

2019-20

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



**Evaluation Scheme & Syllabus for**

**B. Tech. (Bio Technology)**

**AS PER**

**AICTE MODEL CURRICULUM**

**(Effective from the Session: 2018-19)**

*Prabhat*  
Director  
IMS Engineering College  
Ghaziabad

**B. Tech 1st Year (Bio Technology) Structure in accordance with  
AICTE Model Curriculum Effective w.e.f. Academic Session 2018-19**

**SEMESTER - I**

Sl. No.	Code	SUBJECT	PERIODS			EVALUATION SCHEME				END SEMESTER		TOTAL	CREDIT	
			L	T	P	CT	TA	Total	PS	TE	PE			
<b>3 WEEKS COMPULSORY INDUCTION PROGRAM</b>														
1	KAS101/ KAS102	Physics/Chemistry	3	1	3	30	20	50	25	100	25	200	5.5	
2	KBT101/ KBT102	Elementary Mathematics-I /Remedial Biology-I	3	1	0	30	20	50	-	100	-	150	4	
3	KEE101/ KCS101	Basic Electrical Engineering/Programming for Problem Solving	3	1	2	30	20	50	25	100	25	200	5	
4	KCE101/ KWS101	Engineering Graphics & Design/Workshop Practices	1	0	4	-	-	-	25	-	25	50	3	
	MOOCs (For B.Tech. Hons. Degree)*												0	
	<b>TOTAL</b>												600	17.5

**SEMESTER II**

Sl. No.	Code	SUBJECT	PERIODS			EVALUATION SCHEME				END SEMESTER		TOTAL	CREDIT	
			L	T	P	CT	TA	Total	PS	TE	PE			
1	KAS201/ KAS201	Physics/Chemistry	3	1	3	30	20	50	25	100	25	200	5.5	
2	KBT201/ KBT202	Elementary Mathematics-II /Remedial Biology-II	3	1	0	30	20	50	-	100	-	150	4	
3	KEE201/ KCS201	Basic Electrical Engineering/Programming for Problem Solving	3	1	2	30	20	50	25	100	25	200	5	
4	KCE201/ KWS201	Engineering Graphics & Design/Workshop Practices	1	0	4	-	-	-	25	-	25	50	3	
5	KAS204	Professional English	2	0	2	30	20	50	-	100	-	150	3	
	MOOCs (For B.Tech. Hons. Degree)*												0	
	<b>TOTAL</b>												750	20.5
<b>Mini Project or Internship (3-4 weeks) shall be conducted during summer break after II semester and will be assessed during III semester</b>														

**\* List of MOOCs (NPTEL) Based Recommended Courses for first year B. Tech Students**

1. Developing Soft Skills and personality-Odd Semester-8 Weeks-3 Credits
2. Enhancing Soft Skills and personality-Even Semester-8 Weeks-3 Credits

**\* AICTE Guidelines in Model Curriculum:**

After successful completion of 160 credits, a student shall be eligible to get Under Graduate degree in Engineering. A student will be eligible to get Under Graduate degree with Honours only, if he/she completes additional university recommended courses only (Equivalent to 20 credits; NPTEL Courses of 4 Weeks, 8 Weeks and 12 Weeks shall be of 2, 3 and 4 Credits respectively) through MOOCs. For registration to MOOCs Courses, the students shall follow NPTEL Site <http://nptel.ac.in/> as per the NPTEL policy and norms. The students can register for these courses through NPTEL directly as per the course offering in Odd/Even Semesters at NPTEL. These NPTEL courses (recommended by the University) may be cleared during the B. Tech degree program (not necessary one course in each semester). After successful completion of these MooCs courses the students, shall, provide their successful completion NPTEL status/certificates to the University (COE) through their college of study only. The student shall be awarded Hons.

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



**Evaluation Scheme & Syllabus**

**For**

**B.Tech. 2<sup>nd</sup> Year**

**(Bio Technology)**

**On**

**AICTE MODEL CURRICULUM**

**(Effective from the Session: 2019-20)**

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

*P. K. Singh*  
Director  
IMS Engineering College  
Ghaziabad

## B.TECH (BIOTECHNOLOGY)

### 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/ KAS304	Engineering Science Course/Maths V	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	KBT301	Techniques in Biotechnology	3	1	0	30	20	50		100		150	4
4	KBT302	Microbiology & Immunology	3	1	0	30	20	50		100		150	4
5	KBT303	Biochemistry	3	0	0	30	20	50		100		150	3
6	KBT351	Techniques in Biotechnology Lab	0	0	2				25		25	50	1
7	KBT352	Microbiology & Immunology Lab	0	0	2				25		25	50	1
8	KBT353	Biochemistry Lab	0	0	2				25		25	50	1
9	KBT354	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)											
		<b>Total</b>										<b>950</b>	<b>22</b>

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

  
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**SEMESTER- IV**

Sl. No.	Subject Codes	Subject	Periods			Evaluation Scheme				End Semester		Total	Credit
			L	T	P	CT	TA	Total	PS	TE	PE		
1	KAS404/ KOE041-48	Maths V/Engineering 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	KBT401	Bioprocess Engineering I	3	0	0	30	20	50		100		150	3
4	KBT402	Genetics & Molecular Biology	3	1	0	30	20	50		100		150	4
5	KBT403	Enzyme Engineering	3	1	0	30	20	50		100		150	4
6	KBT451	Bioprocess Engineering I Lab	0	0	2				25		25	50	1
7	KBT452	Genetics & Molecular Biology Lab	0	0	2				25		25	50	1
8	KBT453	Enzyme Engineering 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)											
		<b>Total</b>										<b>900</b>	<b>21</b>

  
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**Evaluation Scheme & Syllabus  
For**

