ǁ, Himalaya Publication
10. UdaiPareek, —Organizational Behaviorǁ, Oxford University Press

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MANAGERIAL ECONOMICS

Course Credit: 3

Contact Hours: 40

Course Objective:

1. To understand the importance of Managerial Economics in management and businesses
2. To apply the principles of managerial economics in achieving business objectives
3. Be equipped with the tools necessary in forecasting product demand
4. Understand and be able to apply latest pricing strategies
5. Understand and analyze the macro environment affecting the business decision making.

UNIT –I (6 Hours)

Basic Concepts and principles: Definition, Nature and Scope of Economics-Micro Economics and Macro Economics, Managerial Economics and its relevance in business decisions. Fundamental Principles of Managerial Economics - Incremental Principle, Marginal Principle, Opportunity Cost Principle, Discounting Principle, Concept of Time Perspective, Equi-Marginal Principle, Utility Analysis, Cardinal Utility and Ordinal Utility. Case Studies

UNIT –II (8Hours)

Demand and Supply Analysis: Theory of Demand, Types of Demand. Determinants of demand, Demand Function, Demand Schedule, Demand curve, Law of Demand, Exceptions to the law of Demand, Shifts in demand curve, Elasticity of Demand and its measurement. Price Elasticity, Income Elasticity, Arc Elasticity. Cross Elasticity and Advertising Elasticity. Uses of Elasticity of Demand for managerial decision making, Demand forecasting meaning, significance and methods.(numerical Exercises) Case Studies

Supply Analysis; Law of Supply, Supply Elasticity; Analysis and its uses for managerial decision making.

Price of a Product under demand and supply forces . Case Studies

UNIT –III (10Hours)

Production and cost Analysis: Production concepts & analysis; Production function, Types of production function, Laws of production: Law of diminishing returns, Law of returns to scale.

Cost concept and analysis: Cost, Types of costs, Cost output relationship in the short-run. Cost output relationship in the Long-run. Estimation of revenue. Average Revenue, Marginal Revenue . Case Studies

UNIT –IV (10Hours)

Market structures: Perfect and Imperfect Market Structures, Perfect Competition, features, determination of price under perfect competition. Monopoly: Feature, pricing under monopoly, Price Discrimination. Monopolistic: Features, pricing under monopolistic competition, product differentiation. Oligopoly: Features, kinked demand curve, cartels, price leadership. Case Studies

UNIT –V (6Hrs)

National Income; Concepts and various methods of its measurement, Circular flows in 2 sector, 3 sector, 4 sector economies, Inflation, types and causes, Business Cycle & its phases.

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Course Outcomes:

Course Outcomes	Bloom's taxonomy
CO1: Students will be able to remember the concepts of micro economics and also able to understand the various micro economic principles to make effective economic decisions under conditions of risk and uncertainty.	• Knowledge (K 2) • Remembering (k1)
CO2: The students would be able to understand the law of demand & supply & their elasticities , evaluate & analyse these concepts and apply them in various changing situations in industry . Students would be able to apply various techniques to forecast demand for better utilization of resources.	• Knowledge (K 2) • Applying (K 4) • Synthesizing (K6) • Evaluating (K7)
CO3: The students would be able to understand the production concept and how the production output changes with the change in inputs and able to analyse the effect of cost to business and their relation to analyze the volatility in the business world	• Comprehending (K 3) • Applying (K 4) • Analyzing (K 5) • Evaluating (K7)
CO4: The students would be able to understand & evaluate the different market structure and their different equilibriums for industry as well as for consumers for the survival in the industry by the application of various pricing strategic	• Applying (K 4) • Analyzing (K 5) • Synthesizing (K6)
CO5: The students would be able to analyse the macroeconomic concepts & their relation to micro economic concept & how they affect the business & economy.	• Knowledge (K 2) • Comprehending (K 3)

Suggested Readings

1. Managerial Economics ,D.N.Dwivedi,Vikas Publication, 7th Ed
2. Managerial Economics, GEETIKA, McGraw-Hill Education 2nd Ed.
3. Managerial Economics: Concepts and Applications (SIE), THOMAS& MAURICE, McGraw-Hill Education, 9th Ed
4. Managerial Economics, H.L Ahuja, S.Chand, 8th Ed
5. Managerial Economics – Theory and Applications, Dr.D.M.Mithani, Himalaya Publications, 7th Ed.
6. Sociology & Economics for Engineers, Dr. Premvir Kapoor, Khanna Publishing House

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FINANCIAL ACCOUNTING AND ANALYSIS

Course Credit: 3 Contact Hours: 40

Course Objectives:

1) To understand the fundamentals, basic theory and concepts of financial accounting.
2) To have a knowledge about various Accounting Standards used in preparation of financial statements.
3) To have an understanding of preparation and presentation of financial statements.
4) To acquire knowledge about various techniques used for analysing financial statements with its application.
5) To enable students acquainted with current trends and social responsibility accounting.

UNIT I (6Hrs)

Meaning and Scope of Accounting: Evolution and Users of Accounting, Basic Accounting terminologies, Principles of Accounting, Accounting Concepts & Conventions, Accounting Equation, Deprecation Accounting.

UNIT II (6Hrs)

Mechanics of Accounting: Accounting Standards and IFRS: International Accounting Principles and Standards; Matching of Indian Accounting Standards with International Accounting Standards, Double entry system of Accounting, journalizing of transactions; Ledger posting and Trial Balance.

UNIT III (12 Hrs)

Presentation of Financial Statement: Preparation of final accounts (Profit & Loss Account and Balance Sheet) according to companies act 2013 (vertical format), Excel Application to make Balance sheet, Case studies and Workshops, Preparation of Cash Flow Statement and its analysis.

UNIT IV (10 Hrs)

Analysis of financial statement: Ratio Analysis- Solvency ratios, Profitability ratios, activity ratios, liquidity ratios, Market capitalization ratios; leverage Ratio, Detailed Analysis using excel application.

UNIT V (6 Hrs)

Financial Statement Analysis and Recent Types of Accounting: Common Size Statement; Comparative Balance Sheet and Trend Analysis of manufacturing, Service & banking organizations, Case Study and Workshops in analysing Balance sheet. Human Resource Accounting, Forensic Accounting, Accounting for corporate social responsibility.

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Course Outcome:

After successful completion of this course students will be able to

S.No	Course Outcome	Bloom's Taxonomy
1	CO1.Understand and apply accounting concepts, principles and conventions for their routine monetary transaction.	Knowledge (K2)/ Comprehending (K 3)
2	CO2. Understand about IFRS, Ind AS and IAS for preparation and reporting of financial statements.	Knowledge (K2) Synthesizing (K6)/
3	CO3. Create and prepare financial statements and Cash flow in accordance with Generally Accepted Accounting Principles	Remembering (k1)
4	CO4. Analyse, interpret and communicate the information contained in basic financial statements and explain the limitations of such statements.	Analysing (K 4) / Evaluating (K7))
5	CO5. Recognising various types of accounting and utilize the technology and social responsibility in facilitating and enhancing accounting and financial reporting processes	Knowledge (K2) Applying (K 4)

Suggested Readings

1. Maheshwari S.N &Maheshwari S K – A text book of Accounting for Management (Vikas, 10th Edition)
2. Essentials of Financial Accounting (based on IFRS), Bhattacharya (PHI,3rd Ed)
3. Khan and Jain - Financial Management (Tata McGraw Hill, 7th Ed.)
4. PC Tulsian- Financial Accounting (Pearson, 2016)
5. Dhamija - Financial Accounting for managers: (Prentice Hall, 2nd Edition).
6. Narayanswami - Financial Accounting: A Managerial Perspective (PHI,5th Ed)
7. DhaneshkKhatri- Financial Accounting (TMH,2015)
8. Ambrish Gupta - Financial Accounting: A Managerial Perspective (Prentice Hall, 4th Edition)
9. Ramchandran&Kakani - Financial Accounting for Management (TMH, 2nd Edition).
10. Mukherjee - Financial Accounting for Management (TMH, 2nd Edition).

BUSINESS STATISTICS & ANALYTICS

Course Credit: 3

Contact Hours: 40 hours

Course Objectives

1. Understand the different basic concept / fundamentals of business statistics.
2. Understand the importance of measures of Descriptive statistics which includes measures of central tendency, Measures of Dispersion, Time Series Analysis, Index Number, Correlation and Regression analysis and their implication on Business performance.
3. Understand the concept of Probability and its usage in various business applications.
4. Understand the Hypothesis Testing concepts and use inferential statistics- t, F, Z Test and Chi Square Test
5. Understand the practical application of Descriptive and Inferential Statistics concepts and their uses for Business Analytics.

