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1.3.1

Institution integrates crosscutting issues relevant to Professional Ethics, Gender, Human Values, Environment and Sustainability in transacting the Curriculum

Greater Noida Institute of Technology (Engg. Institute)

Plot No. 7, Knowledge Park II, Greater Noida
Uttar Pradesh 201310 India

Plot No. 7,Knowledge Park II, Greater Noida
Uttar Pradesh (India) 201310
www.gniot.net.in

Criteria – 1
Key indicator – 1.3.1

Institution integrates crosscutting issues relevant to Professional Ethics, Gender Equality, Human Values, Environment and Sustainability in transacting the Curriculum

Session 2020-2021

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Sl. No	Description	Page No.
1.	List of Subjects integrates crosscutting issues	
2.	Evaluation Schemes of the University	
3.	Syllabus of the Subjects included in the list	

Courses which address the Environment and Sustainability, Gender Equality, Human Values, Professional Ethics, into the Curriculum

Session 2020-2021

Sl. No	Year	Semester	Subject Code	Subject Name	Category
1	FOURTH	8th	ROE086	Renewable Energy Resources	Environment and Sustainability
2	THIRD (CE)	5th	KCE057	Air & Noice Pollution Controll	Environment and Sustainability
3	FOURTH (CE)	7th	RCE072	Rural Development Engineering	Environment and Sustainability
4	FOURTH (CE)	7th	RCE077	Air & Noice Pollution Controll	Environment and Sustainability
5	FOURTH (CE)	8th	RCE084	Solid Waste Management	Environment and Sustainability
6	FOURTH (CE)	8th	RCE085	Engineering Hydrology & Ground Water Management	Environment and Sustainability
7	SECOND	3rd / 4th	KVE 301/ KVE401	Universal Human values	Human Values & Professional Ethics
8	SECOND (MBA)	4th	KVE401	Universal Human Values & Professional Ethics	Human Values
9	THIRD	5th/6th	KNC502 / KNC602	Indian Tradition, Culture and Society	Human Values & Professional Ethics
10	THIRD	5th/6th	KNC501 / KNC601	Constitution of India, Law and Engineering	Human Values
11	FOURTH	7th	ROE074	Understanding the human being Comprehensively	Human Values
2	FOURTH	8th	ROE087	Human Values in Madhyasth Darshan	Human Values & Professional Ethics
13	FOURTH	8th	ROE088	Values, Relationship & Ethical Human Conduct-For	Human Values
14	FIRST (MBA)	1st	KMBN101	Management Concepts & Organisational Behaviour	Professional Ethics
15	FIRST (MBA)	1st	KMBN107	Business Communication	Professional Ethics
16	SECOND	3rd / 4th	KAS301/ KAS401	Technical Communication	Professional Ethics
17	FIRST	1st	KNC101	Soft Skill I	Professional Ethics
18	FIRST	2nd	KNC201	Soft Skill II	Professional Ethics

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

Evaluation Scheme & Syllabus

For

B.Tech. 2nd Year

(Computer Science and Engineering/CS/CSIT)

On

AICTE Model Curriculum

(Effective from the Session: 2019-20)

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

B.TECH (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.

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	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	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

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

EVALUATION SCHEME & SYLLABUS
FOR
B. TECH. THIRD YEAR

Computer Science
Computer Engineering
Computer Science and Engineering
(Computer Science and Engineering/CS)

On

Choice Based Credit System

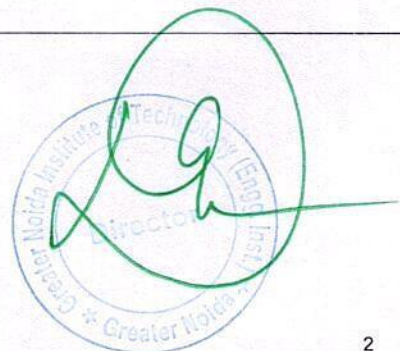**(Effective from the Session: 2020-21)**

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

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.

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

Departmental Elective-III

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

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

Evaluation Scheme & Syllabus

For

B.Tech. Fourth Year

(Computer Science and Engineering/Computer Science)

On

Choice Based Credit System
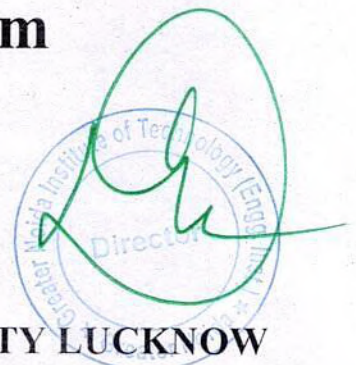
DR. A.P.J. ABDUL KALAM TECHNICAL UNIVERSITY LUCKNOW

B.Tech. (Computer Science and Engineering)
VII SEMESTER

SI. No.	Subject Code	Subject Name	L-T-P	Th/Lab Marks ESE	Sessional CT	Sessional TA	Total	Credit
1	Open Elective-1	Open Elective Course -1	3--0--0	70	20	10	100	3
2	CS Elective-3	Deptt Elective Course-3	3--0--0	70	20	10	100	3
3	CS Elective-4	Deptt Elective Course-4	3--1--0	70	20	10	100	4
4	RCS701	Distributed System	3--1--0	70	20	10	100	4
5	RCS702	Artificial Intelligence	3--0--0	70	20	10	100	3
6	RCS751	Distributed System Lab	0--0--2	50		50	100	1
7	RCS752	Artificial Intelligence Lab	0--0--2	50		50	100	1
8	RCS753	Industrial Training	0--0--3			100	100	2
9	RCS754	Project	0--0--6			200	200	3
	TOTAL			450	100	450	1000	24

B.Tech. (Computer Science and Engineering)
VIII SEMESTER

SI. No.	Subject Code	Subject Name	L-T-P	Th/Lab Marks ESE	Sessional CT	Sessional TA	Total	Credit
1	Open Elective-2	Open Elective Course-2	3--0--0	70	20	10	100	3
2	CS Elective-5	Deptt Elective Course-5	3--1--0	70	20	10	100	4
3	CS Elective-6	Deptt Elective Course-6	3--0--0	70	20	10	100	3
4	RCS851	Seminar	0--0--3			100	100	2
5	RCS852	Project	0--0--12	350		250	600	12
	TOTAL			560	60	380	1000	24

DEPARTMENTAL ELECTIVES

CS-ELECTIVE -3:

1. RCS070 Embedded Systems
2. RCS071 Application of Soft Computing
3. RCS072 High Performance Computing
4. RCS073 Human Computer Interface

CS-ELECTIVE-4:

1. RCS075 Cloud Computing
2. RCS076 Blockchain Architecture Design
3. RCS077 Agile Software Development
4. RCS078 Augmented & Virtual Reality

CS-ELECTIVE-5:

1. RCS080 Machine Learning (Mapping with MOOCS: https://onlinecourses.nptel.ac.in/noc17_cs17/preview
https://onlinecourses.nptel.ac.in/noc17_cs26/preview)

2. RCS081 Game Programming

3. RCS082 Image Processing (Mapping with MOOCS: https://onlinecourses.nptel.ac.in/noc18_ee40/preview
https://nptel.ac.in/courses/106105032/

4. RCS083 Parallel and Distributed Computing (Mapping with MOOCS: https://nptel.ac.in/courses/106102114/,
https://nptel.ac.in/courses/106104024/)

CS-ELECTIVE-6:

1. RCS085   Speech Natural language processing (Mapping with MOOCS: https://nptel.ac.in/courses/106101007/
https://nptel.ac.in/courses/106105158/)

2. RCS086   Deep Learning (Mapping with MOOCS: https://onlinecourses.nptel.ac.in/noc18_cs41/preview)

3. RCS087   Data Compression

4. RCS088 Quantum Computing (Mapping with MOOCS: https://onlinecourses.nptel.ac.in/noc18_cy07)

2020-21

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

Evaluation Scheme & Syllabus

For

B.Tech. 2nd Year

(Information Technology)

On

AICTE Model Curriculum

(Effective from the Session: 2019-20)

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

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 / 3	1 / 0	0 / 0	30	20	50		100		150	3
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.

2020-21

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	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

2020-21

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

EVALUATION SCHEME & SYLLABUS

FOR

B. TECH. THIRD YEAR

Computer Engineering And Information Technology
Computer Science and Information Technology
Information Technology
(IT and CSI)

On

Choice Based Credit System

(Effective from the Session: 2020-21)

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

B.TECH (INFORMATION TECHNOLOGY AND CSI) CURRICULUM STRUCTURE

2020-21

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.

2020-21

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
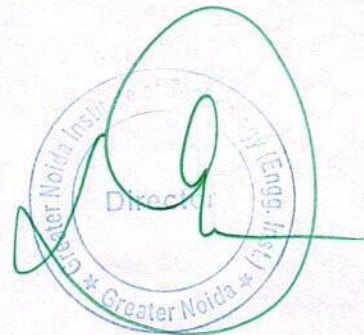
2020-21

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

Evaluation Scheme & Syllabus

For

B.Tech. Fourth Year

(Information Technology)

On

Choice Based Credit System

(Effective from the Session: 2019-20)

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

B.Tech. (Information Technology)
VII SEMESTER

SI. No.	Subject Code	Subject Name	L-T-P	Th/Lab Marks ESE	Sessional CT	Sessional TA	Total	Credit
1	Open Elective-1	Open Elective Course -1	3--0--0	70	20	10	100	3
2	IT Elective-3	Deptt Elective Course-3	3--0--0	70	20	10	100	3
3	IT Elective-4	Deptt Elective Course-4	3--1--0	70	20	10	100	4
4	RIT701	Cryptography & Network Security	3--1--0	70	20	10	100	4
5	RCS702	Artificial Intelligence	3--0--0	70	20	10	100	3
6	RIT751	Cryptography & Network Security Lab	0--0--2	50		50	100	1
7	RCS752	Artificial Intelligence Lab	0--0--2	50		50	100	1
8	RIT753	Industrial Training	0--0--3			100	100	2
9	RIT754	Project	0--0--6			200	200	3
	TOTAL			450	100	450	1000	24

B.Tech. (Information Technology)
VIII SEMESTER

SI. No.	Subject Code	Subject Name	L-T-P	Th/Lab Marks ESE	Sessional CT	Sessional TA	Total	Credit
1	Open Elective-2	Open Elective Course-2	3--0--0	70	20	10	100	3
2	IT Elective-5	Deptt Elective Course-5	3--1--0	70	20	10	100	4
3	IT Elective-6	Deptt Elective Course-6	3--0--0	70	20	10	100	3
4	RIT851	Seminar	0--0--3			100	100	2
5	RIT852	Project	0--0--12	350		250	600	12
	TOTAL			560	60	380	1000	24

DEPARTMENTAL ELECTIVES

IT-ELECTIVE -3

1. RIT070 Computer Graphics
2. RCS071 Application of Soft Computing
3. RCS072 High Performance Computing
4. RCS073 Human Computer Interface

IT-ELECTIVE-4

1. RCS075 Cloud Computing

2. RCS076 Blockchain Architecture Design

3. RCS077 Agile Software Development

4. RCS078 Augmented & Virtual Reality

IT-ELECTIVE-5

1. RCS080 Machine Learning (Mapping with MOOCS: https://onlinecourses.nptel.ac.in/noc17_cs17/preview
https://onlinecourses.nptel.ac.in/noc17_cs26/preview)
2. RCS081 Game Programming

3. RCS082 Image Processing (Mapping with MOOCS: https://onlinecourses.nptel.ac.in/noc18_ee40/preview
https://nptel.ac.in/courses/106105032/

4. RCS083 Parallel and Distributed Computing (Mapping with MOOCS: https://nptel.ac.in/courses/106102114/,
https://nptel.ac.in/courses/106104024/)

IT-ELECTIVE-6

1. RCS085 Speech Natural language processing (Mapping with MOOCS: https://nptel.ac.in/courses/106101007/

https://nptel.ac.in/courses/106105158/)

2. RCS086 Deep Learning (Mapping with MOOCS: https://onlinecourses.nptel.ac.in/noc18_cs41/preview)

3. RCS087 Data Compression

4. RCS088 Quantum Computing (Mapping with MOOCS: https://onlinecourses.nptel.ac.in/noc18_cy07)

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

EVALUATION SCHEME & SYLLABUS

FOR

# B. TECH. SECOND YEAR

ELECTRONICS ENGINEERING/ ELECTRONICS AND COMMUNICATION ENGINEERING/ ELECTRONICS AND TELECOMMUNICATION ENGINEERING/ ELECTRONICS AND INSTRUMENTATION ENGINEERING/ INSTRUMENTATION AND CONTROL ENGINEERING/ APPLIED ELECTRONICS AND INSTRUMENTATION/ INSTRUMENTATION ENGINEERING

AS PER

AICTE MODEL CURRICULUM

[Effective from the Session: 2019-20]
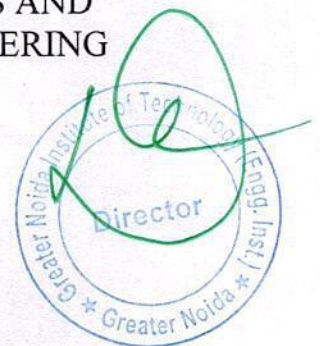
B.Tech. (Electronics & Communication Engg.)   Semester III

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

2020-21

Engineering Science Courses for B.Tech.(AICTE Model Curriculum) 2nd Year
(effective from the session 2019-20)

Sl.No.	Subject Codes	Subject	Periods			Evaluation Scheme			End Semester			Total	Credit
			L	T	P	CT	TA	Total	PS	TE	PE		
1	KOE031/041	Engineering Mechanics	3	1	0	30	20	50		100		150	4
2	KOE032/042	Material Science	3	1	0	30	20	50		100		150	4
	KOE033/043	Energy Science & Engineering	3	1	0	30	20	50		100		150	4
4	KOE034/044	Sensor & Instrumentation	3	1	0	30	20	50		100		150	4
5	KOE035/045	Basics Data Structure & Algorithms	3	1	0	30	20	50		100		150	4
6	KOE036/046	Introduction to Soft Computing	3	1	0	30	20	50		100		150	4
7	KOE037/047	Analog Electronics Circuits	3	1	0	30	20	50		100		150	4
8	KOE038/048	Electronics Engineering	3	1	0	30	20	50		100		150	4

Sl.No.	Subject	
1	Engineering Mechanics	To be offered to any Engg. Branch except ME/CE/AG and allied branches
2	Material Science	
3	Energy Science & Engineering	To be offered to any Engg. Branch except EE and allied branches
4	Sensor & Instrumentation	
5	Basics Data Structure & Algorithms	To be offered to any Engg. Branch except CSE and allied branches
6	Introduction to Soft Computing	
7	Analog Electronics Circuits	To be offered to any Engg. Branch except EC and allied branches
8	Electronics Engineering	