**B.Tech. Third Year  
(Biotechnology)**

**On  
Choice Based Credit System  
(Effective from the Session: 2018-19)**

  
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**Study and Evaluation Scheme  
B.TECH. BIO-TECHNOLOGY  
(Effective from the session: 2018-19)**

3<sup>rd</sup> Year, 5<sup>th</sup> Semester

S. No.	Subject Code	Subject Name	Teaching Deptt.	L-T-P	Th/Lab Marks	Sessional		Total	Credit
						Test	Assig/Att.		
1	RAS501	Managerial Economics	Applied Science	3-0-0	70	20	10	100	3
2	RAS502/ RUC501	Sociology/ Cyber Security	Applied Science	3-0-0	70	20	10	100	3
3	RBT-501	Genetic Engineering	Core Department	3-0-0	70	20	10	100	3
4	RBT-502	Fermentation Biotechnology	Core Department	3-1-0	70	20	10	100	4
5	RBT-503	Bioinformatics-I	Core Department	3-0-0	70	20	10	100	3
6	RBT-051-054	Departmental Elective-I	Core Department	3-1-0	70	20	10	100	4
7	RBT-551	Genetic Engineering Lab	Core Department	0-0-2	50		50	100	1
8	RBT-552	Fermentation Biotechnology Lab	Core Department	0-0-2	50		50	100	1
9	RBT-553	Bioinformatics-I Lab	Core Department	0-0-2	50		50	100	1
10	RBT-554	Nano Biotechnology Lab	Core Department	0-0-2	50		50	100	1
	<b>Total</b>							<b>1000</b>	<b>24</b>

**Departmental Elective-I**

RBT051: Pharmaceutical Biotechnology

RBT052: Nano Biotechnology

RBT053: Biomedical Instrumentation

RBT054: Metabolic Engineering

  
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**Study and Evaluation Scheme  
B.TECH. BIO-TECHNOLOGY  
(Effective from the session: 2018-19)**

3<sup>rd</sup> Year, 6<sup>th</sup> Semester

S. No.	Subject Code	Subject Name	Teaching Deptt.	L-T-P	Th/Lab Marks	Sessional		Total	Credit
						Test	Assig/Att		
1	RAS601	Industrial Management	Applied Science	3-0-0	70	20	10	100	3
2	RUC601 / RAS602	Cyber Security/ Sociology	Applied Science	3-0-0	70	20	10	100	3
3	RBT601	Bioprocess Engineering	Core Department	3-0-0	70	20	10	100	3
4	RBT602	Plant Biotechnology	Core Department	3-1-0	70	20	10	100	4
5	RBT603	Bioinformatics-II	Core Department	3-0-0	70	20	10	100	3
6	RBT061-064	Departmental Elective-II	Core Department	3-1-0	70	20	10	100	4
7	RBT651	Bioprocess Engineering Lab	Core Department	0-0-2	50		50	100	1
8	RBT652	Plant Biotechnology Lab	Core Department	0-0-2	50		50	100	1
9	RBT653	Bioinformatics-II Lab	Core Department	0-0-2	50		50	100	1
10	RBT654	Food Biotechnology Lab	Core Department	0-0-2	50		50	100	1
	<b>Total</b>							<b>1000</b>	<b>24</b>


**Departmental Elective-II**

RBT-061: Animal Biotechnology

RBT-062: Biomarker & Diagnostics

RBT-063: Food Biotechnology

RBT-064: Entrepreneurship in Biotechnology

  
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**Evaluation Scheme & Syllabus  
For**

**B.Tech. Fourth Year  
(Biotechnology)**

**On  
Choice Based Credit System  
(Effective from the Session: 2019-20)**

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

**Study and Evaluation Scheme  
B.TECH. BIO-TECHNOLOGY  
(Effective from the session: 2019-20)**

4<sup>th</sup> Year, 7<sup>th</sup> Semester

S. No.	Subject Code	Subject Name	Teaching Deptt.	L-T-P	Th/Lab Marks	Sessional		Total	Credit
						Test	Assig/Att		
1		Open Elective Course-I	Other Department	3-0-0	70	20	10	100	3
2	RBT071-074	Departmental Elective-III	Core Department	3-0-0	70	20	10	100	3
3	RBT075-078	Departmental Elective-IV	Core Department	3-1-0	70	20	10	100	4
4	RBT701	Environmental Biotechnology	Core Department	3-0-0	70	20	10	100	3
5	RBT702	Bioseparation & Down Stream Processing	Core Department	3-1-0	70	20	10	100	4
6	RBT751	Environmental Biotechnology Lab	Core Department	0-0-2	50		50	100	1
7	RBT752	Bioseparation & Down Stream Processing Lab	Core Department	0-0-2	50		50	100	1
8	RBT753	Industrial Training	Core Department					100	2
9	RBT754	Project-I	Core Department					200	3
	<b>Total</b>							<b>1000</b>	<b>24</b>

**Departmental Elective-III**

- RBT071: Genomics and Proteomics
- RBT072: Quality Control & Regulatory Affairs
- RBT073: Clinical Trials & Management
- RBT074: Bioprocess Economics & Project Management

**Departmental Elective-IV**

- RBT075: Biosafety, Bioethics, IPR & Patents
- RBT076: Agriculture Biotechnology
- RBT077: Biomaterials
- RBT078: Applications of Natural Products

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

Study and Evaluation Scheme  
B.TECH. BIO-TECHNOLOGY  
(Effective from the session: 2019-20)