Unit I (10 Sessions): Descriptive Statistics

Meaning, Scope, types, functions and limitations of statistics, Measures of Central tendency – Mean, Median, Mode, Quartiles, Measures of Dispersion – Range, Inter quartile range, Mean deviation, Standard deviation, Variance, Coefficient of Variation, Skewness and Kurtosis.

Unit II (8 Sessions):Time Series & Index Number

Time series analysis: Concept, Additive and Multiplicative models, Components of time series, Trend analysis: Least Square method - Linear and Non- Linear equations, Applications in business decision-making.

Index Numbers:- Meaning , Types of index numbers, uses of index numbers, Construction of Price, Quantity and Volume indices:- Fixed base and Chain base methods.

Unit III (6 Sessions): Correlation & Regression Analysis

Correlation Analysis: Rank Method & Karl Pearson's Coefficient of Correlation and Properties of Correlation.

Regression Analysis: Fitting of a Regression Line and Interpretation of Results, Properties of Regression Coefficients and Relationship between Regression and Correlation.

Unit IV (8 Sessions): Probability Thoery & Distribution

Probability: Theory of Probability, Addition and Multiplication Law, Baye's Theorem

Probability Theoretical Distributions: Concept and application of Binomial; Poisson and Normal distributions.

Unit V (8 Sessions) *Hypothesis Testing& Business Analytics*

Hypothesis Testing: Null and Alternative Hypotheses; Type I and Type II errors; Testing of Hypothesis: Large Sample Tests, Small Sample test, (t, F, Z Test and Chi Square Test)

Concept of Business Analytics- Meaning types and application of Business Analytics, Use of Spread Sheet to anlayze data-Descriptive analytics and Predictive analytics.

Course Outcome	Blooms Taxanomy
CO1. Gaining Knowledge of basic concept / fundamentals of business statistics.	• Knowledge (K 2)
CO2. To compute various measures of central tendency, Measures of Dispersion, Time Series Analysis, Index Number, Correlation and Regression analysis and their implication on Business performance.	• Remembering (K1) • Applying (K 4)
CO3. Evaluating basic concepts of probability and perform probability theoretical distributions	• Comprehending (K 3) • Applying (K 4)
CO4. To apply Hypothesis Testing concepts and able to apply inferential statistics- t, F, Z Test and Chi Square Test	• Analyzing (K 5) • Synthesizing (K6)
CO5. To perform practical application by taking managerial decision and evaluating the Concept of Business Analytics.	• Evaluating (K7) • Applying (K 4)

Suggested Readings

1. G C Beri – Business Statistics, 3rd ed, TATA McGrawHill.
2. Chandrasekaran & Umaparvathi-Statistics for Managers, 1st edition, PHI Learning
3. Davis , Pecar – Business Statistics using Excel, Oxford
4. Ken Black – Business Statistics, 5th ed., Wiley India
5. Levin and Rubin – statistics for Management, 7th ed., Pearson
6. Lind, Marchal, Wathen – Staistical techniques in business and economics, 13th ed, McGrawHill
7. Newbold, Carlson, Thorne – Statistics for Business and Economics, 6th ed., Pearson
8. S. C.Gupta – Fundamentals of Statistics, Himalaya Publishing
9. Walpole – Probability and Statistics for Scientists and Engineers, 8th ed., Pearson

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MARKETING MANAGEMENT

COURSE CREDIT: 3

HOURS : 40

Course Objectives

1. Assess market opportunities by analyzing customers, competitors, collaborators, context, and the strengths and weaknesses of a company.
2. Understand consumers' requirements and their behaviors.
3. Develop effective marketing strategies to achieve organizational objectives.
4. Communicate and defend your recommendations and critically examine and build upon the recommendations of your classmates both quantitatively and qualitatively.
5. Develop the understanding the current global and digital aspect of marketing.

Unit 1(6 hours)

Introduction: Nature and scope of marketing, Various marketing orientations, Need, Want, Demand, Elements of Marketing mix, customer value and the value delivery process.

Understanding Consumer Behavior: Buying motives, factors influencing buying behavior, buying habits, stages in consumer buying decision process, types of consumer buying decisions.

Unit 2 (8 hours)

Market segmentation, Targeting and Positioning: Meaning, Factors influencing segmentation, Market Aggregation, Basis for segmentation, Segmentation of Consumer. Targeting: Meaning, Basis for identifying target customers, Target Market Strategies. Positioning: Meaning, product differentiation strategies, tasks involved in positioning. Branding: Concept of Branding, Brand Types, Brand equity, Branding Positioning.

Unit 3 (8 hours)

Product Decisions: Concept, product hierarchy, new product development, diffusion process, Product Life cycle, Product mix strategies. Packaging / Labeling: Packaging as a marketing tool, requirement of good packaging, Role of labeling in packaging. Pricing Decisions: Pricing concepts for establishing value, Pricing Strategies-Value based, Cost based, Market based, Competitor based, New product pricing – Price Skimming & Penetration pricing

Unit 4 (8 hours)

Place Decision: Meaning, Purpose, Channel alternatives, Factors affecting channel choice, Channel design and Channel management decisions, Channel conflict, Retailing & Types of Retailers. Advertising: Advertising Objectives, Advertising Budget, Advertising Copy, AIDA model, Public Relation: Meaning, Objectives, Types, and Functions of Public Relations. Sales Promotion: Sales Promotion Mix, Kinds of promotion, Tools and Techniques of sales promotion, Push-pull strategies of promotion, Personal Selling: Concept, Features, Functions, Steps/process involved in Personal Selling, Direct Marketing: Meaning, Features, Functions, Growth and benefits of direct marketing, different forms.

Unit 5 (6 hours)

CRM: Meaning, Relationship Marketing Vs. Relationship Management, Types of Relationship Management, Significance of Customer Relationship Management. Global Marketing: current scenario, Global Marketing environment, Entry strategies, Global P's of Marketing., Recent trends and Innovation in Marketing- Green Marketing, Agile Marketing

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

S.No	Course Outcome	Bloom's taxonomy
1	CO1. Remember and Comprehend basic marketing concepts.	• Remembering (k1) • Knowledge (K 2)
2	CO2. Understand marketing Insights on application of basic marketing concepts.	• Synthesizing (K6) • Comprehending(K3)
3	CO3. Able to Apply and develop Marketing Strategies and Plans	• Applying (K 4)
4	CO4. Understand and Analyzing Business/ Consumer Markets and ability Identify & evaluate Market Segments and Targeting	• Analyzing (K 5)
5	CO5. Develop skills to understand the current global and digital aspect of marketing.	• Evaluating (K7)

Recommended Text Books :

1. Marketing Management: A South Asian Perspective - Kotler, Keller, Kevin 15/e, Pearson Education, 2016.
2. Marketing Management - Ramaswamy V. S. & Namakumari S, 6/e, Sage Publication India Pvt Ltd., 2018.
3. Marketing Management - Tapan Panda, 5/e, Excel Publication, 2007.
4. Fundamentals of Marketing Management - Etzel M. J, B J Walker & William J. Stanton, 14/e, McGrawHill Education Publishers, 2015.
5. Marketing: Asian EditionPaul Bainies, Chris Fill Kelly Page third edition, Oxford.

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DESIGN THINKING

Course Credit: 2 Contact Hours: 20

Course Objectives:

1. How to transform creative thinking into design thinking in every stage of your problem
2. How to apply design thinking to your real life problems / situations in order to evolve an innovative and workable solutions

Lecture Sessions on Design thinking (16 hours)

Unit 1- Innovation & Creativity: Meaning of Innovation and creativity. Difference between innovation and creativity, and its role in Industry and organizations, dynamics of creative thinking, Process of Design Thinking , implementing the process in driving innovation, Case Study

Unit 2- An exercise in design thinking & implementing design thinking through a workshop & exercise e studies in design thinking, design thinking process. Case Study

Unit 3- Design Thinking in Various Sectors (Health sector, Finance, Education, Infrastructure) Design thinking case studies in retail, design thinking case studies in banking, design thinking case studies in management decisions

S. No.	Course Outcome	Bloom's Taxonomy
1	CO1. Gain in depth knowledge about creative thinking and design thinking in every stage of problem	Knowledge (K2)
2	CO2. Applying design thinking to your real life problems / situations in order to evolve an innovative and workable solutions	Applying (K4)
3	CO3. Understand and implement design thinking to your real life problems / situations in order to evolve an innovative and workable solutions	Synthesizing (K6)

Books are recommended for the subject design Thinking

1. Design Thinking by Michael G Luchs, K Scott Swan, Abbie Griffin (WILEY)
2. The Design Thinking by Patrick , Michael Lewrick, Larry Leifer (WILEY)
3. The Art of Creative Thinking by Rod Judkins
4. Design Thinking - Strategic innovations by IRIS

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BUSINESS COMMUNICATION

Course Credits: 3

Contact Hours: 40

Course Objectives

1. To understand business communication strategies and principles for effective communication in domestic and international business situations.
2. To understand and appropriately apply modes of expression, i.e., descriptive, expositive, narrative, scientific, and self-expressive, in written, visual, and oral communication.
3. To develop the ability to research and write a documented paper and/or to give an oral presentation.
4. To develop the ability to communicate via electronic mail, Internet, and other technologies for presenting business messages.
5. To understand and apply basic principles of critical thinking, problem solving, and technical proficiency in the development of exposition and argument.