Important Note: CH/BT/TX Engg. and allied branches can be offered any of the above listed ES.
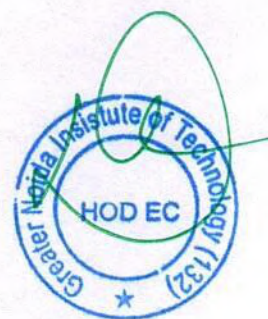
Director
Greater Noida Institute of Technology (Engg. Inst.)
Greater Noida

HOD EC
Greater Noida Institute of Technology (132)

2020-21

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

EVALUATION SCHEME & SYLLABUS

FOR

B. TECH. THIRD YEAR

ELECTRONICS ENGINEERING
ELECTRONICS AND COMMUNICATION ENGINEERING
ELECTRONICS AND TELECOMMUNICATION ENGINEERING

AS PER

AICTE MODEL CURRICULUM

[Effective from the Session: 2020-21]
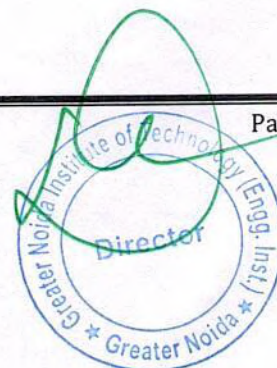
2020~21

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
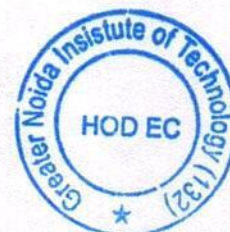
2020-21

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
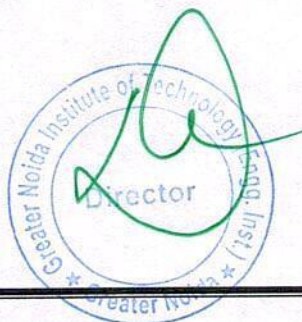
2020~21

DR. A.P.J. ABDUL KALAM TECHNICALUNIVERSITY LUCKNOW

EVALUATION SCHEME & SYLLABUS

FOR

B. TECH. FINAL YEAR

ELECTRONICS ENGINEERING/ ELECTRONICS & COMMUNICATION ENGINEERING/ ELECTRONICS & TELECOMMUNICATION ENGINEERING

ON

CHOICE BASED CREDIT SYSTEM (CBCS)

[Effective from the Session: 2019-20]

EVALUATION SCHEME

B.TECH. ELECTRONICS ENGINEERING, ELECTRONICS & COMMUNICATION ENGINEERING, ELECTRONICS & TELECOMMUNICATION ENGINEERING

YEAR 4rd/ SEMESTER VII

Sr. No.	Sub Code	Subject Name	Dept.	L-T-P	Th/Lab Marks	Sessional		Subject Total	Credit
					ESE	CT	TA		
1		Open Elective-I**	Other Dept.	3--0--0	70	20	10	100	3
2		Departmental Elective-III	Core Deptt.	3--0--0	70	20	10	100	3
3		Departmental Elective-IV	Core Deptt.	3--1--0	70	20	10	100	4
4	REC701	Data Communication Networks	Core Deptt.	3--1--0	70	20	10	100	4
5	REC702	VLSI Design	Core Deptt.	3--0--0	70	20	10	100	3
6	REC751	Optical Communication Lab	Core Deptt.	0--0--2	50	-	50	100	1
7	REC752	Electronics Circuit Design Lab	Core Deptt.	0--0--2	50	-	50	100	1
8	REC753	Industrial Training Viva-Voce	Core Deptt.	0--0--3	-	-	100	100	2
9	REC754	Project-I	Core Deptt.	0--0--6	-	-	200	200	3
	TOTAL				450	100	450	1000	24

LIST OF DEPTT. ELECTIVES:
Elective – III REC 07* Departmental Elective III
1. REC070 Optical Network
2. REC071 Information Theory & Coding
3. REC072 Digital Image Processing
4. REC073 Advance Programming in Engineering

Elective – IV REC 07* Departmental Elective IV
1. REC075 Optical Communication
2. REC076 Filter Design
3. REC077 Applied Fuzzy Electronic Systems
4. REC078 Computerized Process Control
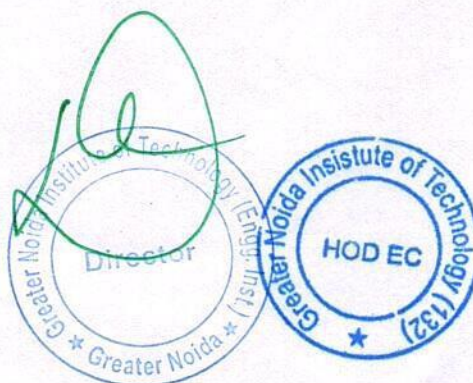
EVALUATION SCHEME

B.Tech. Electronics Engineering, Electronics & Communication Engineering, Electronics & Telecommunication Engineering

YEAR 4rd/ SEMESTER VIII

Sr. No	Sub Code	Subject Name	Dept.	L-T-P	Th/LAB Marks	Sessional		Subject Total	Credit
					ESE	CT	TA		
1		Open Elective-II**	Other Dept.	3-0-0	70	20	10	100	3
2		Departmental Elective-V	Core Deptt.	3-1-0	70	20	10	100	4
3		Departmental Elective-VI	Core Deptt.	3-0-0	70	20	10	100	3
4	REC851	GD &Seminar	Core Deptt.	0-0-3			100	100	2
5	REC852	Project	Core Deptt.	0-0-12	350	-	250	600	12
	TOTAL				560	60	380	1000	24

LIST OF DEPTT. ELECTIVES:
Elective – IV REC 08* Departmental Elective V
1. REC080   Electronic Switching
2. REC081   Analytical Instrumentation
3. REC082   Advanced Display Technologies & Systems
4. REC083   Satellite & RADAR systems (NPTEL: https://nptel.ac.in/courses/117105131/)

Elective – VI REC 08* Departmental Elective VI
1. REC085 Wireless & Mobile Communication (NPTEL :https://nptel.ac.in/courses/117102062/)
2. REC086 Voice Over IP
3. REC087 Speech Processing
4. REC088   Micro and Smart Systems(NPTEL: https://nptel.ac.in/courses/112108092/)
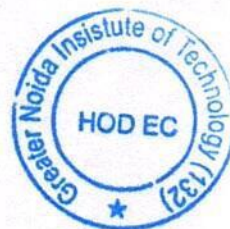
Session: 2020-21

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

EVALUATION SCHEME & SYLLABUS

FOR

B. TECH. 2nd YEAR

ELECTRICAL ENGINEERING

BASED ON

AICTE MODEL CURRICULUM

[Effective from the Session: 2019-20]
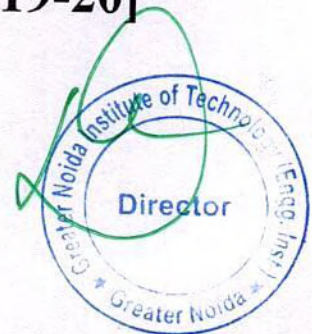
EVALUATION SCHEME - B.TECH 2nd YEAR (ELECTRICAL ENGINEERING)

SEMESTER- III

Sl. No.	Subject Codes	Subject	Periods			Evaluation Scheme			P S	End Semester		Total	Credit
			L	T	P	CT	TA	Total		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	1	0	30	20	50		100		150	3
			3	0	0								
3	KEE301	Electromagnetic Field Theory	3	1	0	30	20	50		100		150	4
4	KEE302	Electrical Measurements & Instrumentation	3	1	0	30	20	50		100		150	4
5	KEE303	Basic Signals & Systems	3	0	0	30	20	50		100		150	3
6	KEE351	Analog Electronics Lab	0	0	2				25		25	50	1
7	KEE352	Electrical Measurements and instrumentation Lab	0	0	2				25		25	50	1
8	KEE353	Electrical Workshop	0	0	2				25		25	50	1
9	KEE354	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			P S	End Semester		Total	Credit
			L	T	P	CT	TA	Total		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	KEE401	Digital Electronics	3	0	0	30	20	50		100		150	3
4	KEE402	Electrical Machines-I	3	1	0	30	20	50		100		150	4
5	KEE403	Networks Analysis & Synthesis	3	1	0	30	20	50		100		150	4
6	KEE451	Circuit Simulation Lab	0	0	2				25		25	50	1
7	KEE452	Electrical Machines - I Lab	0	0	2				25		25	50	1
8	KEE453	Digital Electronics 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

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

EVALUATION SCHEME & SYLLABUS

FOR

B. TECH. 3rd YEAR (EE)

ELECTRICAL ENGINEERING

BASED ON

AICTE MODEL CURRICULUM

[Effective from the Session: 2020-21]

EVALUATION SCHEME - B.TECH 3rd YEAR (ELECTRICAL ENGINEERING)

SEMESTER V

Sl. No.	Subject Codes	Subject	Periods			Evaluation Scheme				End Semester		Total	Credit
			L	T	P	CT	TA	Total	PS	TE	PE		
1	KEE501	Power System - I	3	1	0	30	20	50		100		150	4
2	KEE502	Control System	3	1	0	30	20	50		100		150	4
3	KEE503	Electrical Machines-II	3	1	0	30	20	50		100		150	4
4	KEE051-KEE054	Departmental Elective-I	3	0	0	30	20	50		100		150	3
5	KEE055-KEE058	Departmental Elective-II	3	0	0	30	20	50		100		150	3
6	KEE551	Power System-I Lab	0	0	2				25		25	50	1
7	KEE552	Control System Lab	0	0	2				25		25	50	1
8	KEE553	Electrical Machines - II Lab	0	0	2				25		25	50	1
9	KEE554	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.

DEPARTMENT ELECTIVE - I

KEE051   Robotics
KEE052   Sensors and Transducers
KEE053   Industrial Automation and Control
KEE054   Electrical Standards and Engineering Practices

DEPARTMENT ELECTIVE - II

KEE055   Optimization Techniques
KEE056   Neural Networks & Fuzzy System
KEE057   Digital Signal Processing
KEE058   Analog & Digital Communication

SEMESTER VI

Sl. No.	Subject Codes	Subject	Periods			Evaluation Scheme				End Semester		Total	Credit
			L	T	P	CT	TA	Total	PS	TE	PE		
1	KEE601	Power System-II	3	1	0	30	20	50		100		150	4
2	KEE602	Microprocessor and Microcontroller	3	1	0	30	20	50		100		150	4
3	KEE603	Power Electronics	3	1	0	30	20	50		100		150	4
4	KEE06*	Departmental Elective-III	3	0	0	30	20	50		100		150	3
5	KOE06*	Open Elective-I	3	0	0	30	20	50		100		150	3
6	KEE651	Power System-II Lab	0	0	2				25		25	50	1
7	KEE652	Microprocessor and Microcontroller Lab	0	0	2				25		25	50	1
8	KEE653	Power Electronics Lab	0	0	2				25		25	50	1
10	KNC601/ KNC602	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	6							900	21

DEPARTMENT ELECTIVE - III

KEE 061 Special Electrical Machines
KEE 062 Electrical Machine Design
KEE 063 Digital Control System
KEE 064 Electrical and Hybrid Vehicles
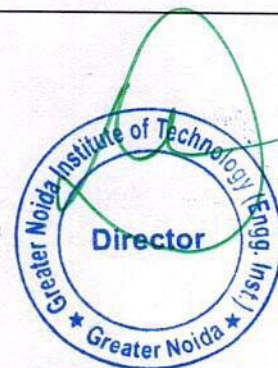
DR. A.P.J. ABDUL KALAM TECHNICAL UNIVERSITY, LUCKNOW

EVALUATION SCHEME & SYLLABUS
FOR

B. TECH. IV YEAR

ELECTRICAL ENGINEERING

ON

CHOICE BASED CREDIT SYSTEM (CBCS)

[Effective from the Session: 2019-20]

EVALUATION SCHEME

B-TECH. ELECTRICAL ENGINEERING

YEAR 4th / SEMESTER-VII

S. No.	Subject Code	Subject Name	Department	L-T-P	Th./Lab Marks ESE	Sessional CT	Sessional TA	Total	Credit
1		OPEN ELECTIVE COURSE-1	Other Deptt.	3--0--0	70	20	10	100	3
2		DEPTT ELECTIVE COURSE-3	Core Deptt.	3--0--0	70	20	10	100	3
3		DEPTT ELECTIVE COURSE-4	Core Deptt.	3--1--0	70	20	10	100	4
4	REE701	ELECTRICAL DRIVES	Core Deptt.	3--1--0	70	20	10	100	4
5	REE702	POWER SYSTEM PROTECTION	Core Deptt.	3--0--0	70	20	10	100	3
6	REE751	INDUSTRIAL AUTOMATION & PLC LAB	Core Deptt.	0--0--2	50		50	100	1
7	REE752	POWER SYSTEM LAB	Core Deptt.	0--0--2	50		50	100	1
8	REE753	INDUSTRIAL TRAINING	Core Deptt.	0--0--3			100	100	2
9	REE754	PROJECT-1	Core Deptt.	0--0--6			200	200	3
	TOTAL				450	100	450	1000	24

DEPTT. ELECTIVE COURSE-3
1. **REE070: Microprocessors and Microcontrollers**
2. **REE071: Utilization of Electrical Energy & Electric Traction**
3. **REE072: Introduction to Smart Grid**
4. **REE073: Power System Optimization**

DEPTT. ELECTIVE COURSE-4
1. **REE075: Industrial Automation and Control**
2. **REE076: Energy Efficiency & Conservation**
3. **REE077: Reliability Engineering**
4. **REE078: Electric Machine Design**
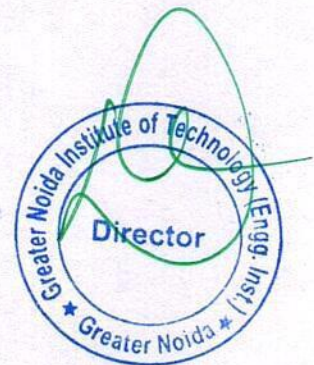
EVALUATION SCHEME

B-TECH. ELECTRICAL ENGINEERING

YEAR 4th / SEMESTER-VIII

S. No.	Subject Code	Subject Name	Department	L-T-P	Th/Lab Marks ESE	Sessional CT	Sessional TA	Total	Credit
1		OPEN ELECTIVE COURSE-2	Other Deptt.	3--0--0	70	20	10	100	3
2		DEPTT ELECTIVE COURSE-5	Core Deptt.	3--1--0	70	20	10	100	4
3		DEPTT ELECTIVE COURSE-6	Core Deptt.	3--0--0	70	20	10	100	3
4	REE851	GD & SEMINAR	Core Deptt.	0--0--3			100	100	2
5	REE852	PROJECT-2	Core Deptt.	0--0--12	350		250	600	12
	TOTAL				560	60	380	1000	24