4<sup>th</sup> Year, 8<sup>th</sup> Semester

S. No.	Subject Code	Subject Name	Teaching Deptt.	L-T-P	Th/Lab Marks	Sessional		Total	Credit
						Test	Assig./Att.		
1		Open Elective Course-II	Other Department	3-0-0	70	20	10	100	3
2	RBT081-84	Departmental Elective-V	Core Department	3-1-0	70	20	10	100	4
3	RBT085-088	Departmental Elective-VI	Core Department	3-0-0	70	20	10	100	3
4	RBT851	Seminar	Core Department	0-0-3			100	100	2
5	RBT852	Project-II	Core Department	0-0-12	350		250	600	12
	<b>Total</b>							<b>1000</b>	<b>24</b>

**Departmental Elective-V**

RBT081: Experimental Biotechnology (NPTEL)

RBT082: Tissue Engineering (NPTEL)

RBT083: Introductory mathematical models for biologists (NPTEL)

RBT084: Database Design (NPTEL)

**Departmental Elective-VI**

RBT085: Biostatistics & design of experiments (NPTEL)

RBT086: Integrated waste management for smart cities (NPTEL)

RBT087: Industrial Biotechnology (NPTEL)

RBT088: Computer aided drug design (NPTEL)

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



**Evaluation Scheme & Syllabus for**

**B. Tech.**

**(All Branches except Agriculture & Bio Tech)**

**AS PER**

**AICTE MODEL CURRICULUM**

**(Effective from the Session: 2018-19)**

*P. K. Singh*  
Director  
IMS Engineering College  
Ghaztbad

**B. Tech 1st Year (All branches except Bio Technology and Agriculture Engg.) Structure in accordance with AICTE Model Curriculum Effective w.e.f. Academic Session 2018-19**

**SEMESTER - I**

Sl. No	Code	SUBJECT	PERIODS			EVALUATION SCHEME				END SEMESTER		TOTAL	CREDIT
			L	T	P	CT	TA	Total	PS	TE	PE		
<b>3 WEEKS COMPULSORY INDUCTION PROGRAM</b>													
1	KAS101/ KAS102	Physics/Chemistry	3	1	3	30	20	50	25	100	25	200	5.5
2	KAS103	Mathematics-I	3	1	0	30	20	50	-	100	-	150	4
3	KEE 101/ KCS101	Basic Electrical Engineering/Programming for Problem Solving	3	1	2	30	20	50	25	100	25	200	5
4	KCE101/ KWS101	Engineering Graphics & Design/Workshop Practices	1	0	4	-	-	-	25	-	25	50	3
		MOOCs (For B.Tech. Hons. Degree)*											0
		<b>TOTAL</b>										600	17.5

**SEMESTER II**


Sl. No.	Code	SUBJECT	PERIODS			EVALUATION SCHEME				END SEMESTER		TOTAL	CREDIT
			L	T	P	CT	TA	Total	PS	TE	PE		
1	KAS201/ KAS202	Physics/Chemistry	3	1	3	30	20	50	25	100	25	200	5.5
2	KAS203	Mathematics II	3	1	0	30	20	50	-	100	-	150	4
3	KEE201/ KCS201	Basic Electrical Engineering/Programming for Problem Solving	3	1	2	30	20	50	25	100	25	200	5
4	KCE201/ KWS201	Engineering Graphics & Design/Workshop Practices	1	0	4	-	-	-	25	-	25	50	3
5	KAS204	Professional English	2	0	2	30	20	50	-	100	-	150	3
		MOOCs (For B.Tech. Hons. Degree)*											0
		<b>TOTAL</b>										750	20.5
<b>Mini Project or Internship (3-4 weeks) shall be conducted during summer break after II semester and will be assessed during III semester</b>													

**\* List of MOOCs (NPTEL) Based Recommended Courses for first year B. Tech Students**

1. Developing Soft Skills and personality-Odd Semester-8 Weeks-3 Credits
2. Enhancing Soft Skills and personality-Even Semester-8 Weeks-3 Credits

**\* AICTE Guidelines in Model Curriculum:**

After successful completion of 160 credits, a student shall be eligible to get Under Graduate degree in Engineering. A student will be eligible to get Under Graduate degree with Honours only, if he/she completes additional university recommended courses only (Equivalent to 20 credits; NPTEL Courses of 4 Weeks, 8 Weeks and 12 Weeks shall be of 2, 3 and 4 Credits respectively) through MOOCs. For registration to MOOCs Courses, the students shall follow NPTEL Site <http://nptel.ac.in/> as per the NPTEL policy and norms. The students can register for these courses through NPTEL directly as per the course offering in Odd/Even Semesters at NPTEL. These NPTEL courses (recommended by the University) may be cleared during the B. Tech degree program (not necessary one course in each semester). After successful completion of these MOOCs courses the students, shall, provide their successful completion NPTEL status/certificates to the University (COE) through their college of study only. The student shall be awarded Hons. Degree (on successful completion of MOOCs based 20 credit) only if he/she secures 7.50 or above CGPA and passed each subject of that Degree Programme in single attempt without any grace marks.