UNIT I : (8 Hours)

Introduction: Role of communication – defining and classifying communication – purpose of communication – process of communication –characteristics of successful communication – importance of communication in management – communication structure in organization – communication in crisis barriers to communication. Case Studies

UNITII: (8 Hours)

Oral communication: What is oral Communication – principles of successful oral communication –what is conversation control – reflection and empathy: two sides of effective oral communication – effective listening – non – verbal communication. Written communication: Purpose of writing – clarity in writing – principles of effective writing – approaching the writing process systematically: The 3X3 writing process for business communication: Pre writing – Writing – Revising – Specific writing features – coherence – electronic writing process.

UNITIII: (8 Hours)

Business letters and reports: Introduction to business letters – writing routine and persuasive letters – positive and negative messages- writing memos – what is a report purpose, kinds and objectives of report writing. Presentation skills: What is a presentation – elements of presentation – designing a presentation. Advanced visual support for business presentation types of visual aid

UNITIV: (8 Hours)

Employment communication: Introduction – writing CVs – Group discussions – interview skills Impact of Technological Advancement on Business Communication networks – Intranet – Internet – e mails – SMS – teleconferencing – video conferencing. Case Studies

UNITV : (8 Hours)

Group communication: Meetings – Planning meetings – objectives – participants – timing – venue of meetings – leading meetings. Media management – the press release press conference – media interviews Seminars – workshop – conferences. Business etiquettes. Case Studies

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Course Outcomes

Upon successful completion of this course, the student should be able to:

S. No.	Course Outcome	Bloom's Taxonomy
1	CO1. Apply business communication strategies and principles to prepare effective communication for domestic and international business situations.	Applying (K4)
2	CO2. Analyse ethical, legal, cultural, and global issues affecting business Communication.	Analyse (K5)
3	CO3. Develop an understanding of appropriate organizational formats and channels used in business communications	Knowledge (K2)
4	CO4. Gaining an understanding of emerging electronic modes of communication.	Comprehending(K3)
5.	CO5. Developing effective verbal and non verbal communication skills.	Remembering(K1)/ Applying (K4)

Suggested Readings:

1. Bovee&Thill – Business Communication Essentials A Skill – Based Approach to Vital Business English. Pearson.
2. Kulbhushan Kumar & R.S. Salaria, Effective Communication Skills, Khanna Publishing House, Delhi
3. Bisen&Priya – Business Communication (New Age International Publication)
4. Kalkar, Suryavanshi, Sengupta-Business Communication(Orient Blackswan)
5. Varinder Bhatia, Business Communications, Khanna Publishing House
6. Business Communication: Skill, Concepts And Applications – P D Chaturvedi, MukeshChaturvedi Pearson Education.
7. AshaKaul, Business Communication, Prentice Hall of India.

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IT SKILLS LAB-1

Course Credit: 3

Contact Hours: 40

Course Objectives

1. To provide knowledge about the functioning of computers and its uses for managers
2. To provide hands on learning on Internet and its applications
3. To provide hands on learning on Word processing software
4. To provide hands on learning of applications on Spreadsheet software
5. To provide hands on learning on Presentation software

UNIT I (05 hours) Conceptual Framework

Hardware: (a) Input devices - keyboard, printing devices, voice speech devices, scanner, MICR, OMR, Bar code reader, digital camera etc. (b) Output devices - Visual Display UNIT, printers, plotters (c) Storage Devices – Magnetic storage devices, Optical storage devices, Flash Memory.

Software: Types of software with examples; Introduction to languages, compiler, interpreter and Assembler, Operating System Functions, Types and Classification, Elements of GUI based operating system. Network and Internet: Types of computer networks (LAN, WAN and MAN), Netiquettes, Basic services over Internet like WWW, FTP, Telnet, Gopher, URL, Domain names, Web Browsers, Multimedia and its applications: Concepts of Text, Graphics, Animation, Audio, Images, Video. Multimedia Application in Education, Entertainment, Marketing. Names of common multimedia file formats,

UNIT II : Windows and Users Interface (Lab Work)- 7 hours

Windows operating System: Introduction and characteristics, Elements of GUI. Using Mouse, My Computer Icon, The Recycle Bin, Status Bar, Start and Menu & Menu-selection, Running an Application, Windows Explorer: Viewing of File, Folders and Directories Creating and Renaming of files and folders Opening and closing of different Windows, Windows Setting: Control Panels, Wall paper and Screen Savers Setting the date and Sound. Concept of menu, Using Help, Using right Button of the Mouse, Creating Short cuts, Basics of Window Setup, Notepad, Window Accessories

UNIT III: Word Processor Software (Lab Work) – 8 hours

Word processing concepts: Opening, Saving, Closing the file, Opening an existing document, Selecting text, Editing text, Finding and replacing text, printing documents, Creating and Printing Merged Documents, Character and Paragraph Formatting, Page Design and Layout. Editing and Profiling Tools: Checking and correcting spellings. Using Graphics, Tables, Charts, Document Templates and Wizards.

UNIT IV: Spreadsheet Software (Lab Work) – 10 hours

Spreadsheet Package Spreadsheet: Concept and Working Interface, Creating, Saving and Editing a Workbook, Inserting, Deleting Work Sheets, entering data in a cell / formula Copying and Moving from selected cells, handling operators in Formulae. Functions in Spreadsheet: Mathematical, Logical, statistical, text, financial, Date and Time functions, Using Function Wizard. Formatting a Worksheet and Cell: changing data alignment, changing date, number, character or currency format, changing font, adding borders and colors. Printing worksheets, Charts and Graphs – Creating, Previewing, and Modifying Charts. Integrating word processor, spread sheets, web pages.

UNIT V: Presentation Software (lab Work) – 8 hours

Interface of the Presentation Package: Creating, Opening and Saving Presentations, Professional Look of

Notes Pages and Handouts, Drawing and Working with Objects, Adding Clip Art and other pictures, Designing Slide Shows, Running and Controlling a Slide Show, Printing Presentations.

Course Outcomes

Upon successful completion of this course, the student should be able to:

S. No.	Course Outcome	Bloom's Taxonomy
1	CO1. Gain in depth knowledge about the functioning of computers and its uses for managers	Knowledge (K2)
2	CO2. Learn to use Internet and its applications	Applying (K4)
3	CO3. Understand and implement Word processing software	Synthesizing (K6)
4	CO4. Learn applications on Spread sheet softwares	Applying (K4) Knowledge (K2)
5	CO5. Analyse and learn Presentation software	Analyse (K5)

Suggested Readings

1. Nasib Singh Gill – Handbook of Computer Fundamentals, Khanna Publishing House, Delhi
2. Shrivastava-Fundamental of Computer& Information Systems (Wiley Dreamtech)
3. Leon A and Leon M - Introduction to Computers (Vikas, 1st Edition).
4. ITL ESL – Introduction to Information Technology (Pearson, 2nd Edition).
6. Introduction to Computers, Norton P. (TATA McGraw Hill)
7. Leon - Fundamentals of Information Technology, (Vikas)
8. Satish Jain-BPB's Computer Course Windows 10 with MS Office 2016 (BPB)
9. Linda Foulkes- Learn Microsoft Office 2019: A comprehensive guide to getting started with Word, PowerPoint, Excel, Access, and Outlook (Packt Publishing Limited)

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MINI PROJECT -1

Course Credit -2

Course Objective-

1. To develop an innovative idea for product or services in form of a project report.
2. To understand importance and relevance of innovative idea, its feasibilities and detail descriptions.

Project/Practical work / Seminar

In first semester, the students are required to develop an innovative idea for product or services and a project report to be prepared on that idea under the guidance of faculty member. Report will be prepared individually and this report will consist of importance and relevance of innovative idea, its feasibilities and detail descriptions. The report will be evaluated by one external examiner appointed by university. Student has to present his output through a seminar.

No.	Course Outcome	Bloom's Taxonomy
1	CO1. Gain in depth knowledge on innovative idea for product or services in form of a project report.	Knowledge (K2)
2	CO2. To apply innovative idea, its feasibilities and detail descriptions.	Applying (K4)

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Semester II

Business Environment & Legal Aspect of Business

Course Credit: 3

Contact Hours: 40

Course Objectives:

1. The basic objective of the course is to develop understanding and provide knowledge about business environment to the management students.