DEPTT. ELECTIVE COURSE-5
1. REE080: Advanced Control System
2. REE081: Introduction to Power Quality & FACTS
3. REE082: Power System Dynamics, Control and Monitoring (NPTEL)
4. REE083: Computer Aided Power System Analysis

DEPTT. ELECTIVE COURSE-6
1. REE085: EHVAC &DC Transmission
2. REE086: Power Theft & Energy Management
3. REE087: Digital Image Processing
4. REE088: Antennas (NPTEL)

Session : 2020-21

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

EVALUATION SCHEME & SYLLABUS

FOR

COMMOM NON CREDIT COURSE (NC)
(V & VI Semester)

1	KNC501/ KNC601	CONSTITUTION OF INDIA, LAW AND ENGINEERING
2	KNC502/ KNC602	INDIAN TRADITION, CULTURE AND SOCIETY
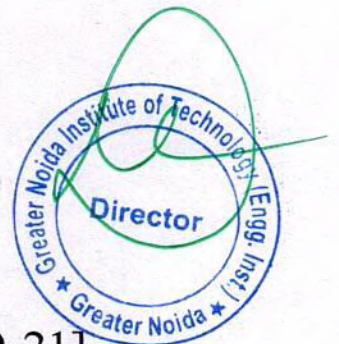
[Effective from the Session: 2020-21]

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

EVALUATION SCHEME & SYLLABUS

FOR

OPEN ELECTIVES I
(VI SEMESTER)

AS PER

AICTE MODEL CURRICULUM
[Effective from the Session: 2020-21]
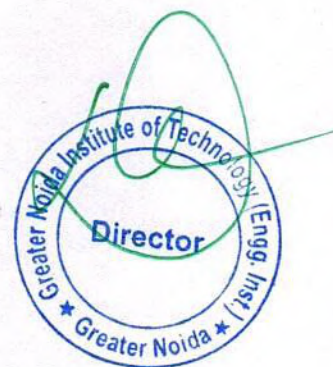
B.Tech. VI Semester

OPEN ELECTIVE-I

KOE060	IDEA TO BUSINESS MODEL
KOE061	REAL TIME SYSTEMS
KOE062	EMBEDDED SYSTEM
KOE063	INTRODUCTION TO MEMS
KOE064	OBJECT ORIENTED PROGRAMMING
KOE065	COMPUTER BASED NUMERICAL TECHNIQUES
KOE066	GIS & REMOTE SENSING
KOE067	BASICS OF DATA BASE MANAGEMENT SYSTEM
KOE068	SOFTWARE PROJECT MANAGEMENT
KOE069	*UNDERSTANDING THE HUMAN BEING COMPREHENSIVELY-HUMAN ASPIRATIONS AND ITS FULFILLMENT

NOTE:

1. The Student shall choose an open Elective Subject from the list of open elective courses in such a manner that he/she has not studied the same course in any form during the degree programme.

2. The students shall choose an Open Elective course from the prescribed list of open elective courses available at University website for 3rd year (2020-21) in such a manner that he/she has not studied the same subject or allied subject in any semester during the entire degree program.

3. Subject to aforesaid condition, the open Elective courses may be offered from the department to all students irrespective of branch. There is no restriction related to branch. The students of any branch (irrespective of department) can select the open elective subjectsfrom the prescribed list of open elective courses.

4. * It is mandatory that for subjects (KOE069) only trained Faculty (who had done the FDP for these courses) will teach the courses.
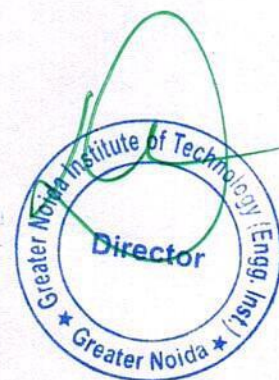
DR. A.P.J. ABDUL KALAM TECHNICAL UNIVERSITY UTTAR PRADESH, LUCKNOW

EVALUATION SCHEME & SYLLABUS

FOR

REVISED OPEN ELECTIVES I
(VII SEMESTER)

[Effective from the Session: 2020-21]

B.TECH.
VII SEMESTER 2020-21

REVISED OPEN ELECTIVE-I

1.	ROE070	HUMAN VALUES IN SANKHAY YOGA AND VEDANTA DARSAN
2.	ROE071	MODELLING AND SIMULATION OF DYNAMIC SYSTEMS
3.	ROE072	INTRODUCTION TO SMART GRID
4.	ROE073	CLOUD COMPUTING
5.	ROE074	UNDERSTANDING THE HUMAN BEING COMPREHENSIVELY - HUMAN ASPIRATIONS AND ITS FULFILLMENT
6.	ROE075	AUTOMATION AND ROBOTICS
7.	ROE076	COMPUTERIZED PROCESS CONTROL
8.	ROE077	MODELING OF FIELD-EFFECT NANO DEVICES
9.	ROE078	QUALITY MANAGEMENT
10.	ROE079	GIS & REMOTE SENSING
11.	ROE080	HUMAN VALUES IN BUDDHA AND JAIN DARSHAN
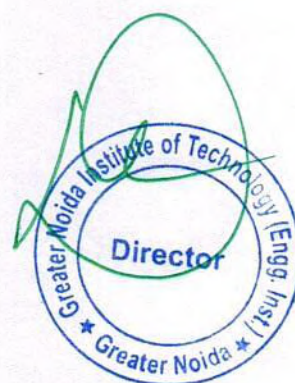
DR. A.P.J. ABDUL KALAM TECHNICAL UNIVERSITY, LUCKNOW

Open Electives

For

Bachelor of Technology

(Choice Based Credit System)
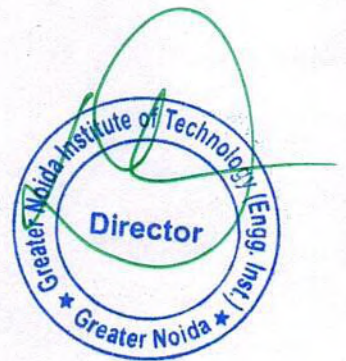
7th & 8th Semester, 2019-20

Open Electives for B.Tech 4th year (CBCS)		
Open Electives I (VII Semester)		
Sl. No.	Subject Code	Name of Elective(s)
1	ROE071	Modelling and Simulation of Dynamic Systems
2	ROE072	Introduction to Smart Grid
3	ROE073	Cloud computing
4	ROE074	Understanding the human being Comprehensively Human Aspiration audits fulfilment
Open Electives II (VIII Semester)		
Sl. No.	Subject Code	Name of Elective(s)
1	ROE081	Digital and Social Media Marketing
2	ROE082	Entrepreneurship Development
3	ROE083	Machine Learning
4	ROE084	Micro and Smart Systems
5	ROE085	Operations Research
6	ROE086	Renewable Energy Resources
7	ROE087	*Human Values in Madhyasth Darshan
8	ROE088	*Values, Relationship & Ethical Human Conduct-For a Happy & Harmonious Society

Note:

1. The Student shall choose an open Elective from the list in such a manner that he/she has not studied the same course in any form during the degree programme.
2. * It is mandatory that for these two subjects (ROE087 & ROE088) only trained faculty (who had done the FDP for these courses) will teach the courses.

1

Evaluation Scheme 2020-21
2nd Year (ODD)
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	1	0	30	20	50		100		150	3
			3	0	0								
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.

2nd Year (EVEN)

Sl. No.	Subject Codes	Subject	Periods			Evaluation Scheme				End Semester		Total	Credit
		SEMESTER- IV	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	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

Director

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

LUCKNOW, UTTAR PRADESH

STUDY & EVALUATION SCHEME WITH SYLLABUS

FOR

B. TECH. 3rd YEAR

MECHANICAL ENGINEERING

[Effective from Session: 2020-21]

GNIOT

ग्रेटर नोएडा इंस्टीट्यूट ऑफ टेक्नोलॉजी (इंजीनियरिंग इंस्टीट्यूट)
GREATER NOIDA INSTITUTE OF TECHNOLOGY (Engg. Institute)

3rd Year (ODD)

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

3rd Year (EVEN)

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

HOD-ME

GNIOT ENGG. INSTITUTE

ग्रेटर नोएडा इंस्टीट्यूट ऑफ टेक्नोलॉजी (इंजीनियरिंग इंस्टीट्यूट)
GREATER NOIDA INSTITUTE OF TECHNOLOGY (Engg. Institute)

4th Year (ODD)

Sl.No.	Subject Code	Subject Name	Department	L-T-P	Th/Lab Marks ESE	Sessional CT	Sessional TA	Total	Credit
1	ROE-074	OPEN ELECTIVE COURSE-1 (UHV)	Other Deptt.	3-0-0	70	20	10	100	3
2		DEPTT ELECTIVE COURSE-3	Core Deptt.	3-0-0	70	20	10	100	3
3		DEPTT ELECTIVE COURSE-4	Core Deptt.	3-1-0	70	20	10	100	4
4	RME701	CAD/CAM	Core Deptt.	3-1-0	70	20	10	100	4
5	RME702	Automobile Engineering	Core Deptt.	3-0-0	70	20	10	100	3
6	RME751	CAD/CAM Lab	Core Deptt.	0-0-2	50		50	100	1
7	RME752	IC Engine & Automobile Lab	Core Deptt.	0-0-2	50		50	100	1
8	RME753	INDUSTRIAL TRAINING	Core Deptt.	0-0-3			100	100	2
9	RME754	PROJECT-1	Core Deptt.	0-0-6			200	200	3
	TOTAL				450	100	450	1000	24

DEPARTMENTAL ELECTIVE-3	
Sub.Code	Subject Name
RME070	Composite Materials
RME071	Power Plant Engineering
RME072	Supply Chain Management
RME073	Additive Manufacturing

DEPARTMENTAL ELECTIVE-4	
S.Code	Subject Name
RME075	Operation Research
RME076	Modelling &Simmulation
RME077	Computational Fluid Dynamics
RME078	Automation & Robotics

4th Year (EVEN)

Sl.No.	Subject Code	Subject Name	Department	L-T-P	Th/Lab Marks ESE	Sessional CT	Sessional TA	Total	Credit
1	ROE086	OPEN ELECTIVE COURSE-2 (RER)	Other Deptt.	3-0-0	70	20	10	100	3
2		DEPTT ELECTIVE COURSE-5	Core Deptt.	3-1-0	70	20	10	100	4
3		DEPTT ELECTIVE COURSE-6	Core Deptt.	3-0-0	70	20	10	100	3
4	RME851	SEMINAR	Core Deptt.	0-0-3			100	100	2
5	RME852	PROJECT-2	Core Deptt.	0-0-12	350		250	600	12
	TOTAL				560	60	380	1000	24

DEPARTMENTAL ELECTIVE-5	
Sub.Code	Subject Name
RME080	Non-Destructive Testing
RME081	Advance Welding
RME082	Thermal Turbo Machine
RME083	Energy Conservation &Management

DEPARTMENTAL ELECTIVE-6	
S.Code	Subject Name
RME085	Total Quality Management
RME086	Gas Dynamics & Jet Propulsion
RME087	Design & Transmission System
RME088	Theory of Elasticity.

(Approved by AICTE, Delhi & Affiliated to Dr. A.P.J. Abdul Kalam Technical University, Lucknow)
♀ Plot No. 7, Knowledge Park-II, Greater Noida, Gautam Buddh Nagar, Uttar Pradesh-201310
📞 0120-2328214/15/16, 1800 274 6969   ✉ director@gniot.net.in   🌐 www.gniot.net.in

Director

HoD ME

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

EVALUATION SCHEME & SYLLABUS

FOR
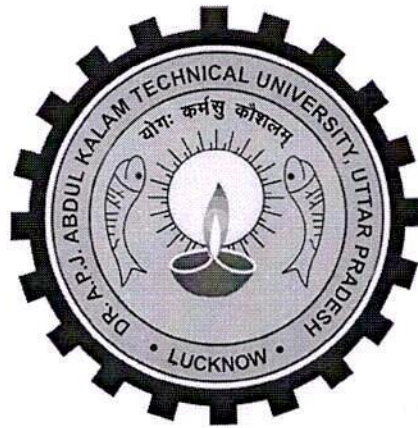
B. TECH. SECOND YEAR

(CIVIL ENGINEERING)

(Effective from session 2019-20)
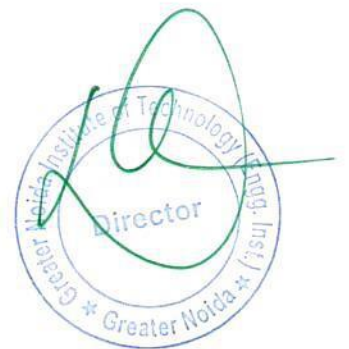
THIRD SEMESTER   **CIVIL ENGINEERING**   **SESSION 2019-20**

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

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

EVALUATION SCHEME & SYLLABUS

FOR

B. TECH. THIRD YEAR

(CIVIL ENGINEERING)
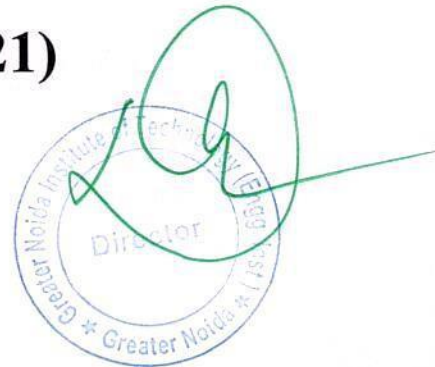
(Effective from session 2020-21)

No	Subject Code	Subject	Periods			Evaluation Scheme				End Semester		Total	Cred
			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	KNC501/ KNC502	Constitution of India, Law and Engineering / Indian Tradition, Culture and Society	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.
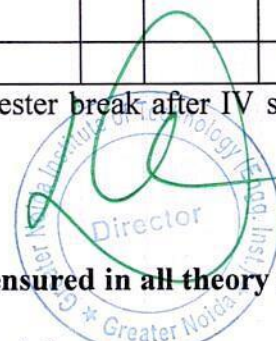
S.No	Subject Code	Subject	Periods			Evaluation Scheme				End Semester		Total	Credi
			L	T	P	CT	TA	Total	PS	TE	PE		
1	KCE 601	Design of Concrete Structures	3	1	0	30	20	50		100		150	4
2	KCE 602	Transportation Engineering	3	1	0	30	20	50		100		150	4
3	KCE 603	Environmental Engineering	3	1	0	30	20	50		100		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 Design											
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	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	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.