  
 Director  
 IMS Engineering College  
 Ghaziabad

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



**EVALUATION SCHEME & SYLLABUS  
FOR  
B. TECH. SECOND YEAR  
(CIVIL ENGINEERING)**

(Effective from session 2019-20)

  
Director  
IMS Engineering College  
Ghaziabad

## THIRD SEMESTER

## CIVIL ENGINEERING

SESSION 2019-20

S.No	Subject	Subject	Periods			Evaluation Scheme				End Semester		Total	Credit
	Codes		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	Subject	Periods			Evaluation Scheme				End Semester		Total	Credit
	Codes		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

*P. Prasad*  
Director  
IMS Engineering College  
Ghaziabad

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



**EVALUATION SCHEME & SYLLABUS**

**FOR**

**B. TECH. THIRD YEAR**

**(CIVIL ENGINEERING)**

**On**


**Choice Based Credit System**

**[Effective from session 2018-19]**

## FIFTH SEMESTER

Sl No.	Subject Code	Subject Name	Teaching Deptt.	L-T-P	Th/Lab Marks	Sessional		Total	Credit
						ESE	CT TA.		
1	RAS501	MANEGIRIAL ECONOMICS	Applied Science	3—0---0	70	20	10	100	3
2	RAS-502/ RUC501	SOCIOLOGY /CYBER SECURITY	Applied Science	3—0---0	70	20	10	100	3
3	RCE501	GEOTECHNICAL ENGINEERING	Core Deptt.	3—0---0	70	20	10	100	3
4	RCE502	DESIGN OF STRUCTURE-I	Core Deptt.	3—1---0	70	20	10	100	4
5	RCE503	QUANTITY ESTIMATION AND MANAGEMENT	Core Deptt.	3—0---0	70	20	10	100	3
6	RCE051 RCE052 RCE053	<b>ELECTIVE -1</b> MODERN CONSTRUCTION MATERIALS CONCRETE TECHNOLOGY GEOENVIRONMENTAL	Core Deptt.	3—1--0	70	20	10	100	4

## CIVIL ENGINEERING

  
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ENGINEERING									
7	RCE551	GEOTECHNICAL ENGINEERING LAB	Core Deptt.	0—0---2	50		50	100	1
8	RCE552	CAD LAB-1	Core Deptt.	0—0---2	50		50	100	1
9	RCE553	CONSTRUCTION MANAGEMENT LAB	Core Deptt.	0—0---2	50		50	100	1
10	RCE554	CONCRETE LAB	Core Deptt.	0—0---2	50		50	100	1
<b>TOTAL</b>					620	120	260	<b>1000</b>	<b>24</b>

SESSION 2018-19

*P. Prabodh*  
 Director  
 IMS Engineering College  
 Ghaziabad




## SIXTH SEMESTER

## CIVIL ENGINEERING

SESSION 2018-19

Sl No	Subject Code	Subject Name	Teaching Deptt.	L-T-P	Th/Lab Marks	Sessional		Total	Credit
						ESE	CT TA.		
1	RAS601	INDUSTRIAL MANAGEMENT	Applied Science	3—0—0	70	20	10	100	3
2	RUC601/ RAS602	CYBER SECURITY/SOCIOLOGY	Applied Science	3—0—0	70	20	10	100	3
3	RCE601	DESIGN OF STRUCTURE-II	Core Deptt.	3—0—0	70	20	10	100	3
4	RCE602	ENVIRONMENTAL ENGINEERING	Core Deptt.	3—1—0	70	20	10	100	4
5	RCE603	TRANSPORTATION ENGINEERING	Core Deptt.	3—0—0	70	20	10	100	3
6	RCE061 REC062  RCE063	<b>ELECTIVE -2</b> FOUNDATION DESIGN INTEGRATED WASTE MANAGEMENT FOR A SMART CITY GEOSYNTHESIS AND REINFORCED SOIL STRUCTURES	Core Deptt.	3—1—0	70	20	10	100	4
7	RCE651	CAD LAB-2	Core Deptt.	0—0—2	50		50	100	1
8	RCE652	ENVIRONMENTAL ENGINEERING LAB	Core Deptt.	0—0—2	50		50	100	1
9	RCE653	TRANSPORTATION ENGINEERING LAB	Core Deptt.	0—0—2	50		50	100	1
10	RCE 654	STRUCTURAL DETAILING LAB	Core Deptt.	0—0—2	50		50	100	1
	<b>TOTAL</b>				620	120	260	<b>1000</b>	<b>24</b>

  
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**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)**

*P. Prasad*  
Director  
IMS Engineering College  
Ghaziabad

## SEVENTH SEMESTER

## CIVIL ENGINEERING

SESSION 2019-20

S. No.	Subject Code	Subject Name	Department	L-T-P	Th/Lab Marks	Sessional		Total	Credit
					ESE	CT	TA		
1		Open Elective Course-I	Other Deptt.	3---0---0	70	20	10	100	3
2	RCE071	<b>Elective -3</b> Geology and Soil Mechanics	Core Deptt.	3---0---0	70	20	10	100	3
	RCE072	Rural Development Engineering							
	RCE073	Structural Health Monitoring & Rehabilitation							
	RCE074	River Engineering							
3	RCE075	<b>Elective -4</b> Computational Fluid Dynamics	Core Deptt.	3---1---0	70	20	10	100	4
	RCE076	Railways, Airport & Water Ways							
	RCE077	Air & Noise Pollution Control							
	RCE078	Ground Improvement Techniques							
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
		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
	<b>TOTAL</b>				<b>450</b>	<b>100</b>		<b>1000</b>	<b>24</b>

**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.

  
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## EIGHTH SEMESTER

## CIVIL ENGINEERING

SESSION 2019-20

S No.	Subject Code	Subject Name	Teaching Deptt.	L-T-P	Th/Lab Marks	Sessional		Total	Credit
					ESE	CT	TA		
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
	<b>TOTAL</b>				<b>560</b>	<b>60</b>	<b>380</b>	<b>1000</b>	<b>24</b>

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**



**Evaluation Scheme & Syllabus**

**For**

**B.Tech. 2<sup>nd</sup> 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**

*P. Prasad*  
Director  
IMS Engineering College  
Ghaziabad

**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)											
		<b>Total</b>										<b>950</b>	<b>22</b>

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

  
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**SEMESTER- IV**

Sl. No.	Subject Codes	Subject	Periods			Evaluation Scheme				End Semester		Total	Credit
			L	T	P	CT	TA	Total	PS	TE	PE		
1	KAS402/ KOE041-48	Maths IV/Engg. Science Course	3	1	0	30	20	50		100		150	4
2	KVE401/ KAS301	Universal Human Values/ Technical Communication	3	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)											
		<b>Total</b>										<b>900</b>	<b>21</b>