2. To promote basic understanding on the concepts of Business Environment and international business environment.

3. To provide basic understanding of law of contract

4. To impart basic understanding of provisions of Companies Act concerning incorporation and regulation of business organizations.

5. To appraise the students on the leading practical application oriented case studies – relevant and updated and analyzing case laws in arriving at conclusions facilitating business decisions.

Unit I - (10Hrs)

Introduction to Micro Environment –
Meaning of Business & Business Environment,, Types of Business Organizations , SWOT analysis , Types of Environment-Internal to the Enterprise (Value System, Management Structure and Nature, Human Resource, Company Image and Brand Value, Physical Assets, Facilities, Research & Development, Intangibles, Competitive Advantage), External to the Enterprise , Micro- Suppliers, Customers, Market Intermediaries; Macro- Demography, Natural, Legal & Political, Technological,) Michael Porter's Five Forces Analysis, Competitive Strategies
Unit II - (6 Hrs)

Macro Cont: Economic, Socio-Cultural, Competitive & International Environment –
Economy, Competition, Socio-cultural and International); Business Environment with reference to Global Integration; Comparative Analysis of Business Environment: India and Other Countries , Factors affecting international business environment, Business Policy : LPG model & International forces in business.
UNIT- III (8 hrs)

Law of Contract: Definition, essentials and types of contracts, offer definition and essentials, acceptance – definition and essentials, consideration – definition and essentials, exceptions to the rule, no consideration, no contract, doctrine of privity of contract, capacity of parties, free consent, quasi contract, legality of object, performance of contract, termination of contract, remedies for breach of contract.
Sale of Goods Act: Essentials, sale v/s agreement to sell. Condition v/s warranties, rights of unpaid seller
UNIT IV (8hrs)

Companies Act Definition, characteristics and kinds of companies, steps in formation of company. Memorandum of Association, Articles of Association, prospectus. Directors: appointment, power,

UNITV (8 hrs)

Consumer Protection Act: Definitions - Aims and objectives, Consumer protection councils, Redressal agencies and penalties for violation.

The Information Technology Act: Definition, Digital Signature, Electronic Governance, Attribution, Acknowledgment and Dispatch of Electronic Records, Sense Electronic Records and Sense Digital Signatures, Regulation of Certifying Authorities, Digital Signature Certificates, Duties of Subscribers, Penalties and Offences.

S. No.	Course Outcome	Bloom's Taxonomy
1	CO1) Develop understanding and fundamental knowledge about business environment	Remembering (k1) Knowledge (K 2)
2	CO2) Develop understanding on the concepts of Business Environment and international business environment.	K2 Knowledge
3	CO3) Develop basic understanding of law of contract	K2 Knowledge
4	CO4) understanding of provisions of Companies Act concerning incorporation and regulation of business organizations	K2 Knowledge
5	CO5) Able to analyze case laws in arriving at conclusions facilitating business decisions.	K4 Applying K5 Analysing

Suggested Readings

1. Business Environment ---Francis Cherunilam, Himalaya Publishing House
2. Business Environment: Test and Cases , PAUL, Mc Graw Hill Education , 3rd Ed.
3. V. Neelamegam – Business Envirnoment (VrindaPublications , 2nd Edition)
4. Shaikh & Saleem - Business Environment (Pearson, 2nd Edition)
5. International Business Environment—Ian Brooks, Jamie Weatherstom and GrahmWilkinson
6. Kuchhal M.C. - Business Law (Vikas Publication)
7. Gulshan S.S. - Business Law Including Company Law (Excel Books)
8. N D Kapoor – Elements of Mercantile Law – Sultan Chand-2014.

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HUMAN RESOURCE MANAGEMENT

Course Credit: 3 Contact Hours: 40

Course Objectives: In this course the students will learn the basic concepts and frameworks of Human Resource Management (HRM) and understand the role that HRM has to play in effective business administration. It will provide an insight as to how to use Human Resource as a tool to implement strategies.

UNIT I: (7 Hours)

Essentials of HRM: Functions of HRM, HRM vs.HRD, Strategic HRM: Meaning and Roles in Strategy formulation and implementation, Barriers to strategic HRM, Linking HR strategy with business strategy, Roles of HR Manager, roles of HR in merger and acquisitions, Technology & HR and changing roles of HR due to technology, HRM linkage with TQM & productivity. Case Studies

UNIT II: (8 Hours)

Human Resource Planning and Employee Hiring : Meaning of job Analysis, job design, Human Resource Planning, methods demand forecasting for manpower planning, factors influencing HRP, Employee hiring- methods of Recruitment, Employee selection, process of employee selection, recent trends in recruitment. Case Studies

UNIT III: (8 Hours)

Employee Training & Development: Meaning importance of Training, types and methods and types of training, career planning, promotion, transfer, demotion and separation, Performance Appraisal: Meaning and types of appraisal, Job Evaluation: Meaning and methods of job evaluation. Case Studies

UNIT IV: (9 Hours)

Compensation Management and Employee Relations: Introduction to compensation management, Components and structure of employee compensation, Factors affecting employee compensation, Employee incentive schemes, and recent trends in compensations management, Meaning of employee relation and industrial relations. Case Studies

UNIT V: (8 Hours)

Employee Safety/ Health and International Human Resource Management: Needs and leagal provision of employee health, measures to promote employee health , purpose of employee safety, accidents: causes & prevention, effective safety management ,& legal provisos. basic principles governing International Human Resource Case Studies

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COURSE OUTCOME

S. No.	Course Outcome	Bloom's Taxonomy
1	CO1. Synthesize the role of human resources management as it supports the success of the organization including the effective development of human capital as an agent for organizational change.	K6 Synthesizing
2	CO2. Demonstrate knowledge of laws that impact behaviour in relationships between employers and employees that ultimately impact the goals and strategies of the organization.	K2 Knowledge
3	CO3. Understand the role of employee benefits and compensation as a critical component of employee performance, productivity and organizational effectiveness.	K3 Comprehending
4	CO4.Show evidence of the ability to analyze, manage and problem solve to deal with the challenges and complexities of the practice of collective bargaining.	K5Analysing
5	CO5. Demonstrate knowledge of practical application of training and employee development as it impacts organizational strategy and competitive advantage.	K2 Knowledge K4 Applying

Suggested Readings

1. V.S.P.Rao, Human Resource Management (Text and Cases) Himalaya Publications, Thirteenth Edition.
2. Durai Praveen, Human Resource Management Pearson Publication, 2nd Edition.
3. Gary Dessler and BijuVarkkeyHuman Resource Management, Person Publication, 2013, 14th Edition.
4. SeemaSanghi, Human Resource Management, VikasPubllications, 2014, 5th Edition.
5. K. Aswathappa, Human Resource Management, McGraw Hill Education, 2013, 7th Edition.

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BUSINESS RESEARCH METHODS

Course Credit: 3

Contact Hours:40

Course objectives

1. Understand the concept / fundamentals of research and their types.
2. Understand the practical application of various research techniques.
3. Understand the importance of scaling & measurement techniques and sampling techniques
4. Understand the importance of coding, editing, tabulation and analysis in doing research.
5. Understanding and applying the concept of statistical analysis which includes ANOVA technique and technique of report writing.

Unit 1 (8 Sessions)

Research: – Definition, Meaning, Importance types and Qualities of Research; Research applications in functional areas of Business, Emerging trends in Business research.

Research & the Scientific Method: Characteristics of scientific method. Steps in Research Process

Concept of Scientific Enquiry: – Formulation of Research Problem – Management Question – research Question – Investigation Question

Research Proposal – Elements of a Research Proposal, Drafting a Research Proposal, evaluating a research proposal.

Unit 2 (8 Sessions)

Research design: Concept, Features of a good research design, Use of a good research design; Qualitative and Quantitative research approaches, Comparison – Pros and Cons of both approaches.

Exploratory Research Design: Concept, Types: Qualitative techniques – Projective Techniques, Depth Interview, Experience Survey, Focus Groups, Observation.

Descriptive Research Designs: Concept, types and uses. Concept of Cross-sectional and Longitudinal Research

Experimental Design: Concept of Cause, Causal relationships, Concept of Independent & Dependent variables, concomitant variable, extraneous variable, Treatment, Control group.

Unit 3 (6 Sessions)

Scaling & measurement techniques: Concept of Measurement: Need of Measurement; Problems in measurement in management research – Validity and Reliability. Levels of measurement – Nominal, Ordinal, Interval, Ratio. Attitude Scaling Techniques: Concept of Scale – Rating Scales viz. Likert Scales, Semantic Differential Scales, Constant Sum Scales, Graphic Rating Scales – Ranking Scales – Paired comparison & Forced Ranking – Concept and Application.

Unit 4 (6 Sessions)

Sampling:Basic Concepts: Defining the Universe, Concepts of Statistical Population, Sample, Characteristics of a good sample. Sampling Frame (practical approach for determining the sample frame expected), Sampling errors, Non Sampling errors, Methods to reduce the errors, Sample Size constraints, Non Response.