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

EVALUATION SCHEME & SYLLABUS

FOR
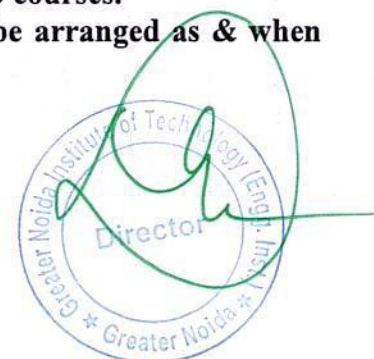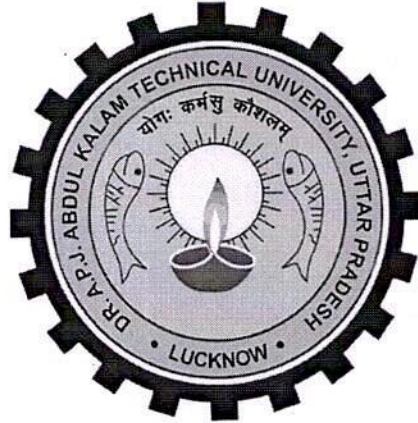
B. TECH. FOURTH YEAR

(CIVIL ENGINEERING)

On

Choice Based Credit System

(Effective from session 2019-20)
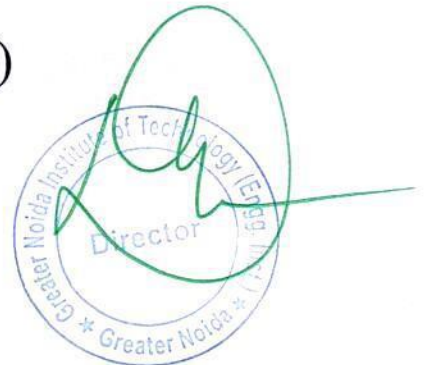
SEVENTH SEMESTER **CIVIL ENGINEERING** **SESSION 2019-20**

S. No.	Subject Code	Subject Name	Department	L-T-P	Th/Lab Marks ESE	Sessional CT	Sessional TA	Total	Credit
1		Open Elective Course-1	Other Deptt.	3---0---0	70	20	10	100	3
2	RCE071 RCE072 RCE073 RCE074	**Elective -3** Geology and Soil Mechanics Rural Development Engineering Structural Health Monitoring & Rehabilitation River Engineering	Core Deptt.	3---0---0	70	20	10	100	3
3	RCE075 RCE076 RCE077 RCE078	**Elective -4** Computational Fluid Dynamics Railways, Airport & Water Ways Air & Noise Pollution Control Ground Improvement Techniques	Core Deptt.	3---1---0	70	20	10	100	4
4	RCE701	Design of Structure-III	Core Deptt.	3---1---0	70	20	10	100	4
5	RCE702	Water Resources	Core Deptt.	3---0---0	70	20	10	100	3
6	RCE751	Non Destructive Testing Laboratory	Core Deptt.	0---0---2	50		50	100	1
7	RCE752	Mini Project	Core Deptt.	0---0---2	50		50	100	1
8	RCE753	Industrial Training	Core Deptt.	0---0---3			100	100	2
9	RCE754	Project-1	Core Deptt.	0---0---6			200	200	3
	TOTAL				450	100		1000	24

Industrial Training: Industrial Training 1 (completed after IVth sem) & 2 (completed after VIth sem) is to be evaluated in VII semester.

Project-1:-Students will initiate Project work in VII semester as Project -1 and the same will be completed in VIII semester as Project-2.

Evaluation of Project-1 should be based on the progress reported by the student and certified by the supervisor.

S No.	Subject Code	Subject Name	Teaching Deptt.	L-T-P	Th/Lab Marks ESE	Sessional CT	Sessional TA	Total	Credit
1		Open Elective Course -2	Other Deptt.	3---0---0	70	20	10	100	3
2	RCE081 RCE082 RCE083 RCE084	**Elective -5** Finite Element Method Structural Dynamics Advanced Concrete Design Solid Waste Management	Core Deptt.	3---1---0	70	20	10	100	4
3	RCE085 RCE086 RCE087 RCE088	**Elective -6** Engineering Hydrology and Ground Water Management Urban Transportation System & Planning Probability Methods in Civil Engineering Earthquake Resistant Design of Structure	Core Deptt.	3---0---0	70	20	10	100	3
4	RCE851	Seminar	Core Deptt.	0 ---0---3			100	100	2
5	RCE852	Project-2	Core Deptt.	0---0---12	350		250	600	12
	TOTAL				560	60	380	1000	24

The required identification and distribution of electives through NPTEL has been made as given below.

Sem	Departmental Elective	Name of Elective through NPTEL
VIII	5	RCE082 Structural Dynamics
	6	RCE087 Probability Methods in Civil Engineering
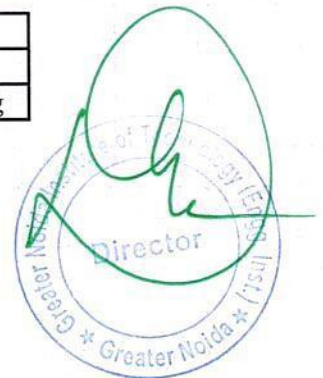
DR. A.P.J. ABDUL KALAM TECHNICAL UNIVERSITY, LUCKNOW

Open Electives

For

Bachelor of Technology

(Choice Based Credit System)

7th & 8th Semester, 2019-20

2020-21

Open Electives for B.Tech 4th year (CBCS)		
Open Electives I (VII Semester)		
Sl. No.	Subject Code	Name of Elective(s)
1	ROE071	Modelling and Simulation of Dynamic Systems
2	ROE072	Introduction to Smart Grid
3	ROE073	Cloud computing
4	ROE074	Understanding the human being Comprehensively Human Aspiration audits fulfilment
Open Electives II (VIII Semester)		
Sl. No.	Subject Code	Name of Elective(s)
1	ROE081	Digital and Social Media Marketing
2	ROE082	Entrepreneurship Development
3	ROE083	Machine Learning
4	ROE084	Micro and Smart Systems
5	ROE085	Operations Research
6	ROE086	Renewable Energy Resources
7	ROE087	*Human Values in Madhyasth Darshan
8	ROE088	*Values, Relationship & Ethical Human Conduct-For a Happy & Harmonious Society

Note:

1. The Student shall choose an open Elective from the list in such a manner that he/she has not studied the same course in any form during the degree programme.

2. * It is mandatory that for these two subjects (ROE087 & ROE088) only trained faculty (who had done the FDP for these courses) will teach the courses.

Director

Greater Noida Institute of Technology (Engg. Inst.) Greater Noida

HOD EC
Greater Noida Insistute of Technology 132)

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

Revised Evaluation Scheme & Syllabus

MBA

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

First Year

AS PER

AICTE MODEL CURRICULUM

(Effective from the Session: 2020-21)

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
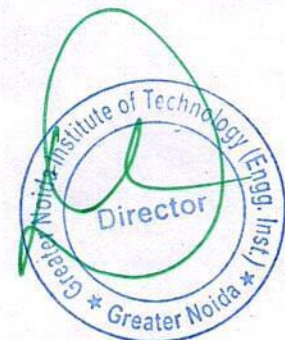
Semester II

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
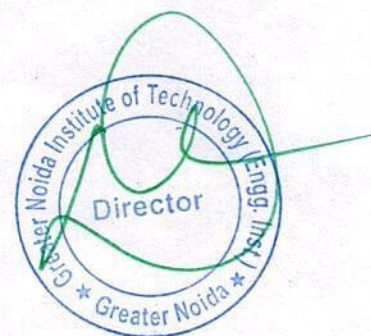
Session 2020-21

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

LUCKNOW

Evaluation Scheme & Syllabus

For

MBA Second Year

AS PER AICTE MODEL CURRICULUM

(Effective from the Session: 2019-20)

MBA Scheme of Teaching & Evaluation for Session 2019-20

SEMESTER III

S. No.	Code	Course Title	Periods			Evaluation Scheme				Total	Credit
						Sessional Exams					
			L	T	P	CT	TA	Total	ESE		
1	KMB301	Strategic Management	4	0	0	30	20	50	100	150	3
2	KMB302	International Business Management	4	0	0	30	20	50	100	150	3
3		Specialization Group -1 Elective 1*	4	0	0	30	20	50	100	150	3
4		Specialization Group -1 Elective 2*	4	0	0	30	20	50	100	150	3
5		Specialization Group -1 Elective 3*	4	0	0	30	20	50	100	150	3
6		Specialization Group -2 Elective 1*	4	0	0	30	20	50	100	150	3
7		Specialization Group -2 Elective 2*	4	0	0	30	20	50	100	150	3
8	KMB303	Summer Training Project Report & Viva Voce	2	0	0	0	0	50	100	150	3
		TOTAL							800	1200	24

SEMESTER IV

S. No.	Code	Course Title	Evaluation Scheme								Credit
			Sessional Exams						ESE	Total	
			L	T	P	CT	TA	Total			
1	KMB401	Project Management	4	0	0	30	20	50	100	150	3
2	KMB402	Entrepreneurship Development	4	0	0	30	20	50	100	150	3
3	KVE401	Universal Human Values and Professional Ethics	4	0	0	30	20	50	100	150	3
4		Specialization Group -1 Elective 4*	4	0	0	30	20	50	100	150	3
5		Specialization Group -1 Elective 5*	4	0	0	30	20	50	100	150	3
6		Specialization Group -2 Elective 3*	4	0	0	30	20	50	100	150	3
7	KMB405	Research Project Report and Viva Voce	4	0	0	0	0	100	200	300	6
		TOTAL							800	1200	24

ROE086: RENEWABLE ENERGY RESOURCES   L T P 3 0 0

UNIT-I
Introduction: Various non-conventional energy resources- Introduction, availability, classification, relative merits and demerits. **Solar Cells**: Theory of solar cells. Solar cell materials, solar cell array, solar cell power plant, limitations.

UNIT-II
Solar Thermal Energy: Solar radiation, flat plate collectors and their materials, applications and performance, focussing of collectors and their materials, applications and performance; solar thermal power plants, thermal energy storage for solar heating and cooling, limitations.

UNIT-III
Geothermal Energy: Resources of geothermal energy, thermodynamics of geo-thermal energy conversion-electrical conversion, non-electrical conversion, environmental considerations. **Magneto-hydrodynamics (MHD)**: Principle of working of MHD Power plant, performance and limitations.**Fuel Cells**: Principle of working of various types of fuel cells and their working, performance and limitations.

UNIT-IV
Thermo-electrical and thermionic Conversions: Principle of working, performance and limitations. **Wind Energy**: Wind power and its sources, site selection, criterion, momentum theory, classification of rotors, concentrations and augments, wind characteristics. performance and limitations of energy conversion systems.

UNIT-V
Bio-mass:Availability of bio-mass and its conversion theory. **Ocean Thermal Energy Conversion (OTEC)**: Availability, theory and working principle, performance and limitations. **Wave and Tidal Wave**: Principle of working, performance and limitations. Waste Recycling Plants.

Text books:

1. Raja etal, "Introduction to Non-Conventional Energy Resources" Scitech Publications.
2. John Twideu and Tony Weir, "Renewal Energy Resources" BSP Publications, 2006.
3. M.V.R. Koteswara Rao, "Energy Resources: Conventional & Non-Conventional" BSP Publications,2006.
4. D.S. Chauhan,"Non-conventional Energy Resources" New Age International.
5. C.S. Solanki, "Renewal Energy Technologies: A Practical Guide for Beginners" PHI Learning.
6. Peter Auer, "Advances in Energy System and Technology". Vol. 1 & II Edited by Academic Press.
7. Godfrey Boyle," Renewable Energy Power For A Sustainable Future", Oxford University Press.

7

KCE 057 AIR & NOISE POLLUTION CONTROL   **(L-T-P 3-0-0) Credit – 3**

Course Outcomes:

After completion of the course student will be able to:

CO-1 Understand air pollutants and their impacts.

CO-2 Explain air pollution chemistry and meteorological aspects of air pollutants.

CO-3 Demonstrate methods for controlling particulate air pollutants.

CO-4 Demonstrate methods for controlling gaseous air pollutants.

CO-5 Understand automotive emission standards.

CO-6 Apply methods for controlling noise pollution.

Unit 1

Air pollution: composition and structure of atmosphere, global implications of air pollution, classification of air pollutants: particulates, hydrocarbon, carbon monoxide, oxides of sulphur, oxides of nitrogen and photochemical oxidants. Indoor air pollution. Effects of air pollutants on humans, animals, property and plants.   **[8]**

Unit 2

Air pollution chemistry, meteorological aspects of air pollution dispersion; temperature lapse rate and stability, wind velocity and turbulence, plume behaviour, dispersion of air pollutants, the Gaussian Plume Model, stack height and dispersion. **[8]**

Unit 3

Ambient air quality and standards, air sampling and measurements. Control of particulate air pollutants using gravitational settling chambers, cyclone separators, wet collectors, fabric filters (Bag-house filter), electrostatic precipitators (ESP). **[8]**

Unit 4

Control of gaseous contaminants: Absorption, Adsorption, Condensation and Combustion, Control of sulphur oxides, nitrogen oxides, carbon monoxide, and hydrocarbons. Automotive emission

control, catalytic convertor, Euro-I, Euro-II and Euro-III specifications, Indian specifications.   **[8]**

Unit 5

Noise pollution: Basics of acoustics and specification of sound; sound power, sound intensity and sound pressure levels; plane, point and line sources, multiple sources; outdoor and indoor noise propagation; psychoacoustics and noise criteria, effects of noise on health, annoyance rating schemes; special noise environments: Infrasound, ultrasound, impulsive sound and sonic boom; noise standards and limit values; noise instrumentation and monitoring procedure. Noise indices. Noise control methods. **[8]**

RCE072 Rural Development Engineering (L-T-P 3-0-0) Credit - 3

UNIT- I Rural Development Planning and Concept of Appropriate Technology: Scope; development plans; various approaches to rural development planning; concept of appropriate technology. Rural development programme/ projects. [8]

UNIT- II Rural Housing: Low cost construction materials for housing; Architectural considerations for individual and group housing; Composite material - ferro-cement & fly ash, autoclaved calcium silicate bricks and soil-stabilized un-burnt brick; Plinth protection of mud walls; design consideration and construction of: non-erodable mud plaster, Water-proof and fire-retardant roof treatment for thatch roofs. Pre-cast stone masonry; rat-trap bond for walls; Panels for roof, ferro-cement flooring / roofing units, Earthquake resistant measures for low cost houses. [8]

UNIT- III Water Supply and Rural Sanitation: Sources of water. BIS & WHO water standards. Quality, Storage and distribution for rural water supply works; basic design principles of treatment-low cost water treatment technologies; conservation of water; rainwater harvesting; drainage in rural areas, low cost waste disposal systems; septic tank ; Biogas technology; low cost community & individual Garbage disposal systems, Ferro-cement water storage tanks. [8]