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



**Evaluation Scheme & Syllabus**

**For**

**B. Tech. Third Year**

**(Computer Science and Engineering)**

**(Computer Science and Information Technology)**

**On**

**Choice Based Credit System**

**(Effective from the Session: 2018-19)**

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


*P. S. Chandra*  
Director  
IMS Engineering College  
Ghaziabad

**B. Tech. (CSE\CSIT)**  
**FIFTH SEMESTER**

Sl No.	Subject Code	Subject Name	L-T-P	Theory/ Lab (ESE) Marks	Sessional		Total	Credi t
					Test	Assign/Att		
1	RAS501	MANEGERIAL ECONOMICS	3---0---0	70	20	10	100	3
2	RAS502/ RUC501	INDUSTRIAL SOCIOLOGY /CYBER SECURITY	3---0---0	70	20	10	100	3
3	RCS-501	Database Management Systems	3---0---0	70	20	10	100	3
4	RCS-502	Design and Analysis of Algorithm	3---1---0	70	20	10	100	4
5	RCS-503	Principles of Programming Languages	3---0---0	70	20	10	100	3
6	CS-Elective-1	DEPTT ELECTIVE COURSE-1	3---1---0	70	20	10	100	4
7	RCS-551	Database Management Systems Lab	0---0---2	50	-	50	100	1
8	RCS-552	Design and Analysis of Algorithm Lab	0---0---2	50	-	50	100	1
9	RCS-553	Principles of Programming Languages Lab	0---0---2	50	-	50	100	1
10	RCS-554	Web Technologies Lab	0---0---2	50	-	50	100	1
	<b>TOTAL</b>						<b>1000</b>	<b>24</b>

**SIXTH SEMESTER**

Sl No.	Subject Code	Subject Name	L-T-P	Theory/ Lab (ESE) Marks	Sessional		Total	Credi t
					Test	Assign/Att		
1	RAS601	INDUSTRIAL MANAGEMENT	3---0---0	70	20	10	100	3
2	RAS602 / RUC601	INDUSTRIAL SOCIOLOGY/ CYBER SECURITY	3---0---0	70	20	10	100	3
3	RCS-601	Computer Networks	3---0---0	70	20	10	100	3
4	RCS-602	Compiler Design	3---1---0	70	20	10	100	4
5	RCS-603	Computer Graphics	3---0---0	70	20	10	100	3
6	CS-Elective-2	DEPTT ELECTIVE COURSE-2	3---1---0	70	20	10	100	4
7	RCS-651	Computer Networks Lab	0---0---2	50	-	50	100	1
8	RCS-652	Compiler Design Lab	0---0---2	50	-	50	100	1
9	RCS-653	Computer Graphics Lab	0---0---2	50	-	50	100	1
10	RCS-654	Data Warehousing & Data Mining Lab	0---0---2	50	-	50	100	1
	<b>TOTAL</b>						<b>1000</b>	<b>24</b>

  
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**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**

*P. Prasad*  
Director  
IMS Engineering College  
Ghaziabad

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

Sl. No.	Subject Code	Subject Name	L-T-P	Th/Lab Marks	Sessional		Total	Credit
				ESE	CT	TA		
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**

Sl. No.	Subject Code	Subject Name	L-T-P	Th/Lab Marks	Sessional		Total	Credit
				ESE	CT	TA		
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

  
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#### 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_cs17/preview)  
[https://onlinecourses.nptel.ac.in/noc17\\_cs26/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://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](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](https://onlinecourses.nptel.ac.in/noc18_cy07))

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



**Evaluation Scheme & Syllabus**

**For**

**B.Tech. 2<sup>nd</sup> Year**

**(Information Technology)**

**On**

**AICTE Model Curriculum**

**(Effective from the Session: 2019-20)**

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

*P. Prasad*  
Director  
IMS Engineering College  
Ghaziabad

# B.TECH (COMPUTER SCIENCE AND ENGINEERING)

## Information Technology

### SEMESTER- III

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

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

  
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**SEMESTER- IV**

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

  
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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**

  
Director  
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Ghaziabad

#### **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_cs17/preview)  
[https://onlinecourses.nptel.ac.in/noc17\\_cs26/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://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](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/](https://onlinecourses.nptel.ac.in/noc18_cy07/))

  
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**DR. A.P.J. ABDUL KALAM TECHNICAL  
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**EVALUATION SCHEME & SYLLABUS  
FOR**

**B. TECH. 2<sup>nd</sup> YEAR**

**ELECTRICAL & ELECTRONICS ENGINEERING**

**BASED ON**

**AICTE MODEL CURRICULUM**

**[Effective from the Session: 2019-20]**


*P. S. Singh*  
Director  
IMS Engineering College  
Ghaziabad

**EVALUATION SCHEME - B.TECH 2<sup>ND</sup> YEAR (ELECTRICAL & ELECTRONICS ENGINEERING)**

SEMESTER- III													
Sl. No.	Subject Codes	Subject	Periods			Evaluation Scheme				End Semester		Total	Credit
			L	T	P	CT	TA	Total	PS	TE	PE		
1	KOE031-38/ KAS302	Engg. Science Course/Maths IV	3	1	0	30	20	50		100		150	4
2	KAS301/ KVE301	Technical Communication/ Universal Human values	2	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)											
		<b>Total</b>										<b>950</b>	<b>22</b>