Probability Sample: Simple Random Sample, Systematic Sample, Stratified Random Sample, Area Sampling & Cluster Sampling

Non Probability Sample: Judgment Sampling, Convenience Sampling, Purposive Sampling, Quota Sampling & Snowballing Sampling methods. Determining size of the sample – Practical considerations in sampling and sample size, sample size determination.

Unit 5 (8 Sessions)

Data Analysis: Editing, Coding, Tabular representation of data, frequency tables, Construction of frequency distributions, Graphical Representation of Data: Appropriate Usage of Bar charts, Pie charts, Histogram.

Hypothesis: Qualities of a good Hypothesis –Framing Null Hypothesis & Alternative Hypothesis. Concept of Hypothesis Testing – Logic & Importance. Analysis of Variance: One way and two way Classifications.

Mechanism of Report Writing- Report Preparation: Types, Report Structure: preliminary section, main report, interpretation of results, suggestions and recommendations, limitations of the study, Report formulation.

COURSE OUTCOME

Course Outcomes	Blooms Taxanomy
CO1. Knowledge of concept / fundamentals for different types of research.	• Knowledge (K 2)
CO2. Applying relevant research techniques.	• Remembering (K1) • Applying (K 4)
CO3. Understanding relevant scaling & measurement techniques and should use appropriate sampling techniques	• Comprehending (K 3) • Applying (K 4)
CO4.Synthesizing different techniques of coding, editing, tabulation and analysis in doing research.	• Analyzing (K 5) • Synthesizing (K6)
CO5.Evaluating statistical analysis which includes ANOVA technique and prepare research report.	• Evaluating (K7)

Suggested Readings

1. Research Methodology, Deepak Chawla, NeenaSondhi, Vikas Publication
2. Business Research Methods, Naval Bajpai, Pearson Education
3. Research Methodology, C R Kothari, New Age International.
4. Business Research Methods by Donald Cooper & Pamela Schindler, TMGH, 9th Edition.
5. Business Research Methods by Alan Bryman & Emma Bell, Oxford University Press, 2ndEdition.
6. Business Research Methods by T N Srivastava & Shailaja Rao, TMH Publication, 2ndEdition.

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FINANCIAL MANAGEMENT AND CORPORATE FINANCE

Course Credit: 3

Contact Hours: 40 Hrs

Course Objectives: This course is intended to introduce the basic theory, concepts and practical applications in corporate finance and to enable students to analyse various corporate decisions. The course objectives are outlined below:

1) To understand the fundamentals, various models and agency problems of Corporate Finance.
2) To acquire knowledge about various techniques used for analysing various long-term projects.
3) To have an understanding about various capital structure techniques and selecting best source of finance.
4) To have an understanding of various dividend models and its applicability.
5) To acquaint students about corporate valuation in mergers and acquisitions.

UNIT I (6 Hrs)

Introduction to Finance & Corporate Finance: Corporate Finance & its scope, Corporate Governance and Agency Problem, Corporate valuation Models: Asset Based Valuation Model, Earning based Valuation Model, Cash flow-based Model, CAPM Model, APT, EVA Analysis, Introduction to start-up finance, Financial Decisions, Time Value of Money.

UNIT II (10 Hrs)

Investment and Financing Decision: Concept of Opportunity Cost, Cost of Debenture, Preference and Equity capital, Composite Cost of Capital, Cash Flows as Profit and components of Cash Flows, Capital Budgeting Decisions, Calculation of NPV and IRR, Excel Application in Analysing Projects.

UNIT III (10 Hrs)

Financial Decision: Capital Structure, Relevance and Irrelevancy theory, Leverage analysis – financial, operating and combined leverage along with its implications, EBIT EPS Analysis, Point of Indifference.

UNIT IV (10 Hrs)

Dividend Relevance: Factors affecting Dividend Policy, Forms of Dividends, Types of Dividend Policies, Dividend Models: Walter and Gordon Model, Miller- Modigliani (MM) Hypothesis.

UNIT V (4 Hrs)

Mergers and Acquisition: Introduction, Exchange Ratio, Synergy Benefits, Post Merger EPS, Post Merger Price of share, Required rate of return of merged company, De-Merger.

Course Outcome: After successful completion of this course students will be able:

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S.No	Course Outcome	Bloom's Taxonomy
1.	CO1 Understand the different basic concept / Models of Corporate Finance and Governance	• Knowledge (K2) • Remembering(K1)
2.	CO2 Understand the practical application of time value of money and evaluating long term investment decisions	• Analyzing (K5) • Evaluating(K7)
3.	CO3 Develop analytical skills to select the best source of capital, structure and leverage.	• Analyzing(K5) • Synthesizing(K6)
4.	CO4 Understand the use and application of different models for firm's optimum dividend pay-out.	• Comprehending(K3) • Applying(K4)
5.	CO5 Understand the recent trends of mergers and acquisition and its valuation	• Comprehending(K3) • Synthesizing (K6)

Suggested Readings

1) Khan and Jain - Financial Management (Tata McGraw Hill, 7th Ed.)
2) Pandey I M - Financial Management (Vikas, 11th Ed.)
3) William HakkaBettnerCarcello- Financial and Management Accounting (TMH-16th Ed.)
4) Sheebakapil-Fundamental of financial management (Wiley,2015)
5) Prasanna Chandra - Fundamentals of Financial Management (TMH, 9th Ed.)
6) Bark DemazoThampy- Financial Management (Pearson,2nd Ed.)
7) R P Rustagi - Financial Management (Galgotia, 2000, 2nd revised ed.)
8) Damodaran, A., Applied Corporate Finance, 3rd Edition, Wiley, 2012
9) Ravi.M Kishore – Financial Management (Taxman, 7th Ed)
10) Fundamentals to Financial Management, Brigham & Houston, 14/e, Cengage Learning
11) Van Horne - Financial Management and Policy (Prentice hall, 2003, 12th Ed.)

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OPERATIONS MANAGEMENT

Course Credit: 3

Contact Hours: 40

Course Objectives:-

1. To understand the role of Operations in overall Business Strategy of the firm.
2. To understand the application of operations management policies and techniques to the service sector as well as manufacturing firms.
3. To identify and evaluate the key factors and their interdependence of these factors in the design of effective operating systems.
4. To understand the trends and challenges of Operations Management in the current business environment.
5. To familiarize the students with the techniques for effective utilization of operational resources and managing the processes to produce good quality products and services at competitive prices.

UNIT –I (7 sessions) Production Concepts:
Introduction, meaning, nature and scope of production and operations management. Difference between production and operations management. Productivity, factors affecting productivity and productivity measurement. Work study— Method study and work measurement. Production Technology – Types of manufacturing processes. Plant location and types of plant layout.

UNIT –II (8 sessions) Operations Concepts:
Services scenario in India, difference between product and service, characteristics of services, classification of services, product and service design, factors affecting service design, service designing process, service blueprinting, service capacity planning. Dimensions of quality in services, understanding service quality gap, measuring service quality using SERVQUAL model. Case Studies

UNIT-III (10 sessions) Material and Inventory Management:
Types of production planning, process of production planning and control (PPC) – routing, scheduling and loading. Master production schedule, aggregate production planning. Types of inventories, inventory control techniques- EOQ, ABC, VED, FSN, HML and SDE (Simple numerical problems on Inventory control techniques). Just-in-time (JIT) and KANBAN. Case Studies

UNIT-IV (8 sessions) Supply Chain Management:
Overview of supply chain management, conceptual model of SCM, supply chain drivers, measuring supply chain performance, core and reverse supply chain, global supply chain, inbound and outbound logistics, Bullwhip effect in SCM, push and pull systems, lean manufacturing, agile manufacturing, role of IT in SCM. Demand forecasting in supply chain—
Simple moving average method, weighted moving average method, linear regression and

UNIT-V (7 sessions) Productivity and Quality:

TQM, Deming's 14 principles, Juran's quality triology, PDCA cycle, KAIZEN, quality circles, 7QC tools and its 7 new management tools, ISO 9000-2000 clauses, six sigma, Total Productive Maintenance (TPM), 5S. Case Studies

Expected Course Outcomes:

S.No.	Course Outcomes	Bloom's Taxonomy
CO1.	Understand the role of Operations in overall Business Strategy of the firm - the application of OM policies and techniques to the service sector as well as manufacturing firms.	• Knowledge (K2) • Comprehending (K 3) • Remembering (K1)
CO2.	Understand and apply the concepts of Material Management, Supply Chain Management and TQM perspectives.	• Knowledge (K2) • Remembering (K1) • Applying (K4)
CO3.	Identify and evaluate the key factors and their interdependence of these factors in the design of effective operating systems.	• Comprehending (K3) • Applying (K4)
CO4.	Analyze / understand the trends and challenges of Operations Management in the current business environment.	• Analyzing (K5)
CO5.	Apply techniques for effective utilization of operational resources and managing the processes to produce good quality products and services at competitive prices.	• Synthesizing (K6) • Evaluating (K7)