UNIT- IV Low Cost Roads and Transport: Broad categories of Pavement Layers, types of Granular Sub-Bases and Bases, Bituminous Construction, Surface Treatments for roads in rural areas. Soil Stabilization, Lime, Lime Flyash and Cement Treated Course. Crusher-run-Macadam. Use of local materials. Flexible Pavement: Design factors, Basic Principles, Guidelines for Surfacing for Rural Road. [8]

UNIT- V Low Cost Irrigation: Consideration of low cost irrigation techniques , drip & sprinkler irrigation systems. Watershed and catchments area development - problems and features of watershed management, watershed structures [8]

Reference Books:

1. A.G.Madhov Rao, D.S.Ramachandra Murthy, Appropriate Technologies for low cost Housing Oxfordand IBH Publishing Co. Pvt .Ltd.
2. CBRI, Roorkee, Advances in Building Mat erials and Construction.
3. C. Satyanarayana Murthy, Design of Minor Irrigation and Canal Structures. Wiley Eastern Ltd.,
4. Document on Rural Road Development in India Volume1& 2; Central Road Research Institute, New Delhi.
5. Water supply and sanitary engineering by Rangwala, .Charotar publication
6. Rural Infrastructure by P.Nair, SBS Publication
7. Rural Infrastructure by Samalia Bihari Verma, Gyaneshwar Prasad & Sahib Kumari Singh, Sarup & Sons.
8. Rural Development by Katar Singh, SAGE Publication

UNIT –III Signalling and Interlocking, Urban Railways: Classification of Signals, method of train working, absolute block system, Centralized train control system, ATS, interlocking of track, principle of interlocking, types of interlocking, high speed track – track requirement, speed limitations, high speed technologies, Urban railway- railway system in urban areas. **[8]**

UNIT – IV Introduction to Airport Engineering Air craft characteristics affecting airport planning & design, selection of site for an airport. Airports - layout and orientation, Runway and taxiway design consideration and geometric design. Airport drainage management, Zoning laws, Visual aids and air traffic control, Runway lighting, Runway operation Helipads, hangers, service equipment. **[8]**

UNIT – V Water Transport Harbours and ports, Types of Harbours; Harbours - layouts, shipping lanes, anchoring, location identification; Littoral transport with erosion and deposition; sounding methods; Dry and Wet docks, components and operational Tidal data and analyses. Inland waterways: advantages and disadvantages; Development in India. Inland water operation. **[8]**

Text Books

1. A Text Book of Railway Engineering by S. P. Arora & S. C. Saxena
2. Railway Engineering by M. M. Aggrawal.

References

1. Railway Engineering by Rangwala (Charotar Publishing House).
2. Airport Engineering by Rangwala (Charotar Publishing House).
3. Airport Planning & Design by Khanna , Arora & Jain Nem Chand & Brothers).
4. Docs & Harbour Engineering by Bindra (Dhanpat Rai Publishing Company).
5. Docs & Harbour Engineering by Rangwala (Charotar Publishing House).
6. Docs & Harbour Engineering by Oza (Charotar Publishing House).

RCE077 Air & Noise Pollution Control   (L-T-P 3-1-0)   Credit - 4

UNIT- I Air pollution: composition and structure of atmosphere, global implications of air pollution. classification of air pollutants: particulates, hydrocarbon, carbon monoxide, oxides of sulphur, oxides of nitrogen and photochemical oxidants. Indoor air pollution. Effects of air pollutants on humans, animals, property and plants. **[8]**

UNIT - II Air pollution chemistry, meteorological aspects of air pollution dispersion; temperature lapse rate and stability, wind velocity and turbulence, plume behaviour, dispersion of air pollutants, the Gaussian Plume Model, stack height and dispersion. **[8]**

UNIT - III Ambient air quality and standards, air sampling and measurements. Control of particulate air pollutants using gravitational settling chambers, cyclone separators, wet collectors, fabric filters (Bag-house filter), electrostatic precipitators (ESP). **[8]**

UNIT - IV Control of gaseous contaminants: Absorption, Adsorption, Condensation and Combustion, Control of sulphur oxides, nitrogen oxides, carbon monoxide, and hydrocarbons. Automotive emission control, catalytic convertor, Euro-I, Euro-II and Euro-III specifications, Indian specifications.   **[8]**

UNIT - V Noise pollution: Basics of acoustics and specification of sound; sound power, sound intensity and sound pressure levels; plane, point and line sources, multiple sources; outdoor and indoor noise propagation; psychoacoustics and noise criteria, effects of noise on health, annoyance rating schemes; special noise environments: Infrasound, ultrasound, impulsive sound and sonic boom; noise standards and limit values; noise instrumentation and monitoring procedure. Noise indices. Noise control methods.   **[8]**

References:

1. Peavy, Rowe and Tchobanoglous: Environmental Engineering.
2. Martin Crawford: Air Pollution Control Theory.
3. Wark and Warner: Air Pollution: Its Origin and Control.
4. Rao and Rao: Air Pollution Control Engineering.
5. Nevers: Air Pollution Control Engineering.
6. Mycock, McKenna and Theodore: Handbook of Air Pollution Control Engineering and Technology. Suess and Craxford: W.H.O. Manual on Urban Air Quality Management
7. C.S. Rao, Air pollution and control
8. Advanced Air and Noise Pollution Control by Lawrence K. Wang, Norman C. Pereira & Yung Ise Hung.
9. Noise Pollution and Control by S. P.Singhal , Narosa Pub House
10. Textbook of Noise Pollution and Its Control by S. C. Bhatia, Atlantic; Edition

RCE078 Ground Improvement Techniques   (L-T-P 3-1-0)   Credit - 4

UNIT -I Introduction, Review of compaction theory, effect of compaction on surface behaviour, Field methods of compaction, Quality Control, Design of soil-lime, soil-cement, soil-bitumen and soil-lime-flyash mixes.   **[8]**

UNIT -II In-situ densification methods in granular soils, Deep compaction: Introduction, Terra-Probe, Vibroflotation techniques, Ground Suitability for Vibroflotation, Advantages, Mueller Resonance Compaction, Dynamic Compaction, Depth of Improvement.
     [8]

UNIT -III In-situ densification methods in cohesive soil: Introduction, Pre-loading and de-watering, Vertical drains, Electrical method, Thermal method.   **[8]**
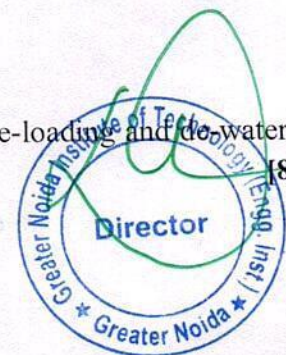
RCE 084 Solid Waste Management   (L-T-P 3-1-0)   Credit - 4

UNIT-I Solid waste: Public health and ecological impacts, Sources and types of solid wastes, material flow and waste generation, Functional elements: Waste generation, storage, collection, Transfer and transport, processing and recovery, disposal. Physical and chemical composition of municipal solid waste, integrated solid waste management, hierarchy of waste management options, different methods for generation rates. Storage: movable bins, fixed bins. Collection: home to home collection, community bin system. Theory and design of hauled container system, stationary container system. **[8]**

UNIT-II Transportation: handcart, tri-cycle, animal cart, tripper truck, dumper placer, bulk refuse carrier, railroad transport, water transport, conveyors, layout of routes. Engineering system for on-site handling and processing of solid waste: separators, size reduction equipments, screening equipments, densification, baling, cubing, pelleting equipments.   **[8]**

UNIY-III Landfilling: Site selection criteria, landfill layout, landfill sections, Occurrence of gases and leachate in landfills: composition and characteristics, generation factors, initial adjustment phase, transition phase, acid formation phase, methane formation phase, maturation phase of gases and leachate, Introduction to engineered landfills.   **[8]**

UNIT-IV Composting, types of composting, process description, design and operational consideration of aerobic composting, process description, design and operational consideration of anaerobic composting. Thermal conversion technologies: incineration and pyrolysis system, energy recovery, system. Overview of solid waste management practices in India.   **[8]**

UNIT-V Introduction to Hazardous wastes, Definition of Hazardous waste, The magnitude of the problem; Hazardous waste: Risk assessment, Environmental legislation, Characterization and site assessment, Waste minimization and resource recovery, Transportation of hazardous waste, Disposal of hazardous waste.
Introduction to Electronic waste and Biomedical waste and their disposal.   **[8]**

References:
1. Tchobanoglous, G., Theisen, H., & Vigil, S.A; Integrated Solid Waste Management: McGraw Hill, New York
2. Solid Waste Engineering, Principle & Management issues by Ven Te Chow
3. Bhide, A.D., B.B. Sundaresan, Solid Waste Management in developing countries.
4. Manual on Municipal solid Waste Management, CPHEEO, Govt. of India.
5. Guidelines for Management and Handling of Hazardous wastes MOEF (1991), Govt. of India.
6. Datta, M; Waste Disposal in Engineered Land fills, Narosa Publishers, Delhi.
7. Waste Management "Asian and Pacific Center for Transfer of Technology (N.D.) India", September 1993.

8. Solid and Hazardous Waste Management: Science and Engineering by M.N. Rao, Razia Sultana & Sri Harsha Kota

9. E-Waste Management: From Waste to Resource by Ramzy Kahhat, Klaus Hieronymi, Eric Williams.

10. Biomedical Waste Management by R. Radhakrishan

11. Electronic Waste Management (Issues in Environmental Science and Technology) by R. E. Hester , R. M. Harrison & Martin T. Goosey

RCE085 Engineering Hydrology & Groundwater Management

(L-T-P 3-0-0)   Credit - 3

UNIT – I Introduction: hydrologic cycle, water budget equations, world water balance, Precipitation: Forms of precipitation, measurement. Introduction to characteristics of storm. Abstraction from Precipitation: Evaporation – process, measurement and estimation; Evapotranspiration-measurement and estimation; Initial Losses- Interception & Depression storage; Infiltration- process, capacities indices, measurement & estimation.   **[8]**

UNIT – II Runoff and Hydrographs: Runoff characteristics of stream, mass curve. Hydrograph, Factors affecting flood hydrographs, unit hydrograph and its analysis, s-curve hydrograph, synthetic and instantaneous unit hydrographs.   **[8]**

UNIT – III Flood: Rational method, empirical formulae, flood frequency studies, statistical analysis, regional flood frequency analysis, design storm & design flood, risk/reliability and safety factor; Flood Routing: Basic equation, hydrologic storage routing & attenuation, hydrologic channel routing, flood forecasting & control, hydraulic method of flood routing.   **[8]**

UNIT – IV Groundwater: Introduction, forms of subsurface water, aquifers & its properties, Occurrence of ground water, hydro-geology & aquifers, Ground water movement.

Steady and unsteady flow through confined and unconfined aquifers. Well Hydraulics: Single& Multiple well system, partially penetrating wells, Image wells, Mutual interference of wells, well losses, specific capacity.   **[8]**

UNIT – V Water Wells: Introduction to Well construction, completion and Development. Pumping equipment for water wells, maintenance of wells.

Ground Water quality, Contamination of groundwater and its Control, Ground Water Modelling Techniques and exploration, Artificial discharge and Recharge of Ground Water, Roof-top rainwater harvesting and recharge.   **[8]**

Text Books:
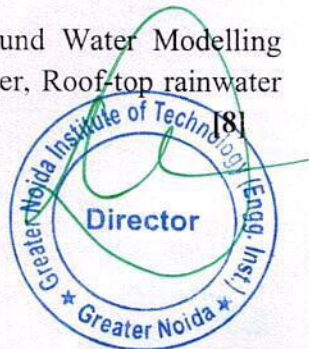
	KVE401	Universal Human Values and Professional Ethics	L	T	P	C
			3	0	0	3

Objectives:

1. To help students distinguish between values and skills, and understand the need, basic guidelines, content and process of value education.
2. To help students initiate a process of dialog within themselves to know what they 'really want to be' in their life and profession
3. To help students understand the meaning of happiness and prosperity for a human being.
4. To facilitate the students to understand harmony at all the levels of human living, and live accordingly.
5. To facilitate the students in applying the understanding of harmony in existence in their profession and lead an ethical life

Course Outcome:

On completion of this course, the students will be able to

1. Understand the significance of value inputs in a classroom, distinguish between values and skills, understand the need, basic guidelines, content and process of value education, explore the meaning of happiness and prosperity and do a correct appraisal of the current scenario in the society
2. Distinguish between the Self and the Body, understand the meaning of Harmony in the Self the Co-existence of Self and Body.
3. Understand the value of harmonious relationship based on trust, respect and other naturally acceptable feelings in human-human relationships and explore their role in ensuring a harmonious society
4. Understand the harmony in nature and existence, and work out their mutually fulfilling participation in the nature.
5. Distinguish between ethical and unethical practices, and start working out the strategy to actualize a harmonious environment wherever they work.

Catalogue Description

Every human being has two sets of questions to answer for his life: a) what to do? and, b) how to do?. The first set pertains to the value domain, and the other to the skill domain. Both are complimentary, but value domain has a higher priority. Today, education has become more and more skill biased, and hence, the basic aspiration of a human being, that is to live with happiness and prosperity, gets defeated, in spite of abundant technological progress. This course is aimed at giving inputs that will help to ensure the right understanding and right feelings in the students in their life and profession, enabling them to lead an ethical life. In this course, the students learn the process of self-exploration, the difference between the Self and the Body, the naturally acceptable feelings in relationships in a family, the comprehensive human goal in the society, the mutual fulfillment in the nature and the co-existence in existence. As a natural outcome of such inputs, they are able to evaluate an ethical life and profession ahead.
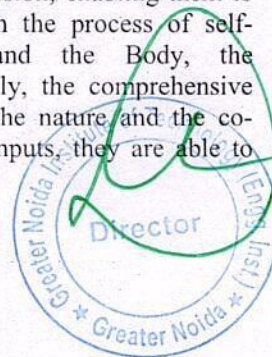
UNIT-1 **Course Introduction - Need, Basic Guidelines, Content and Process for Value Education**

Understanding the need, basic guidelines, content and process for Value Education, Self-Exploration–what is it? - its content and process; 'Natural Acceptance' and Experiential Validation- as the mechanism for self exploration, Continuous Happiness and Prosperity- A look at basic Human Aspirations, Right understanding, Relationship and Physical Facilities- the basic requirements for fulfillment of aspirations of every human being with their correct priority, Understanding Happiness and Prosperity correctly- A critical appraisal of the current scenario, Method to fulfill the above human aspirations: understanding and living in harmony at various levels.