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

SEMESTER IV													
Sl. No.	Subject Codes	Subject	Periods			Evaluation Scheme				End Semester		Total	Credit
			L	T	P	CT	TA	Total	PS	TE	PE		
1	KAS402/ KOE041-48	Maths IV/ Engg. Science Course	3	1	0	30	20	50		100		150	4
2	KVE401/ KAS401	Universal Human Values/Technical Communication	3	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)											
		<b>Total</b>										<b>900</b>	<b>21</b>

  
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**DR. A.P.J. ABDUL KALAM TECHNICAL  
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**EVALUATION SCHEME & SYLLABUS  
FOR  
B. TECH. III YEAR  
ELECTRICAL ENGINEERING /  
ELECTRICAL & ELECTRONICS ENGINEERING  
ON  
CHOICE BASED CREDIT SYSTEM (CBCS)  
[Effective from the Session: 2018-19]**

*P. K. Sharma*  
Director  
IMS Engineering College  
Ghaziabad

**EVALUATION SCHEME**  
**B-TECH. ELECTRICAL ENGINEERING**  
**B-TECH. ELECTRICAL & ELECTRONICS ENGINEERING**

YEAR 3<sup>rd</sup> / SEMESTER-V

S. No.	Subject Code	Subject Name	Department	L-T-P	Th./Lab Marks	Sessional		Total	Credit
					ESE	CT	TA		
1	RAS501	MANAGERIAL ECONOMICS	Applied Science	3--0--0	70	20	10	100	3
2	RAS502/ RUC501	SOCIOLOGY /CYBER SECURITY	Applied Science	3--0--0	70	20	10	100	3
3	REE501	ELECTRICAL MACHINES -II	Core Deptt.	3--0--0	70	20	10	100	3
4	REE502	POWER TRANSMISSION & DISTRIBUTION	Core Deptt.	3--1--0	70	20	10	100	4
5	REE503	CONTROL SYSTEM	Core Deptt.	3--0--0	70	20	10	100	3
6	REE051 -054	DEPTT ELECTIVE COURSE-1	Core Deptt.	3--1--0	70	20	10	100	4
7	REE551	ELECTRICAL MACHINES -II LAB	Core Deptt.	0--0--2	50		50	100	1
8	REE553	CONTROL SYSTEM LAB	Core Deptt.	0--0--2	50		50	100	1
9	REE554	SOFTWARE BASED POWER SYSTEM LAB	Core Deptt.	0--0--2	50		50	100	1
10	REE555	SEMINAR - I		0--0--2			100	100	1
	<b>TOTAL</b>				<b>620</b>	<b>120</b>	<b>260</b>	<b>1000</b>	<b>24</b>

DEPTT. ELECTIVE COURSE-1

1. REE051: Power System Optimization
2. REE052: Principles of Communication
3. REE053: Fundamentals of Digital Signal Processing
4. REE054: Internet of Things

  
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EVALUATION SCHEME


B-TECH. ELECTRICAL ENGINEERING  
B-TECH. ELECTRICAL & ELECTRONICS ENGINEERING

YEAR 3<sup>rd</sup> / SEMESTER-VI

S. No.	Subject Code	Subject Name	Department	L-T-P	Th/Lab Marks	Sessional		Total	Credit
					ESE	CT	TA		
1	RAS601	INDUSTRIAL MANAGEMENT	Applied Science	3--0--0	70	20	10	100	3
2	RAS602 / RUC601	SOCIOLOGY /CYBER SECURITY	Applied Science	3--0--0	70	20	10	100	3
3	REE601	POWER ELECTRONICS	Core Deptt.	3--0--0	70	20	10	100	3
4	REE602	MICROPROCESSOR	Core Deptt.	3--1--0	70	20	10	100	4
5	REE603	POWER SYSTEM ANALYSIS	Core Deptt.	3--0--0	70	20	10	100	3
6	REE061 -064	DEPTT ELECTIVE COURSE-2	Core Deptt.	3--1--0	70	20	10	100	4
7	REE661	POWER ELECTRONICS LAB	Core Deptt.	0--0--2	50		50	100	1
8	REE662	MICROPROCESSOR LAB	Core Deptt.	0--0--2	50		50	100	1
9	REE664	ELECTRICAL DESIGN & FABRICATION LAB	Core Deptt.	0--0--2	50		50	100	1
10	REE665	SEMINAR - II		0--0--2			100	100	1
	TOTAL				620	120	260	1000	24

DEPTT. ELECTIVE COURSE-2

1. REE061 - Intelligent Sensors & Instrumentation
2. REE062 - Bio-medical Instrumentation
3. REE063 - High Voltage Engineering
4. REE064 - Special Electrical Machines

  
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**EVALUATION SCHEME & SYLLABUS  
FOR  
B. TECH. IV YEAR  
ELECTRICAL & ELECTRONICS ENGINEERING  
ON  
CHOICE BASED CREDIT SYSTEM (CBCS)  
[Effective from the Session: 2019-20]**

*Prabhat*  
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IMS Engineering College  
Ghaziabad

**EVALUATION SCHEME**  
**B-TECH. ELECTRICAL & ELECTRONICS ENGINEERING**

**YEAR 4<sup>th</sup> / SEMESTER-VII**

S. No.	Subject Code	Subject Name	Department	L-T-P	Th./Lab Marks	Sessional		Total	Credit
					ESE	CT	TA		
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	REN701	COMMUNICATION SYSTEMS	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	REN753	INDUSTRIAL TRAINING	Core Deptt.	0--0--3			100	100	2
9	REN754	PROJECT-1	Core Deptt.	0--0--6			200	200	3
	<b>TOTAL</b>				<b>450</b>	<b>100</b>	<b>450</b>	<b>1000</b>	<b>24</b>