Suggested Readings:-

1. Aswathappa, K. & Bhat, K.S.-- Production and Operations Management (Himalaya Publishing House, 2nd Edition)
2. Chase, R.B., Shankar, R. & Jacobs, F.R. -- Operations & Supply Chain Management (Tata McGraw Hill, 14th Edition)
3. Chunawalla, S.A. & Patel, D.R. – Production & Operations Management (Himalaya Publishing House, 9th Edition)
4. Chary, S.N. -- Production and Operations Management (Tata McGraw Hill, 6th Edition)
5. Charantimath, P.M. – Total Quality Management (Pearson Education, 3rd Edition)
6. Bedi, Kanishka – Production & Operations Management (Oxford University Press, 3rd Edition)
7. Adam, Everett E. & Ebert, Ronald J. – Production and Operations Management (Prentice Hall, 5th Edition)
8. Gopalakrishnan, P. & Sundaresan, M. – Materials Management (Prentice Hall of India)

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QUANTITATIVE TECHNIQUES FOR MANAGER

Credit 3

Contact Hour: 40

Course Objectives

1. Understand the importance of the use of OR application in decision Making environment
2. To formulate LPP and Obtain Graphical Solutions & Acquire General idea of the Simplex method.
3. To understand and solve transportation & assignment models.
4. To know optimal sequence model and understand concepts of queuing theory.
5. To identify right time for replacement of equipment and understand project management techniques

Unit I (6 Sessions)-Operations Research & Decision Making Environments

Operations Research:- Uses, Scope and Applications of Operation Research in managerial decision-making .*Decision-making environments:*- Decision-making under certainty, uncertainty and risk situations; Decision tree approach and its applications.

Unit II (10 Sessions)-Linear Programming Problem & Transportation Problem

Linear programming: Mathematical formulations of LP Models for product-mix problems; graphical and simplex method of solving LP problems; duality.

Transportation problem: Various methods of finding Initial basic feasible solution-North West Corner Method, Least Cost Method & VAM Method and optimal solution-Stepping Stone & MODI Method, Maximization Transportation Problem

Unit III (8 Sessions)-Assignment model & Game Theory

Assignment model: Hungarian Algorithm and its applications, Maximization Assignment Problem.

Game Theory: Concept of game; Two-person zero-sum game; Pure and Mixed Strategy Games; Saddle Point; Odds Method; Dominance Method and Graphical Method for solving Mixed Strategy Game.

Unit IV (6 Sessions)-Sequencing & Queuing Theory

Sequencing Problem: Johnsons Algorithm for n Jobs and Two machines, n Jobs and Three Machines, Two jobs and m - Machines Problems.

Queuing Theory: Characteristics of M/M/I Queue model; Application of Poisson and Exponential distribution in estimating arrival rate and service rate; Applications of Queue model for better service to the customers.

Unit V (6 Sessions)-Replacement Problem & Project Management

Replacement Problem: Replacement of assets that deteriorate with time, replacement of assets which fail suddenly.

Project Management: Rules for drawing the network diagram, Applications of CPM and PERT techniques in Project planning and control; crashing of operations.

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Course Outcomes

CO1	Be able to understand the characteristics of different types of decision-making environments and the appropriate decision making approaches and tools to be used in each type.	Knowledge (K2)/ Remembering (K1)
CO2	To formulate linear programming problem and to find optimal solution by graphical simplex method.	Knowledge (K2)
CO3	Be able to build and solve Transportation Models and Assignment Models also to solve game theory problems by understanding pure and mix strategies.	Applying (K 4)
CO4	To assign optimal sequence of difference jobs on different machines and develop understanding of queuing theory concepts.	Applying (K 4)
CO5	To implement replacement of equipments at right time and able to implement project management concepts like CPM, PERT to reduce cost and time.	Synthesizing (K6)/ Evaluating (K7)

Suggested Readings

1. R. Panneerselvam - Operations Research (PHI, 2nd Edition)
2. Sharma J K - Operations Research (Pearson, 3rd Edition
3. Apte-Operation Research and Quantitative Techniques (Excel Books)
4. S Kalawathy-Operation Research (Vikas IVth Edition)
5. Natarajan- Operation Research(Pearson)
6. Singh & Kumar—Operation Research(UDH Publisher edition 2013)
7. Taha Hamdy - Operations Research - An Introduction (Prentice-Hall, 9th edition)
8. Vohra - Quantitative Techniques in Management (Tata McGraw-Hill, 2nd)
9. Kothari - Quantitative Techniques (Vikas 1996, 3rd Edition).

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DIGITALMARKETING AND E COMMERCE

COURSE CREDIT: 3 HOURS: 40

Course Objectives

1. To help Student understand the concept of Digital Marketing & E-commerce in today's scenario
2. To enable student in creating and maintaining a good website and blog posts.
3. To make student understand the importance of SEO and Email Marketing in today's modern world
4. To understand the functioning and importance of Social Media Marketing via various platforms
5. To understand various Analytics tools of online marketing

UNIT 1 (8 Hours)

Introduction to Digital Marketing & Website and Blog Development: Introduction to Digital Marketing and its Significance; Traditional Marketing Vs Digital Marketing; Digital Marketing Process; The contemporary digital revolution, digital transformation framework. Types of websites, Keywords, Understanding Domain and Webhosting, Building Website/Blog using CMS WordPress, Using WordPress Plug-ins; Blog Creation: Including Headlines, Links, Posts ; Using various plug-ins like Elimentor

UNIT 2 (8 Hours)

SEO& Email-Marketing: Introduction to SEO; SEO Keyword Planner Tools; On Page SEO Techniques: Indexing and Key Word Placement, Content Planning & Optimization, Display Advertising, Various SEO Plug-in, Off –Page SEO Techniques; Email Marketing- Introduction and Significance, campaigns using Mail Chimp; Email Marketing Strategy and Monitoring.

UNIT 3 (8 Hours)

SEM & Social Media Marketing: Introduction to SEM, Mobile Marketing, Video Marketing on YouTube. Introduction to Social Media Marketing: Facebook, Instagram, Linked-in, Twitter, Google G Suit and online marketing campaigns on theses Social Media platforms. Content Marketing, Content creation process, Influencer marketing.

UNIT 4(6 Hours)

Using Marketing Strategies & Analytics Tools: Understanding Digital marketing Strategies, Using Marketing analytics tools to segment, target, position; Online PR and reputation management, Digital Marketing Strategies and its ROI. Using Google Analytics and other social media analytics tools. Using Apps and Gamification.

UNIT 5 (6 Hours)

Applications of E-Commerce: Introduction, History of Electronic Commerce, Advantages and Disadvantage of E-commerce, Roadmap of e-commerce in India, E-business Models Based on the Relationship of Transaction Parties, e-commerce Sales Life Cycle (ESLC) Model, Electronic Payment Systems, Electronic Cash, Smart Cards and Electronic Payment Systems, Credit Card Based Electronic Payment Systems, Risks and Electronic Payment Systems, Electronic Data Interchange (EDI)

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Course Outcomes

CO1	Be able to understand the concept of Digital Marketing & E-commerce in today's scenario.	Knowledge (K2)/ Remembering (K1)
CO2	To able to create and maintain a good website and blog posts.	Applying (K 4)
CO3	Be able to understand and apply SEO and Email Marketing in today's modern world	Comprehending (K3) Applying (K4)
CO4	To apply the Social Media Marketing techniques via various platforms	Applying (K 4)
CO5	To implement various Analytics tools of online marketing	Synthesizing (K6)/ Evaluating (K7)

Suggested Readings:

1. Vandana, Ahuja; Digital Marketing, Oxford University Press India (November, 2015).
2. Seema Gupta; Digital Marketing, McGraw Hill Education; First edition (November 2017)
3. Ryan, Damian; Understanding Digital Marketing: marketing strategies for engaging the digital generation; Kogan Page (3rd Edition, 2014).
4. Ravi Kalakota :Frontiers of E Commerce (Pearson)

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MANAGEMENT INFORMATION SYSTEMS

Course Credit: 2 Contact Hours: 20

Course Objective

1. To help the students understand the importance of information management in business and management
2. To provide understanding about different types of information systems in business
3. To apply the theory and concepts in practical with help of software
4. To understand various security and ethical issues with Information Systems
5. To provide hands on learning of applications on Spreadsheet and database software

UNIT -1 (6 Hours)

Management Information Systems - Need, Purpose and Objectives, Contemporary Approaches to MIS, Information as a strategic resource, Use of information for competitive advantage, MIS as an instrument for the organizational change. Information Technology – Characteristics and emerging trends, IT Capabilities and their organizational impact, IT enabled services. Transaction Processing System: Characteristics and its importance

UNIT -II (6 Hours)

Information, Management and Decision Making - Attributes of information and its relevance to Decision Making, Types of information. Models of Decision Making - Classical, Administrative and Herbert Simon's Models. Management Support Systems: Decision Support Systems, Group Decision Support Systems, and Executive Information Systems.