UNIT-2 **Understanding Harmony in the Human Being - Harmony in Myself**

Understanding human being as a co-existence of the sentient 'I' and the material 'Body', Understanding the needs of Self ('I') and 'Body' - Sukh and Suvidha, Understanding the Body as an instrument of 'I' (I being the doer, seer and enjoyer), Understanding the characteristics and activities of 'I' and harmony in 'I', Understanding the harmony of I with the Body: Sanyam and Swasthya; correct appraisal of Physical needs, meaning of Prosperity in detail,   Programs   to ensure Sanyam and Swasthya.

UNIT-3 **Understanding Harmony in the Family and Society- Harmony in Human-Human Relationship**

Understanding harmony in the Family- the basic unit of human interaction , Understanding values in human-human relationship; meaning of *Nyaya* and program for its fulfillment to ensure *Ubhay-tripti*; Trust (*Vishwas*) and Respect (*Samman*) as the foundational values of relationship, Understanding the meaning of *Vishwas*; Difference between intention and competence, Understanding the meaning of *Samman*, Difference between respect and differentiation; the other salient values in relationship, Understanding the harmony in the society (society being an extension of family): *Samadhan*, *Samridhi*, *Abhay*, *Sah-astitva* as comprehensive Human Goals, Visualizing a universal harmonious order in society- Undivided Society (*AkhandSamaj*), Universal Order (*SarvabhaumVyawastha*)- from family to world family!.

UNIT-4 **Understanding Harmony in the Nature and Existence - Whole existence as Co-existence**

Understanding the harmony in the Nature, Interconnectedness and mutual fulfillment among the four orders of nature- recyclability and self-regulation in nature, Understanding Existence as Co-existence (*Sah-astitva*) of mutually interacting units in all-pervasive space, Holistic perception of harmony at all levels of existence.

UNIT-5 **Implications of the above Holistic Understanding of Harmony on Professional Ethics**

Natural acceptance of human values, Definitiveness of Ethical Human Conduct, Basis for Humanistic Education, Humanistic Constitution and Humanistic Universal Order, Competence in Professional Ethics: a) Ability to utilize the professional competence for augmenting universal human order, b)   Ability   to identify the scope and characteristics of people-friendly and eco-friendly
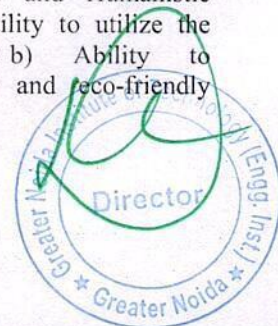
production systems, technologies and management models, Case studies of typical holistic technologies, management models and production systems, Strategy for transition from the present state to Universal Human Order: a) At the level of individual: as socially and ecologically responsible engineers, technologists and managers, b) At the level of society: as mutually enriching institutions and organizations.

Text Books:

1. R R Gaur, R Sangal, G P Bagaria, 2009, A Foundation Course in Human Values and Professional Ethics.

References:

1. Ivan Illich, 1974, Energy & Equity, The Trinity Press, Worcester, and Harper Collins, USA
2. E.F. Schumacher, 1973, Small is Beautiful: a study of economics as if people mattered, Blond & Briggs, Britain.
3. Sussan George, 1976, How the Other Half Dies, Penguin Press. Reprinted 1986, 1991
4. Donella H. Meadows, Dennis L. Meadows, Jorgen Randers, William W. Behrens III, 1972, Limits to Growth – Club of Rome's report, Universe Books.
5. A Nagraj, 1998, Jeevan Vidya Ek Parichay, Divya Path Sansthan, Amarkantak.
6. P L Dhar, RR Gaur, 1990, Science and Humanism, Commonwealth Publishers.
7. A N Tripathy, 2003, Human Values, New Age International Publishers.
8. SubhasPalekar, 2000, How to practice Natural Farming, Pracheen (Vaidik) KrishiTantraShodh, Amravati.
9. E G Seebauer & Robert L. Berry, 2000, Fundamentals of Ethics for Scientists & Engineers , Oxford University Press
10. M Govindrajran, S Natrajan & V.S. Senthil Kumar, Engineering Ethics (including Human Values), Eastern Economy Edition, Prentice Hall of India Ltd.
11. B P Banerjee, 2005, Foundations of Ethics and Management, Excel Books.
12. B L Bajpai, 2004, Indian Ethos and Modern Management, New Royal Book Co., Lucknow. Reprinted 2008.

Mode of Evaluation:

Assignment/ Seminar/Continuous Assessment Test/Semester End Exam
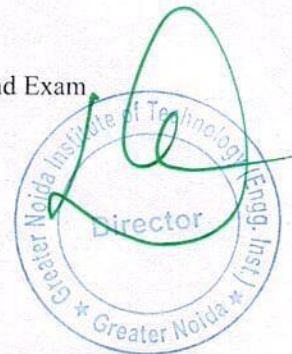
INDIAN TRADITIONS, CULTURAL AND SOCIETY

L: T:P: 2: 0:0

Module 1- Society State and Polity in India

State in Ancient India: Evolutionary Theory, Force Theory, Mystical Theory Contract Theory, Stages of State Formation in Ancient India, Kingship , Council of Ministers Administration Political Ideals in Ancient India Conditions' of the Welfare of Societies, The Seven Limbs of the State, Society in Ancient India, Purusārtha, Varnāshrama System, Āshrama or the Stages of Life, Marriage, Understanding Gender as a social category, The representation of Women in Historical traditions, Challenges faced by Women. Four-class Classification, Slavery.

Module 2- Indian Literature, Culture, Tradition, and Practices

Evolution of script and languages in India: Harappan Script and Brahmi Script. The Vedas, the Upanishads, the Ramayana and the Mahabharata, Puranas, Buddhist And Jain Literature in Pali,Prakrit And Sanskrit, Kautilya's Arthashastra, Famous Sanskrit Authors, Telugu Literature, Kannada Literature,Malayalam Literature ,Sangama Literature Northern Indian Languages & Literature, Persian And Urdu ,Hindi Literature

Module 3- Indian Religion, Philosophy, and Practices

Pre-Vedic and Vedic Religion, Buddhism, Jainism, Six System Indian Philosophy, Shankaracharya, Various Philosophical Doctrines , Other Heterodox Sects, Bhakti Movement, Sufi movement, Socio religious reform movement of 19th century, Modern religious practices.

Module 4-Science, Management and Indian Knowledge System

Astronomy in India, Chemistry in India, Mathematics in India, Physics in India, Agriculture in India, Medicine in India ,Metallurgy in India, Geography, Biology, Harappan Technologies, Water Management in India, Textile Technology in India ,Writing Technology in India Pyrotechnics in India Trade in Ancient India/,India's Dominance up to Pre-colonial Times

Module 5- Cultural Heritage and Performing Arts

Indian Architect, Engineering and Architecture in Ancient India, Sculptures, Seals, coins, Pottery, Puppetry, Dance, Music, Theatre, drama, Painting, Martial Arts Traditions, Fairs and Festivals, Current developments in Arts and Cultural, Indian's Cultural Contribution to the World. Indian Cinema

COURSE OBJECTIVES:

- The course aims at imparting basic principles of thought process, reasoning and inference to identify the roots and details of some of the contemporary issues faced by our nation and try to locate possible solutions to these challenges by digging deep into our past.
- To enable the students to understand the importance of our surroundings and encourage the students to contribute towards sustainable development.
- To sensitize students towards issues related to 'Indian' culture, tradition and its composite character.

- To make students aware of holistic life styles of Yogic-science and wisdom capsules in Sanskrit literature that are important in modern society with rapid technological advancements and societal disruptions.
- To acquaint students with Indian Knowledge System, Indian perspective of modern scientific world-view and basic principles of Yoga and holistic health care system.

COURSE OUTCOMES: Ability to understand, connect up and explain basics of Indian Traditional knowledge modern scientific perspective.

Suggested Pedagogy for Teachers

- Project based learning
- Case studies
- Group discussion
- Presentations

Suggested Text & Reference Books

1. V. Sivaramakrishna (Ed.), *Cultural Heritage of India-Course Material*, Bharatiya Vidya Bhavan, Mumbai, 5th Edition, 2014
2. S. Baliyan, *Indian Art and Culture*, Oxford University Press, India
3. Swami Jitatmanand, *Modern Physics and Vedant*, Bharatiya Vidya Bhavan
4. Romila Thapar, *Readings In Early Indian History* Oxford University Press , India
5. Fritz of Capra, Tao of Physics
6. Fritz of Capra, The wave of Life
7. V N Jha (English Translation), *Tarkasangraha of Annam Bhatta,* Inernational Chinmay Foundation,Velliarnad,Amaku,am
8. Yoga Sutra of Patanjali, Ramakrishna Mission, Kolkatta
9. GN Jha (Eng. Trans.) Ed. R N Jha, *Yoga-darshanam with Vyasa Bhashya*, Vidyanidhi Prakasham, Delhi,2016
10. RN Jha, Science of Consciousness Psychotherapy and Yoga Practices, Vidyanidhi Prakasham, Delhi, 2016
11. P R Sharma (English translation), Shodashang Hridayam
12. Basham, A.L., *The Wonder that was India* (34th impression), New Delhi, Rupa & co
13. Sharma, R.S., *Aspects of Political Ideas and Institutions in Ancient India*(fourth edition), Delhi, Motilal Banarsidass,

CONSTITUTION OF INDIA, LAW AND ENGINEERING

L:T: P: 2: 0:0

Module 1--Introduction and Basic Information about Indian Constitution:

Meaning of the constitution law and constitutionalism, Historical Background of the Constituent Assembly, Government of India Act of 1935 and Indian Independence Act of 1947,Enforcement of the Constitution, Indian Constitution and its Salient Features, The Preamble of the Constitution, Fundamental Rights, Fundamental Duties, Directive Principles of State Policy, Parliamentary System, Federal System, Centre-State Relations, Amendment of the Constitutional Powers and Procedure, The historical perspectives of the constitutional amendments in India, Emergency Provisions: National Emergency, President Rule, Financial Emergency, and Local Self Government – Constitutional Scheme in India.

Module 2-Union Executive and State Executive:

Powers of Indian Parliament Functions of Rajya Sabha, Functions of Lok Sabha, Powers and Functions of the President, Comparison of powers of Indian President with the United States, Powers and Functions of the Prime Minister, Judiciary – The Independence of the Supreme Court, Appointment of Judges, Judicial Review, Public Interest Litigation, Judicial Activism, LokPal, Lok Ayukta, The Lokpal and Lok ayuktas Act 2013, State Executives – Powers and Functions of the Governor, Powers and Functions of the Chief Minister, Functions of State Cabinet, Functions of State Legislature, Functions of High Court and Subordinate Courts.

Module 3- Introduction and Basic Information about Legal System:

The Legal System: Sources of Law and the Court Structure: Enacted law -Acts of Parliament are of primary legislation, Common Law or Case law, Principles taken from decisions of judges constitute binding legal rules. The Court System in India and Foreign Courtiers (District Court, District Consumer Forum, Tribunals, High Courts, Supreme Court). Arbitration: As an alternative to resolving disputes in the normal courts, parties who are in dispute can agree that this will instead be referred to arbitration. Contract law, Tort, Law at workplace.

Module 4- Intellectual Property Laws and Regulation to Information:

Intellectual Property Laws: Introduction, Legal Aspects of Patents, Filing of Patent Applications, Rights from Patents, Infringement of Patents, Copyright and its Ownership, Infringement of Copyright, Civil Remedies for Infringement, Regulation to Information-Introduction, Right to Information Act, 2005, Information Technology Act, 2000, Electronic Governance, Secure Electronic Records and Digital Signatures, Digital Signature Certificates, Cyber Regulations Appellate Tribunal, Offences, Limitations of the Information Technology Act.

Module 5 -Business Organizations and E-Governance:

Sole Traders, Partnerships: Companies: The Company's Act: Introduction, Formation of a Company, Memorandum of Association, Articles of Association, Prospectus, Shares, Directors, General Meetings and Proceedings, Auditor, Winding up.
E-Governance and role of engineers in E-Governance, Need for reformed engineering serving at the Union and State level, Role of I.T. professionals in Judiciary, Problem of Alienation and Secessionism in few states creating hurdles in Industrial development.
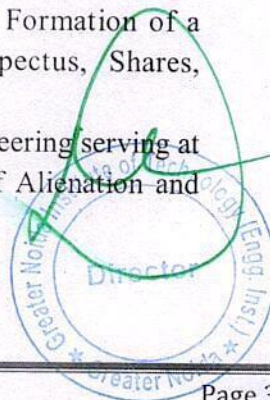
COURSE OBJECTIVE:

- To acquaint the students with legacies of constitutional development in India and help those to understand the most diversified legal document of India and philosophy behind it.
- To make students aware of the theoretical and functional aspects of the Indian Parliamentary System.
- To channelize students' thinking towards basic understanding of the legal concepts and its implications for engineers.
- To acquaint students with latest intellectual property rights and innovation environment with related regulatory framework.
- To make students learn about role of engineering in business organizations and e-governance.

COURSE OUTCOME: At the end of the course, learners should be able to-

1. Identify and explore the basic features and modalities about Indian constitution.
2. Differentiate and relate the functioning of Indian parliamentary system at the center and state level.
3. Differentiate different aspects of Indian Legal System and its related bodies.
4. Discover and apply different laws and regulations related to engineering practices.
5. Correlate role of engineers with different organizations and governance models

Pedagogy: Lecture, Problem based learning, Group discussions, Visual media, Films, Documentaries, Debate forums.