**DEPTT. ELECTIVE COURSE-3**

1. REE070: Microprocessors and Microcontrollers
2. REE071: Utilization of Electrical Energy & Electric Traction
3. REE072: Introduction to Smart Grid
4. REN070: Introduction to Robotics

**DEPTT. ELECTIVE COURSE-4**

1. REE075: Industrial Automation and Control
2. REE076: Energy Efficiency & Conservation
3. REE077: Reliability Engineering
4. REN075: Telemetry & Data Transmission

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**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]**

  
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**EVALUATION SCHEME & SYLLABUS  
FOR**

**B. TECH. III YEAR**

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

**ON**

**CHOICE BASED CREDIT SYSTEM (CBCS)**

**[Effective from the Session: 2018-19]**

EVALUATION SCHEME

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

YEAR 3<sup>rd</sup>/ SEMESTER V

Sr. No.	Sub Code	Subject Name	L-T-P	Th/Lab Marks	Sessional		Total	Credit
				ESE	CT	TA		
1	RAS501	Managerial Economics	3--0--0	70	20	10	100	3
2	RAS502 /RUC501	Sociology/Cyber Security	3--0--0	70	20	10	100	3
3	REC501A	Integrated Circuits	3--0--0	70	20	10	100	3
4	REC502	Principles of Communication	3--1--0	70	20	10	100	4
5	REC503	Digital Signal Processing	3--0--0	70	20	10	100	3
6	REC051-055	Deptt. Elective Course 1	3--1--0	70	20	10	100	4
7	REC551	Integrated Circuits Lab	0--0--2	50		50	100	1
8	REC552	Communication Lab – I	0--0--2	50		50	100	1
9	REC553	Digital Signal Processing Lab	0--0--2	50		50	100	1
10	REC554	CAD of Electronics Lab-I	0--0--2	50		50	100	1
	TOTAL			620	120	260	1000	24

DEPTT ELECTIVE COURSE-1

1. REC051 - Antenna & wave propagation
2. REC052 - Computer Architecture and Organization
3. REC053- Real Time Systems
4. REC054- Artificial Neural Networks
5. REC055- Advance Semiconductor devices

  
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## EVALUATION SCHEME

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

YEAR 3<sup>rd</sup>/ SEMESTER VI

Sr. No	Sub Code	Subject Name	L-T-P	Th/LAB Marks	Sessional		Total	Credit
				ESE	CT	TA		
1	RAS601	Industrial Management	3--0--0	70	20	10	100	3
2	RAS602 / RUC601	Sociology /Cyber Security	3--0--0	70	20	10	100	3
3	RIC603	Control System I	3--0--0	70	20	10	100	3
4	REC601	Microwave Engineering	3--1--0	70	20	10	100	4
5	REC602	Digital Communication	3--0--0	70	20	10	100	3
6	REC061 - 065	Deptt. Elective Course 2	3--1--0	70	20	10	100	4
7	REC-651	Microwave Engg Lab	0--0--2	50		50	100	1
8	REC-652	Communication Lab- II	0--0--2	50		50	100	1
9	RIC-653	Control System Lab-I	0--0--2	50		50	100	1
10	RIC-651	Microcontrollers For Embedded Systems Lab	0--0--2	50		50	100	1
	<b>TOTAL</b>			<b>620</b>	<b>120</b>	<b>260</b>	<b>1000</b>	<b>24</b>

### DEPTT ELECTIVE COURSE-2

1. REC061 - Industrial Electronics
2. REC062 - Microcontroller for Embedded Systems
3. REC063 - Analog Signal Processing
4. REC064 - Advance Digital Design Using Verilog
5. REC065- RADAR Engineering

  
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**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]**

  
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## EVALUATION SCHEME

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

YEAR 4<sup>th</sup>/ 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
	<b>TOTAL</b>				<b>450</b>	<b>100</b>	<b>450</b>	<b>1000</b>	<b>24</b>

#### 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

  
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## EVALUATION SCHEME

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

YEAR 4<sup>th</sup>/ 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	
	<b>TOTAL</b>				<b>560</b>	<b>60</b>	<b>380</b>	<b>1000</b>	<b>24</b>	

### 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/>)

  
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**EVALUATION SCHEME & SYLLABUS  
FOR  
B. TECH 2<sup>nd</sup> YEAR  
MECHANICAL ENGINEERING**

**On**

**AICTE Model Curriculum**

**(EFFECTIVE FROM THE SESSION: 2019-20)**

*P. Prasad*  
Director  
**IMS Engineering College**  
Ghaziabad

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



**Syllabus**

**for**

**B. Tech. Mechanical Engineering**

**Third Year**

**(Effective from the Session: 2018-19)**

*Prabhat*  
Director  
IMS Engineering College  
Ghaziabad

## STUDY AND EVALUATION SCHEME

### B-Tech. Mechanical Engineering

YEAR: 3<sup>rd</sup> / SEMESTER-V

S. No.	Subject Code	Subject Name	Department	L-T-P	Theory / Lab Marks	SESSIONAL		Total	Credit
						Test	Assignment / Attendance		
1	RAS501	Managerial Economics	Applied Science	3--0--0	70	20	10	100	3
2	RAS502/ RUC501	Sociology /Cyber Security	Applied Science	3--0--0	70	20	10	100	3
3	RME501	Machine Design-I	Core Deptt.	3--0--0	70	20	10	100	3
4	RME502	Heat & Mass Transfer	Core Deptt.	3--1--0	70	20	10	100	4
5	RME503	Manufacturing Science & Technology-II	Core Deptt.	3--0--0	70	20	10	100	3
6	RME051-054	Deptt. Elective Course-1	Core Deptt.	3--1--0	70	20	10	100	4
7	RME551	Design and Simulation Lab I	Core Deptt.	0--0--2	50		50	100	1
8	RME552	Heat & Mass Transfer Lab	Core Deptt.	0--0--2	50		50	100	1
9	RME553	Manufacturing Technology-II Lab	Core Deptt.	0--0--2	50		50	100	1
10	RME559	Seminar – I		0--0--2	50		50	100	1
<b>TOTAL</b>								<b>1000</b>	<b>24</b>