UNIT -III (8 Hours)

Managing Data Resources- The need for data management, Challenges of data management, Data independence, Data redundancy, Data consistency, Data administration. Database Management System – Concepts and types of DBMS, Fields, Records, Table, View, Reports and Queries. Data warehouse and Data mining – Characteristics and uses of Data warehouse, Techniques of Data Mining, Business Intelligence

Database Management System (Lab): Creation of Table, View and Reports. Basics of SQL and running queries

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Course Outcomes

CO1	Be able to understand the importance of information management in business and management.	Knowledge(K2) / Remembering (K1)
CO2	To understand and formulate different types of information systems in business	Knowledge (K2)
CO3	Be able to apply the theory and concepts in practical with help of software	Applying (K 4)
CO4	To apply various security and ethical issues with Information Systems	Applying (K 4)
CO5	To synthesize applications on Spread sheet and database software	Synthesizing (K6)/ Evaluating (K7)

Suggested Readings

1. Management Information System – James 'O' Brian
2. Management Information Systems, Laudon and Laudon, 7th Edition, Pearson Education Asia
3. Management Information Systems, Jawadekar, Tata McGraw Hill
4. Analysis and Design of Information Systems, Rajaraman, Prentice Hall
5. Database Management Systems: A Business-Oriented Approach Using ORACLE, MySQL and MS Access, by Sotirios Zygiari
6. Computer Applications in Business (CBCS) by Dr. Sushil Kumar Sharma & Ms. Mansi Bansal (Taxmann)
7. Excel 2019 All-In-One: Master the new features of Excel 2019 / Office 365, Lokesh Lalwani (BPB)

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IT SKILLS LAB-2

Lab work 20 Hours

Course Objective

1. To develop pivot table and understand the validating & auditing techniques
2. To understand different charting techniques in MS Excel
3. To understand different formatting techniques in MS Excel

Unit I (Lab work on spreadsheet)

Pivot Table: Developing Pivot Table, Analyzing data using goal seek and solver, Scenarios Create named scenarios. Show, edit, delete scenarios, Creating a scenario summary report. Validating and Auditing: Set, edit validation criteria for data entry in a cell range like: whole number, decimal, list, date, time, Trace precedent, dependent cells. Identify cells with missing dependents. Creating applications in Spreadsheet and Macros.

Unit II (Lab work on spreadsheet) 15 Hours

Creating and formatting Charts: Understanding chart types, column chart, bar chart, line chart, pie chart, XY Scatter chart , Area chart, surface chart, bubble chart. Create a combined chart like: column and line, column and area. Change the chart type for a defined data series, Add, delete a data series in a chart, Re-position chart title, legend, data labels. Change scale of value axis: minimum, maximum number to display, major interval. Change display units on value axis without changing data source: hundreds, thousands, millions. Format columns, bars, pie slices, plot area, chart area to display an image.

References

Excel Data Analysis: Modeling and Simulation , Hector Guerrero (Springer)

COURSE OUTCOME

S. No.	Course Outcome	Bloom's Taxonomy
1	CO1. To gain knowledge of pivot table and understand the validating & auditing techniques	Knowledge (K2)
2	CO2. Learn to use different charting techniques in MS Excel	Applying (K4) Synthesizing (K6)
3	CO3. Learn to use different formatting techniques in MS Excel	Applying (K4) Knowledge (K2)

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MINI PROJECT -2

Course Credit: 2

Seminar by students

Objective –

1. To identify the issues challenge of the industry
2. To able to prepare report on the application of emerging technologies in the selected industry

In second semester, the students are required to take one industry as per his/her interest for analysis and preparing a project report. Preference should be given on the application of emerging technologies in the selected industry. It may consists of Fintech, Block chain, Financial Services, Data Science, Social Entrepreneurship or any other suitable area of interest. The report will be prepared individually. The report will be evaluated by one external examiner appointed by university.

COURSE OUTCOME

S. No.	Course Outcome	Bloom's Taxonomy
1	CO1. To gain knowledge of issues challenge of the industry	Knowledge (K2)
2	CO2. Learn to prepare report on the application of emerging technologies in the selected industry	Applying (K4) Synthesizing (K6)

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EVALUATION SCHEME & SYLLABUS
First Year
FOR

MASTER OF COMPUTER APPLICATION (MCA)
(Two Year Course)

As per
AICTE MODEL CURRICULUM
(Effective from the Session: 2020-21)

MCA (MASTER OF COMPUTER APPLICATION)
MCA FIRST YEAR, 2020-21

SEMESTER-I

S.No.	Subject Code	Subject Name	Periods			Sessional			ESE	Total	Credit
			L	T	P	CT	TA	Total			
1.	KCA101	Fundamental of Computers & Emerging Technologies	3	0	0	30	20	50	100	150	3
2.	KCA102	Problem Solving using C	3	1	0	30	20	50	100	150	4
3.	KCA103	Principles of Management & Communication	3	0	0	30	20	50	100	150	3
4.	KCA104	Discrete Mathematics	3	0	0	30	20	50	100	150	3
5.	KCA105	Computer Organization & Architecture	3	1	0	30	20	50	100	150	4
6.	KCA151	Problem Solving using C **Lab**	0	0	4	30	20	50	50	100	2
7.	KCA152	Computer Organization & Architecture **Lab**	0	0	3	30	20	50	50	100	2
8.	KCA153	Professional Communication **Lab**	0	0	2	30	20	50	50	100	2
		Total								**1050**	**23**

CT: Class Test **TA**: Teacher Assessment **L/T/P**: Lecture/ Tutorial/ Practical

SEMESTER-II

S.No.	Subject Code	Subject Name	Periods			Sessional			ESE	Total	Credit
			L	T	P	CT	TA	Total			
1.	KCA201	Theory of Automata & Formal Languages	3	0	0	30	20	50	100	150	3
2.	KCA202	Object Oriented Programming	3	1	0	30	20	50	100	150	4
3.	KCA203	Operating Systems	3	0	0	30	20	50	100	150	3
4.	KCA204	Database Management Systems	3	0	0	30	20	50	100	150	3
5.	KCA205	Data Structures & Analysis of Algorithms	3	1	0	30	20	50	100	150	4
6.	KCAA01	Cyber Security*	2	0	0	30	20	50	100	150	0
7.	KCA251	Object Oriented Programming **Lab**	0	0	3	30	20	50	50	100	2
8.	KCA252	DBMS **Lab**	0	0	3	30	20	50	50	100	2
9.	KCA253	Data Structures & Analysis of Algorithms **Lab**	0	0	4	30	20	50	50	100	2
		Total								**1200**	**23**

CT: Class Test **TA**: Teacher Assessment **L/T/P**: Lecture/ Tutorial/ Practical

*** Qualifying Non-credit Course**

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MASTER OF COMPUTER APPLICATION (MCA)

DR. A.P.J. ABDUL KALAM TECHNICAL UNIVERSITY, UTTAR PRADESH, LUCKNOW

EVALUATION SCHEME & SYLLABUS

FOR

MASTER OF COMPUTER APPLICATION (MCA)

(Two Year Course)

AS PER

AICTE MODEL CURRICULUM

[Effective from the Session: 2021-22]

MASTER OF COMPUTER APPLICATION (MCA)
MCA SECOND YEAR, 2021-22

SEMESTER-III

S. No.	Subject Code	Subject Name	Periods			Sessional			ESE	Total	Credit
			L	T	P	CT	TA	Total			
1.	KCA301	Artificial Intelligence	3	0	0	30	20	50	100	150	3
2.	KCA302	Software Engineering	4	0	0	30	20	50	100	150	4
3.	KCA303	Computer Network	3	1	0	30	20	50	100	150	4
4.		Elective – 1	3	0	0	30	20	50	100	150	3
5.		Elective – 2	3	1	0	30	20	50	100	150	3
6.	KCA351	Artificial Intelligence Lab	0	0	3	30	20	50	50	100	2
7.	KCA352	Software Engineering Lab	0	0	3	30	20	50	50	100	2
8.	KCA353	Mini Project**	0	0	4	30	20	50	50	100	2
		Total								**1050**	**23**

CT: Class Test **TA**: Teacher Assessment **L/T/P**: Lecture/ Tutorial/ Practical

SEMESTER-IV

S. No.	Subject Code	Subject Name	Periods			Sessional			ESE	Total	Credit
			L	T	P	CT	TA	Total			
1.		Elective – 3	3	0	0	30	20	50	100	150	3
2.		Elective – 4	3	0	0	30	20	50	100	150	3
3.		Elective – 5	3	0	0	30	20	50	100	150	3
4.	KCA451	Project	-	-	-	-	200	200	500	700	14
		Total								**1050**	**23**

CT: Class Test **TA**: Teacher Assessment **L/T/P**: Lecture/ Tutorial/ Practical

** The Mini Project (6 weeks) conducted during summer break after II semester and will be assessed during III semester. The Course will be carried out at the Institute under the guidance of a Faculty Members.