Suggested Readings:

- Brij Kishore Sharma: *Introduction to the Indian Constitution*, 8th Edition, PHI Learning Pvt. Ltd.
- Granville Austin: *The Indian Constitution: Cornerstone of a Nation (Classic Reissue)*, Oxford University Press.
- S.G Subramanian: *Indian Constitution and Indian Polity*, 2nd Edition, Pearson Education 2020.
- Subhash C. Kashyap: *Our Constitution: An Introduction to India's Constitution and constitutional Law*, NBT, 2018.
- Madhav Khosla: *The Indian Constitution*, Oxford University Press.
- PM Bakshi: *The Constitution of India*, Latest Edition, Universal Law Publishing.
- V.K. Ahuja: *Law Relating to Intellectual Property Rights* (2007)
- Suresh T. Viswanathan: *The Indian Cyber Laws, Bharat Law House*, New Delhi-88
- P. Narayan: Intellectual Property Law, Eastern Law House, New Delhi
- Prabudh Ganguli: *Gearing up for Patents: The Indian Scenario*, Orient Longman.
- BL Wadehra: Patents, Trademarks, *Designs and Geological Indications Universal Law* Publishing - LexisNexis.
- *Intellectual Property Rights: Law and Practice, Module III* by ICSI (only relevant sections)
- Executive programme study material Company Law, Module II, by ICSI (The Institute of Companies Secretaries of India) (Only relevant sections i.e., Study 1, 4 and 36).https://www.icsi.edu/media/webmodules/publications/Company%20Law.pdf
- Handbook on e-Governance Project Lifecycle, Department of Electronics & Information Technology, Government of India, https://www.meity.gov.in/writereaddata/files/e-Governance_Project_Lifecycle_Participant_Handbook-5Day_CourseV1_20412.pdf
- Companies Act, 2013 Key highlights and analysis by PWC. https://www.pwc.in/assets/pdfs/publications/2013/companies-act-2013-key-highlights-and-analysis.pdf
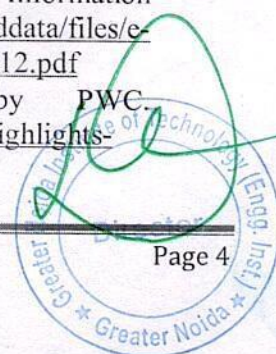
Referred Case Studies:

- Keshavanand Bharati V. State of Kerala, AIR 1973 SC 1461.
- Maneka Gandhi V. Union of India AIR, 1978 SC 597.
- S.R. Bammai V. Union of India, AIR 1994 SC 1918.
- Kuldip Nayyar V. Union of India, AIR 2006 SC312.
- A.D.M. Jabalpur V. ShivkantShakla, AIR 1976 SC1207.
- Remshwar Prasad V. Union of India, AIR 2006 SC980.
- Keshav Singh in re, AIR 1965 SC 745.
- Union of India V. Talsiram, AIR 1985 SC 1416.
- Atiabari Tea Estate Co.V. State of Assam, AIR 1961SC232.
- SBP & Co. Vs. Patel Engg. Ltd. 2005 (8) SCC 618.
- Krishna Bhagya Jala Nigam Ltd. Vs. G. Arischandra Reddy (2007) 2 SCC 720.
- Oil & Natural Gas Corporation Vs. Saw Pipes Ltd. 2003 (4) SCALE 92 – 185.

** (Other relevant case studies can be consulted by the teacher as per the topic).

Prescribed Legislations:

1. Information Technology Act, 2000 with latest amendments.
2. RTI Act 2005 with latest amendments.
3. Information Technology Rules, 2000
4. Cyber Regulation Appellate Tribunal Rules, 2000

Suggested aid for Students and Pedagogic purpose
- RSTV debates on corporate law, IPR and patent issues
- NPTEL lectures on IPR and patent rights

Episodes of 10 -part mini TV series "Samvidhan: The Making of Constitution of India" by RSTV.
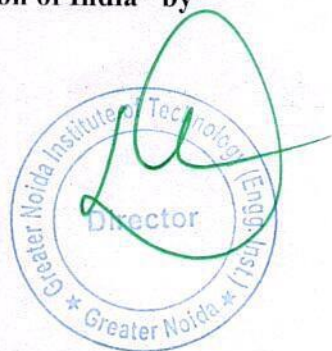
Subject Name: <u>Understanding the Human Being Comprehensively – Human Aspirations and its Fulfillment</u>

Pre-requisites- AUC-001 or RVE 301/401 "Universal Human Values and Professional Ethics"

Subject Code: ROE074   [L-T-P: 3-0-0]

Course Objectives:

1. To help the students having the clarity about human aspirations, goal, activities and purpose of life.

2. To facilitate the competence to understand the harmony in nature/existence and participation of human being in the nature/existence.

3. To help the students to develop the understanding of human tradition and its various components.

Course Methodology:

1. The methodology of this course is explorational and thus universally adaptable. It involves a systematic and rational study of the human being vis-à-vis the rest of existence.

2. It is free from any dogma or set of do's and don'ts related to values.

3. It is a process of self-investigation and self-exploration, and not of giving sermons. Whatever is found as truth or reality is stated as a proposal and the students are facilitated and encouraged to verify it in their own right, based on their Natural Acceptance and subsequent Experiential Validation.

4. This process of self-exploration takes the form of a dialogue between the teacher and the students to begin with, and then to continue within the student leading to continuous self-evolution.

5. This self-exploration also enables them to critically evaluate their pre-conditionings and present beliefs.

Module 1:   Introduction
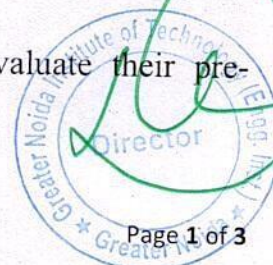
The basic human aspirations and their fulfillment through Right understanding and Resolution; All-encompassing Resolution for a Human Being, its details and solution of problems in the light of Resolution

Module 2: Understanding Human being and its expansion.

The domain of right understanding starts from understanding the human being (the knower, the experiencer and the doer); and extends up to understanding nature/existence – its interconnectedness and co-existence; and finally understanding the role of human being in existence (human conduct).

Module 3: Activities of the Self.

Understanding the human being comprehensively is the first step and the core theme of this course; human being as co-existence of the self and the body; the activities and potentialities of the self; Reasons for harmony/contradiction in the self

Module 4: Understanding Co-existence with other orders.

The need and the process of inner evolution (through self-exploration, self-awareness and self-evaluation)- particularly awakening to activities of the Self: Realization, Understanding and Contemplation in the Self (Realization of Co-Existence, Understanding of Harmony in Nature and Contemplation of Participation of Human in this harmony/ order leading to comprehensive knowledge about the existence).

Module 5: Expansion of harmony from self to entire existence.

Understanding different aspects of All-encompassing Resolution (understanding, wisdom, science etc.), Holistic way of living for Human Being with All-encompassing Resolution covering all four dimensions of human endeavour viz., realization, thought, behavior and work (participation in the larger order) leading to harmony at all levels from self to Nature and entire Existence

Reference Books:

1. A Foundation Course in Human Values and Profession Ethics (Text Book and Teachers' Manual), R. R. Gaur, R. Sangal, G. P. Bagaria (2010), Excel Books, New Delhi [ISBN 978-8-174-46781-2]

2. Avartansheel Arthshastra, A. Nagraj, Divya Path Sansthan, Amarkantak, India

3. Economy of Permanence – (a quest for social order based on non-violence), J. C. Kumarappa (2010), Sarva-Seva-Sangh-Prakashan, Varansi, India

4. Energy and Equity, Ivan Illich (1974), The Trinity Press, Worcester & Harper Collins, USA

5. IshandiNauUpnishad, Shankaracharya, Geeta press, Gorakhpur,

6. Manav Vyavahar Darshan, A. Nagraj, Divya Path Sansthan, Amarkantak, India

7. Manaviya Sanvidhan, A. Nagraj, Divya Path Sansthan, Amarkantak, India

8. MahasatipatthanSutta , S N Goenka, Vipassana Research Institute, First Edition, 1996

9. Small Is Beautiful: A Study of Economics as if People Mattered, E. F. Schumacher, 1973, Blond & Briggs, UK

10. Slow is Beautiful, Cecile Andrews http://www.newsociety.com/Books/S/Slow-is-Beautiful)

11. Science & Humanism – towards a unified worldview, P. L. Dhar & R. R. Gaur (1990), Commonwealth Publishers, New Delhi

12. Sanchian Sri Guru Granth Sahib Ji ,Shiromani GurdwaraParbhandhak Committee, 2001

13. SamanSuttam, JinendraVarni ,1974.

14. Vyavaharvadi Samajshastra, A. Nagraj, Divya Path Sansthan, Amarkantak, India

15. Vyavahatmak Janvad, A. Nagraj, Divya Path Sansthan, Amarkantak, India.
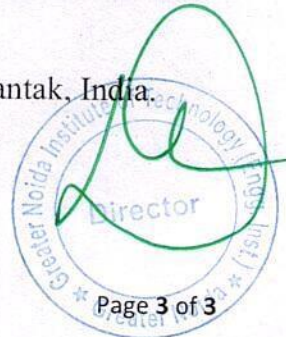
ROE087   HUMAN VALUES IN MADHYASTH DARSHAN   **L   T   P**
                                                    3   0   0

Prerequisite: RVE 301/401- Universal Human Values and Professional Ethics

Objectives:
1. To help students understand the basic principles of Madhyasth Darshan
2. To help students understand the existential realities including the human existence through Madhyasth Darshan .
3. To help them to see the participation of human beings in the nature/ existential realities (i.e. human values) and therefore the human conduct through each one of them
4. To help students apply this understanding to make their living better at different levels- individual, family, society and nature
5. To facilitate the students in applying this understanding in their profession and lead an ethical life

Catalogue Description

Madhyasth Darshan is a new emerging philosophy that describes the existential realities along with its implication in behaviour and work at the level of individual as well as society. This philosophy has been propounded by Shri A. Nagraj in seventies.

It is to be kept in mind that Darshan means realisation which calls for developing the capacity to see the reality in oneself directly. So, any study of Darshan shall help develop this capacity in the students through proper steps of practices and shall not just provide the information.

UNIT-I   **Introduction to Madhyasth Darshan and its Basics**
Need to study Madhyasth Darshan; introduction, basic formulations of the darshan; the complete expanse of study and the natural outcome of living according to the darshan.

UNIT-II   **Submergence of Nature in Space**
The ever-present existence in the form of nature submerged in space; nature classified into two categories – material and consciousness, and four orders; the form, property, natural characteristic and self-organisation of the four orders, General direction and process of evolution in the nature/ existence.

UNIT-III   **Human Being as an indivisible part of Nature**
Human being as an indivisible part of nature; various types (five classes) of human beings; human being in the combination of self and body; purpose of self as realization, prosperity for the body; need of behavior and work for attaining the goals of realization and prosperity.

UNIT-IV   **Fulfillment of human goal of realization and prosperity**
Following natural, social and psychological principles for actualizing the human goal; Form of conducive society and order for such practices, study process- achieving realization through self-study and practice while living in such a society (social order).

UNIT-V   **Human Conduct based on Madhyasth Darshan**
Description of such a realized self, continuity of happiness, peace, satisfaction and bliss through realization, conduct of a realized human being. Possibility of finding solutions to present day problems (such as inequality of rich and poor, man and woman etc.) in the light of it.

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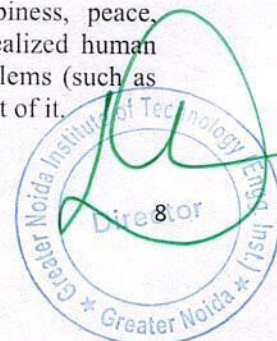
Text Books:

1. Nagraj, A., "Manav Vyavahar Darshan", Jeevan Vidya Prakashan, 3rd edition, 2003.

References:

1. Nagraj, A., "Vyavaharvadi Samajshastra", Jeevan Vidya Prakashan, 2nd edition, 2009.
2. Nagraj, A., "Avartanasheel Arthashastra", Jeevan Vidya Prakashan, 1st edition, 1998.

Mode of Evaluation:

Assignment/ Seminar/Continuous Assessment Test/Semester End Exam

ROE088 VALUES, RELATIONSHIP & ETHICAL HUMAN CONDUCT–FOR A HAPPY & HARMONIOUS SOCIETY L T P 3 0 0

Pre-requisites- for this subject only those faculty will teach these courses who had done the FDP for these courses.

Course Objectives:

1. To help the students to understand the importance and types of relationship with expressions.
2. To develop the competence to think about the conceptual framework of undivided society as well as universal human order.
3. To help the students to develop the exposure for transition from current state to the undivided society and universal human order.

Course Methodology:

1. The methodology of this course is explorational and thus universally adaptable. It involves a systematic and rational study of the human being vis-à-vis the rest of existence.
2. It is free from any dogma or set of do's and don'ts related to values.
3. It is a process of self-investigation and self-exploration, and not of giving sermons. Whatever is found as truth or reality is stated as a proposal and the students are facilitated and encouraged to verify it in their own right, based on their Natural Acceptance and subsequent Experiential Validation.
4. This process of self-exploration takes the form of a dialogue between the teacher and the students to begin with, and then to continue within the student leading to continuous self-evolution.
5. This self-exploration also enables them to critically evaluate their pre-conditionings and present beliefs.

UNIT-I	**Introduction to the course:** Basic aspiration of a Human Being and program for its fulfillment, Need for family and relationship for a Human Being, Human-human relationship and role of behavior in its fulfillment, Human-rest of Nature relationship and role of work in its fulfillment, Comprehensive Human Goal, Need for Undivided Society, Need for Universal Human Order, an appraisal of the Current State, Appraisal of Efforts in this Direction in Human History.
UNIT-II	**Understanding Human-Human Relationship & its fulfillment:** Recognition of Human-Human Relationship, Recognition of feelings in relationship, Established Values and Expressed Values in Relationship, interrelatedness of feelings and their fulfillment, Expression of feelings, Types of relationship and their purpose, mutual evaluation in relationship, Meaning of justice in relationship, Justice leading to culture, civilization and Human Conduct.
UNIT-III	**Justice from family to world family order:** Undivided Society as continuity and expanse of Justice in behavior – family to world family order, continuity of culture and civilization, Universal Order on the basis of Undivided Society, Conceptual Framework for Universal human order, Universal Human Order as continuity and expanse of order in living: from family order to world family order, a conceptual framework for universal human order.

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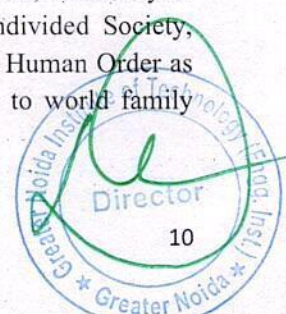
UNIT-IV **Program for Ensuring Undivided Society and Universal Human Order:** Education – Sanskar, Health – Sanyam, Production-work, Exchange – storage, Justice-preservation.

UNIT-V **Human Tradition:** Scope and Steps of Universal Human Order, Human Tradition (Ex. Family order to world family order), Steps for transition from the current state, Possibilities of participation of students in this direction, Present efforts in this direction, Sum up.