Elective-1	KCA011	Cryptography & Network Security
	KCA012	Data Warehousing & Data Mining
	KCA013	Software Project Management
	KCA014	Cloud Computing
	KCA015	Compiler Design

Elective-2	KCA021	Web Technology
	KCA022	Big Data
	KCA023	Simulation & Modeling
	KCA024	Software Testing & Quality Assurance
	KCA025	Digital Image Processing

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Syllabus

For

M.Tech. (Computer Science & Engineering)

(Effective from the Session: 2016-17)

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Duhai, Ghaziabad

Course structure and evaluation scheme for M.Tech Computer Science & Engineering
(Effective from the Session: 2016-17)

SEMESTER –I

S. No.	Subject Code	Name of Subject	Periods			Credit	Evaluation Scheme					Subject Total
							Theory			Practical		
							CT	TA	ESE	TA	ESE	
1	MTCS101	Foundation of Computer Science	3	0	0	3	20	10	70	-----	-----	100
2	MTCS102	Advanced Algorithm	3	0	0	3	20	10	70	-----	-----	100
3	MTCS01?	Departmental Elective I	3	0	0	3	20	10	70			100
4	MTCS02?	Departmental Elective II	3	0	0	3	20	10	70	-----	-----	100
5		Research Process & Methodology	3	0	0	3	20	10	70	-----	-----	100
6	MTCS151	Lab-I: Foundation of computer Science	0	0	3	2		-----	-----	20	30	50
7	MTCS152	Lab-II: Advanced Algorithm	0	0	2	1	-----	-----	-----	20	30	50
		Total				18						600

SEMESTER –II

S. No.	Subject Code	Name of Subject	Periods			Credit	Evaluation Scheme					Subject Total
							Theory			Practical		
							CT	TA	ESE	TA	ESE	
1	MTCS201	Multi Core Architecture and Programming Multi Core Architecture and Programming	3	0	0	3	20	10	70	-----	-----	100
2	MTCS202	Wireless Mobile Networks	3	0	0	3	20	10	70	-----	-----	100
3	MTCS03?	Departmental Elective III	3	0	0	3	20	10	70			100
4	MTCS04?	Departmental Elective IV	3	0	0	3	20	10	70	-----	-----	100
5	MTCS05?	Elective V	3	0	0	3	20	10	70	-----	-----	100
6	MTCS251	Lab-III: Wireless & Mobile Networks	0	0	3	2		-----	-----	20	30	50
7	MTCS252	Seminar-I	0	0	2	1	-----	-----	-----	20	30	50
		Total				18						600

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SEMESTER –III

S. No.	Subject Code	Name of Subject	Periods			Credit	Evaluation Scheme					Subject Total
							Theory			Practical		
			L	T	P		CT	TA	ESE	TA	ESE	
1	MTCS351	Seminar-II	0	0	6	3	-----	-----	-----	100	-----	100
2	MTCS352	Dissertation	0	0	30	15	-----	-----	-----	200	300	500
		Total				18	-----	-----	-----			600

SEMESTER –IV

S. No.	Subject Code	Name of Subject	Periods			Credit	Evaluation Scheme					Subject Total
							Theory			Practical		
			L	T	P		CT	TA	ESE	TA	ESE	
1	MTCS451	Dissertation(Final)	0	0	36	18	-----	-----	-----	200	400	600
		Total				18						600

Departmental Elective I

1. MTCS011: Software Requirements & Specifications
2. MTCS012: Software Process & Management
3. MTCS013: Cloud Computing
4. MTCS014: Embedded Systems
5. MTCS015: Advanced Database
6. MTCS016: Modeling and Simulation

Departmental Elective II

1. MTCS021: Sensor Network
2. MTCS022: Software Testing & Auditing
3. MTCS023: Real Time Systems
4. MTCS024: Data Warehousing & Data Mining
5. MTCS025: Genetic Algorithms
6. MTCS026: Neural Networks

Departmental Elective III-

1. MTCS031: Machine Learning
2. MTCS032: High Performance Networking
3. MTCS033: Software Metrics & Quality Assurance
4. MTCS034: Big Data Analytics
5. MTCS035: Cyber Security and Laws
6. MTCS036: Multimedia Systems

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Syllabus

For

M.Tech. (Thermal Engineering)

(Effective from the Session: 2016-17)

Dr. A.P.J. Abdul Kalam Technical University, Lucknow, Uttar Pradesh

COURSE STRUCTURE AND EVALUATION SCHEME FOR
M.TECH - THERMAL ENGINEERING
(EFFECTIVE FROM THE SESSION: 2016-17)

Semester -I

S. No.	Subject Code	Name of the Subject	Periods			Credit	Evaluation Scheme					Subject Total
							Theory			Practical		
			L	T	P		CT	TA	ESE	TA	ESE	
1	MTME 101	Simulation, Modelling & Analysis	3	0	0	3	20	10	70	--	--	100
2	MTTE 101	Advanced Thermal Engineering	3	0	0	3	20	10	70	--	--	100
3	MTTE 01?	Departmental Elective – I	3	0	0	3	20	10	70	--	--	100
4	MTTE 02?	Departmental Elective - II	3	0	0	3	20	10	70	--	--	100
5		Research Process & Methodology	3	0	0	3	20	10	70	--	--	100
6	MTME 151	Simulation Modeling & Analysis Lab	--	--	3	2	--	--	--	20	30	50
7	MTTE 151	Advanced Thermal Engineering Lab	--	--	2	1	--	--	--	20	30	50
		Total				18						**600**

Departmental Elective–I	MTTE 011	Alternative Fuels & Engine Pollution
	MTTE 012	Refrigeration & Air Conditioning
	MTTE 013	Advanced Fluid Mechanics
	MTTE 014	Gas Dynamics

Departmental Elective–II	MTTE 021	Turbo Machines
	MTTE 022	Cryogenic Engineering
	MTTE 023	Advanced I.C. Engines
	MTTE 024	Solar Energy Technology

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Semester –II

S. No.	Subject Code	Name of the Subject	Periods			Credit	Evaluation Scheme					Subject Total
			L	T	P		Theory			Practical		
							CT	TA	ESE	TA	ESE	
	MTTE 201	Advanced Heat & Mass Transfer	3	0	0	3	20	10	70	--	--	100
1	MTTE 202	Computational Fluid Dynamics	3	0	0	3	20	10	70	--	--	100
3		Departmental Elective-III	3	0	0	3	20	10	70	--	--	100
4		Departmental Elective-IV	3	0	0	3	20	10	70	--	--	100
5		Elective-V	3	0	0	3	20	10	70	--	--	100
6	MTTE 251	Advanced Heat & Mass Transfer Lab	--	--	3	2	--	--	--	20	30	50
7	MTTE 252	Seminar-I	--	--	--	1	--	--	--	50	--	50
		Total				18						**600**

Departmental Elective – III	MTME 031	Advanced Finite Element Analysis
	MTTE 031	Fuels, Combustion And Environment
	MTTE 032	Energy Management
	MTTE 033	Equipment Design For Thermal Systems

Departmental Elective – IV	MTME 041	Optimization Techniques & Design Of Experiments
	MTTE 041	Experimental Techniques In Fluid Flow & Heat Transfer
	MTTE 042	Convective Heat Transfer
	MTTE 043	Thermal And Nuclear Power Plants

Elective – V	MTTE 051	Thermal Measurements and Process Controls
	MTTE 052	Combustion Technology
	MTTE 053	Environmental Pollution & Its Control
	MTTE 054	Advanced Power Plant Engineering

Semester – III

S. No.	Subject Code	Name of the Subject	Periods			Credit	Evaluation Scheme					Subject Total
			L	T	P		Theory			Practical		
							CT	TA	ESE	TA	ESE	
1	MTTE 352	Seminar-II	0	0	6	3	--	--	--	100	--	100
2	MTTE 351	Dissertation	0	0	30	15	--	--	--	200	300	500
		Total				18						**600**

Semester – IV

S. No.	Subject Code	Name of the Subject	Periods			Credit	Evaluation Scheme					Subject Total
			L	T	P		Theory			Practical		
							CT	TA	ESE	TA	ESE	
1	MTTE 451	Dissertation (Final)	0	0	36	18	--	--	--	200	400	600
		Total				18						**600**

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