Text books:

1. A Foundation Course in Human Values and Profession Ethics (Text Book and Teachers' Manual), R. R. Gaur, R. Asthana, G. P. Bagaria (2010), Excel Books, New Delhi.
2. Avartansheel Arthshastra, A. Nagraj, Divya Path Sansthan, Amarkantak, India.
3. An Appeal by the Dalai Lama to the World: Ethics Are More Important Than Religion , Dalai Lama XIV, 2015.
4. Economy of Permanence – (a quest for social order based on non-violence), J. C. Kumarappa (2010), Sarva-Seva-Sangh-Prakashan, Varansi, India.
5. Energy and Equity, Ivan Illich (1974), The Trinity Press, Worcester & Harper Collins, USA.
6. Human Society, Kingsley Davis, 1949.
7. Hind Swaraj or, Indian home rule Mohandas K. Gandhi, 1909.
8. Integral Humanism, Deendayal Upadhyaya, 1965.
9. Lohiya Ke Vichar, Lok Bharti , Rammanohar Lohiya, 2008.
10. Manav Vyavahar Darshan, A. Nagraj, Divya Path Sansthan, Amarkantak, India.
11. Manaviya Sanvidhan, A. Nagraj, Divya Path Sansthan, Amarkantak, India
12. Samadhanatmak Bhautikvad, A. Nagraj, Divya Path Sansthan, Amarkantak, India
13. Small Is Beautiful: A Study of Economics as if People Mattered, E. F. Schumacher, 1973, Blond & Briggs, UK.
14. Slow is Beautiful, Cecile Andrews (http://www.newsociety.com/Books/S/Slow-is-Beautiful)
15. Sociology Themes and Perspectives, Harper Collins; EIGHT edition (2014), Martin Holborn and Peter Langley, 1980.
16. Samagra kranti: Jaya Prakash Narayan's philosophy of social change, Siddharth Publications Renu Sinha, 1996.
17. Science & Humanism – towards a unified worldview, P. L. Dhar & R. R. Gaur (1990), Commonwealth Publishers, New Delhi
18. Vyavaharvadi Samajshastra, A. Nagraj, Divya Path Sansthan, Amarkantak, India.
19. Vyavahatmak Janvad, A. Nagraj, Divya Path Sansthan, Amarkantak, India.
20. The Communist Manifesto, Karl Marx, 1848.
21. Toward a True Kinship of Faiths: How the World's Religions Can Come Together Dalai Lama XIV, 2011.

Reference Videos.

1. kin school (30 minutes)
2. Technology (Solar City etc.).
3. Natural Farming.
4. Economics of Happiness (1h 8m)

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

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 Behaviour‖, 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 Behaviour‖, 12th Edition, McGraw Hill International Edition
9. Aswathappa K, ―Organizational Behaviour (Text, Cases and Games)‖, Himalaya Publication
10. UdaiPareek, ―Organizational Behavior‖, Oxford University Press
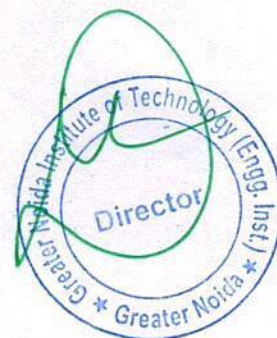
BUSINESS COMMUNICATION

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
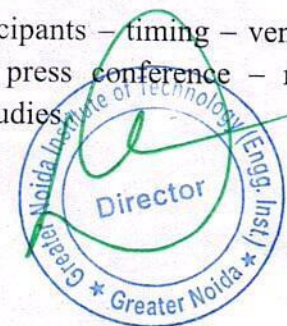
Course Outcomes

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.
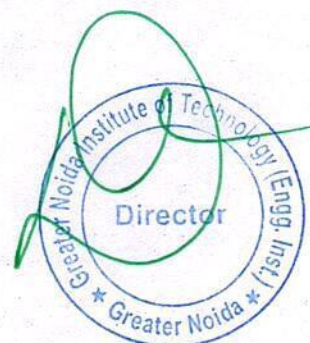
Technical Communication
(KAS301/401)
(Effective from the session 2019-20)

LTP
2 1 0

Unit -1 Fundamentals of Technical Communication:
Technical Communication: Features; Distinction between General and Technical Communication; Language as a tool of Communication; Dimensions of Communication: Reading & comprehension; Technical writing: sentences; Paragraph; Technical style: Definition, types & Methods; The flow of Communication: Downward; upward, Lateral or Horizontal; Barriers to Communication.

Unit - II Forms of Technical Communication:
Technical Report: Definition & importance; Thesis/Project writing: structure & importance; synopsis writing: Methods; Technical research Paper writing: Methods & style; Seminar & Conference paper writing; Expert Technical Lecture: Theme clarity; Analysis & Findings; 7 Cs of effective business writing: concreteness, completeness, clarity, conciseness, courtesy, correctness, consideration, C.V./Resume writing; Technical Proposal: Types, Structure & Draft.

Unit - III Technical Presentation: Strategies & Techniques
Presentation: Forms; interpersonal Communication; Class room presentation; style; method; Individual conferencing: essentials: Public Speaking: method; Techniques: Clarity of substance; emotion; Humour; Modes of Presentation; Overcoming Stage Fear; Audience Analysis & retention of audience interest; Methods of Presentation: Interpersonal; Impersonal; Audience Participation: Quizzes & Interjections.

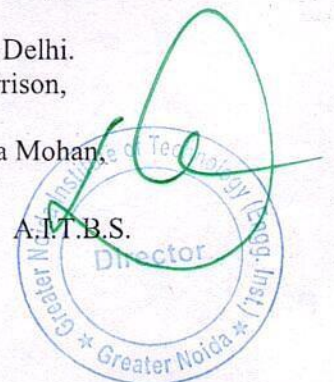### Unit - IV Technical Communication Skills:
Interview skills; Group Discussion: Objective & Method; Seminar/Conferences Presentation skills: Focus; Content; Style; Argumentation skills: Devices: Analysis; Cohesion & Emphasis; Critical thinking; Nuances: Exposition narration & Description; effective business communication competence: Grammatical; Discourse competence: combination of expression & conclusion; Socio-linguistic competence: Strategic competence: Solution of communication problems with verbal and non verbal means.

Unit - V Dimensions of Oral Communication & Voice Dynamics:
Code and Content; Stimulus & Response; Encoding process; Decoding process; Pronunciation Etiquette; Syllables; Vowel sounds; Consonant sounds; Tone: Rising tone; Falling Tone; Flow in Speaking; Speaking with a purpose; Speech & personality; Professional Personality Attributes: Empathy; Considerateness; Leadership; Competence.

Reference Books

1. Technical Communication – Principles and Practices by Meenakshi Raman & Sangeeta Sharma, Oxford Univ. Press, 2007, New Delhi.
2. Personality Development and Soft Skills by Barun K. Mitra, OUP, 2012, New Delhi.
3. Spoken English- A Manual of Speech and Phonetics by R.K.Bansal & J.B.Harrison, Orient Blackswan, 2013, New Delhi.
4. Business Correspondence and Report Writing by Prof. R.C. Sharma & Krishna Mohan, Tata McGraw Hill & Co. Ltd., 2001, New Delhi.
5. Practical Communication: Process and Practice by L.U.B. Pandey; A.I.T.B.S. Publications India Ltd.; Krishan Nagar, 2014, Delhi.

6. Modern Technical Writing by Sherman, Theodore A (et.al); Apprentice Hall; New Jersey; U.S.
7. A Text Book of Scientific and Technical Writing by S.D. Sharma; Vikas Publication, Delhi.
8. Skills for Effective Business Communication by Michael Murphy, Harward University, U.S.
9. Business Communication for Managers by Payal Mehra, Pearson Publication, Delhi.

Course Outcomes

1. Students will be enabled to **understand** the nature and objective of Technical Communication relevant for the work place as Engineers.

2. Students will **utilize** the technical writing for the purposes of Technical Communication and its exposure in various dimensions.

3. Students would imbibe inputs by presentation skills to **enhance** confidence in face of diverse audience.

4. Technical communication skills will **create** a vast know-how of the application of the learning to promote their technical competence.

5. It would enable them to **evaluate** their efficacy as fluent & efficient communicators by learning the voice-dynamics.

KNC-101	SOFT SKILLS-I	2L:0T:0P

SOFT SKILLS-I

UNIT I- Basics of Applied Grammar and usage
Tenses: Part of Speech, Active & Passive Voice, Articles, Subject-verb agreement, Antonyms, Synonyms, Prefix and Suffix, Narration, Conditional sentences, Concord, Tag questions, punctuation marks.

UNIT II- Presentation and Interaction Skills
Speech Delivery, Interjecting: Objectives& Methodology; Group Discussion: Objectives & Methods; Theme Presentation: Methods; Argumentative skills: Pattern and Ingredients; Debate & Discussion: Unity, Coherence & Emphasis. Public Speaking: Audience Analysis: Approach and Style. Interviews: Types; Focus & Objectives.

UNIT III- Interpersonal Communication Skills
Features: Methods; Principles; Requisites; Team- work; Skills: Empathy, Emotional Intelligence, empathy and listening skills. Time Management; Attitude; Responsibility. Leadership qualities: Integrity; Values; Trust; Self-Confidence & Courage; Communication and Networking; Speed reading; Problem Solving & Trouble- Shooting

UNIT IV- Persuasion and Negotiation Skills
Definition; Understanding Attitude, Beliefs, Values and Behavior; The process of Persuasion: Analysis of Audience; Classification of Audience; Egoistic and Non-Egoistic; Specific Techniques for Specific Audience; Skills of Persuasion, Steps to Persuasion/Influence, Negotiation: Definition; Process of Negotiation: Characteristics; Qualities of good negotiator; Approaches to Negotiation.

UNIT V- Communication Skills
Introduction to oral communication, Nuances & Modes of Speech Delivery, Public speaking: confidence, clarity, and fluency, Non verbal Communication: Kinesics, Paralinguistic features of Voice-Dynamics, Proxemics, Chronemics, and Presentation Strategies: planning, preparation, organization, delivery.

Course Outcome:
Unit 1- Students will be enabled to **understand** the correct usage of grammar.
Unit 2- Students will **apply** the fundamental inputs of communication skills in making speech delivery, individual conference, and group communication.
**Unit 3-**Students will **evaluate** the impact of interpersonal communication on their performance as a professional and in obtaining professional excellence at the workplace.
Unit 4-Skills and techniques of persuasion and negotiation would **enhance** the level of students at multifarious administrative and managerial platforms.
Unit 5-Student will be able to **equip** with basics of communication skills and will **apply** it for practical and oral purposes by being honed up in presentation skills and voice-dynamics.

Prescribed Books:

1. **Technical Communication, (Second Ed.); O.U.P.,** Meenakshi Raman & S.Sharma New Delhi, 2011
2. **Business Communication for Managers**, Payal Mehra, Pearson, Delhi, 2012.
3. **Personality Development,** Harold R. Wallace et. al, Cengage Learning India Pvt. Ltd; New Delhi 2006
4. **Practical Communication** by L.U.B. Pandey; A.I.T.B.S. Publications India Ltd.; Krishan Nagar, 2013, Delhi.
5. **Personality Development & Soft Skills,** Barun K.Mitra, Oxford University Press, New Delhi, 2012.
6. **Public Speaking,** William S. Pfeiffer, Pearson, Delhi, 2012.
7. **Human Values,** A.N. Tripathi, New Age International Pvt. Ltd. Publishers New Delhi,2005
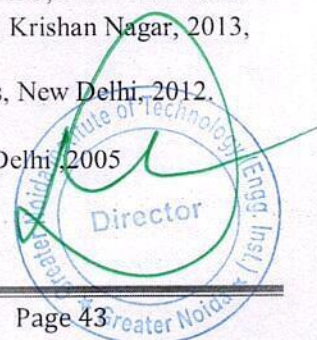
KNC-201	SOFT SKILLS-II	2L:0T:0P

SOFT SKILLS-II

UNIT I- LSRW Skills

Active Listening: Meaning and Art of Listening, Pronunciation, Tongue-Twisters, Stress in English Language, Reading style: Skimming; Scanning; Churning & Assimilation, Effective writing tools, Writing: Methods: Inductive; Deductive; Exposition; Linear; Interrupted; Spatial & Chronological etc

UNIT II- Conversational& Social Skills

Definition of Conversation; Speech and Conversation: Distinction; Listening and Conversation; Sustaining Interest; Rules of Conversation; Conversation and Personality; Importance of Conversation: Competence Relationships; Social Skills: Role of Communication; Purposeful Socializing; Attributes: Effective Communication; Conflict Resolution;; Relationship Management; Respect; Improvement Techniques: Feedback; Goal Setting; Affording Resources; Adopting Interpersonal Skills; Importance.

UNIT III- Motivation Skills

Motivation: Definition; Sources of Motivation: Initiative; Willingness To Work; Eagerness to take on Work; Initiative; Learning Ability; Going Extra Miles; Learning And Analysis; Motivating Others: Techniques; One To One Correspondence; Understanding; Individual Motivation; Mobilizing Optimal Performance; Praise and Compliment; Goal Setting for Individual Employee; Individual Cultivation of Skills; Facilitating Active Involvement; Trust in the Working Hands.

UNIT IV- Work-Place Skills

Managing Stress; Techniques: Application of 4 A's; Avoid; Alter; Access; Adapt; Resilience: Flexibility in Thought and Behavior; Tolerance and Self-Belief; Team-Work and Communication; Compassion in Leadership; Communication Skills; Listening and Responding; Speaking Skills; Positive Thinking: Controlling Mind.

UNIT V- Creativity and Critical Thinking

Creativity: Definition; Characteristics of Creative Person: Fluency; Originality; Curiosity; Critical Thinking: Definition; Abilities: Discerning Facts and Claims; Credibility Analysis; Identifying Valid Reasons; Distinguishing Relevant from Irrelevant Fact/Claims; Detecting Bias; Knowing the Hidden Motives; Creative Methods; Features.

Course Outcome:

Unit 1- Students will be able to **converse** well with effective LSRW skills in English.

Unit 2- Students will **evaluate** the importance of conversation in their personal and professional domain and **apply** it for extending their professional frontiers.

Unit 3- Students will learn to **apply** motivation skills for their individual and professional excellence.

Unit 4- Students will **utilize** their teamwork and their interpersonal communication skills to survive and excel at their work-place.

Unit 5-Students will learn to **evaluate** creativity for their professional innovation and critical thinking for their competence.

Prescribed Books:

1. **Technical Communication, (Second Ed.); O.U.P.,** Meenakshi Raman &S.Sharma New Delhi, 2011
2. **Personality Development,** Harold R. Wallace et. al, Cengage Learning India Pvt. Ltd; New Delhi 2006
3. **Personality Development & Soft Skills,** Barun K. Mitra, Oxford University Press, New Delhi, 2012.
4. **Practical Communication** by L.U.B. Pandey; A.I.T.B.S. Publications India Ltd.; Krishan Nagar, 2013, Delhi.
5. **Developing Communication Skills:** by Krishna Mohan, Meera Banerji; McMillan India Ltd, Delhi,1990.
6. **Communication Skills for Engineers and Scientists:** Sangeeta Sharma et. al., THI Learning Pvt Ltd, New Delhi, 2011.
7. **Public Speaking,** William S. Pfeiffer, Pearson, Delhi, 2012.
8. **Human Values,** A.N. Tripathi, New Age International Pvt. Ltd. Publishers New Delhi ,2005.