#### DEPTT ELECTIVE COURSE-I

1. RME-051 IC Engines and Compressors
2. RME-052 Mechatronics and Microprocessor
3. RME-053 Finite Element Methods
4. RME-054 Engineering Optimization

  
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## STUDY AND EVALUATION SCHEME

### B-Tech. Mechanical Engineering

### YEAR: 3<sup>rd</sup> / SEMESTER-VI

S. No.	Subject Code	Subject Name	Department	L-T-P	Theory / Lab Marks	SESSIONAL		Total	Credit
						Test	Assignment / Attendance		
1	RAS601	Industrial Management	Applied Science	3--0--0	70	20	10	100	3
2	RUC601/ RAS602	Cyber Security/ Sociology	Applied Science	3--0--0	70	20	10	100	3
3	RME601	Fluid Machinery	Core Deptt.	3--0--0	70	20	10	100	3
4	RME602	Theory of Machines	Core Deptt.	3--1--0	70	20	10	100	4
5	RME603	Machine Design-II	Core Deptt.	3--0--0	70	20	10	100	3
6	RME061- 064	Deptt. Elective Course-2	Core Deptt.	3--1--0	70	20	10	100	4
7	RME651	Fluid Machinery Lab	Core Deptt.	0--0--2	50		50	100	1
8	RME652	Theory of Machines Lab	Core Deptt.	0--0--2	50		50	100	1
9	RME653	Design and Simulation Lab II	Core Deptt.	0--0--2	50		50	100	1
10	RME654	Refrigeration & Air-conditioning	Core Deptt.	0--0--2	50		50	100	1
<b>TOTAL</b>								<b>1000</b>	<b>24</b>

#### DEPTT ELECTIVE COURSE-2

1. RME061 Refrigeration & Air-conditioning
2. RME062 Production Planning and Control
3. RME063 Mechanical Vibration
4. RME064 Reliability Engineering

  
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**STUDY & EVALUATION SCHEME WITH  
SYLLABUS**

**FOR**

**B. TECH 4<sup>th</sup> YEAR  
MECHANICAL ENGINEERING**

**ON**

**CHOICE BASED CREDIT SYSTEM**

**(EFFECTIVE FROM THE SESSION: 2019-20)**

*Prabhu*  
Director  
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**SEVENTH SEMESTER**

Sl.No.	Subject Code	Subject Name	Department	L-T-P	Th/Lab Marks		Sessional		Total	Credit
					ESE		CT	TA		
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	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
	<b>TOTAL</b>				<b>450</b>		<b>100</b>	<b>450</b>	<b>1000</b>	<b>24</b>

**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 & Simulation
RME077	Computational Fluid Dynamics
RME078	Automation & Robotics

**EIGHT SEMESTER**

Sl.No.	Subject Code	Subject Name	Department	L-T-P	Th/Lab Marks		Sessional		Total	Credit
					ESE		CT	TA		
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	RME851	SEMINAR	Core Deptt.	0-0-3				100	100	2
5	RME852	PROJECT-2	Core Deptt.	0-0-12	350			250	600	12
	<b>TOTAL</b>				<b>560</b>		<b>60</b>	<b>380</b>	<b>1000</b>	<b>24</b>

**DEPARTMENTAL ELECTIVE-5**

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

S.Code MOOC Subject Name  
RME084 Industrial Safety Engineering.

**DEPARTMENTAL ELECTIVE-6**

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

S.Code MOOC Subject Name  
RME089 Manufacturing of Composites.

  
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2019-20

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**Evaluation Scheme & Syllabus for  
MBA  
AS PER  
AICTE MODEL CURRICULUM**

(Effective from the Session: 2018-19)

*Prabhu*  
Director  
IMS Engineering College  
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**MBA 1st Year Course Structure in accordance with AICTE Model Curriculum  
Effective w.e.f. Academic Session 2018**

**SEMESTER - I**

S. No	CODE	SUBJECT	PERIODS			EVALUATION SCHEME				END SEMESTER		TOTAL	CREDIT
			L	T	P	CT	TA	TOTAL	PS	TE	PE		
1	KMB 101	MANAGEMENT CONCEPT & INDIAN ETHOS	4	0	0	30	20	50	0	100	0	150	3
2	KMB102	MANAGERIAL ECONOMICS	4	0	0	30	20	50	0	100	0	150	3
3	KMB103	FINANCIAL ACCOUNTING FOR MANAGERS	4	0	0	30	20	50	0	100	0	150	3
4	KMB104	BUSINESS STATISTICS AND ANALYSIS	4	0	0	30	20	50	0	100	0	150	3
5	KMB105	ORGANISATIONAL BEHAVIOUR	4	0	0	30	20	50	0	100	0	150	3
6	KMB106	MARKETING MANAGEMENT - I	4	0	0	30	20	50	0	100	0	150	3
7	KMB107	BUSINESS COMMUNICATION	4	0	0	30	20	50	0	100	0	150	3
8	KMB108	COMPUTER APPLICATION IN MANAGEMENT	3	0	1	30	20	50	0	100	0	150	3
9	NON CREDIT	DEVELOPING SOFT SKILLS & PERSONALITY	2	0	0							0	0
		<b>TOTAL</b>										<b>1200</b>	<b>24</b>

**SEMESTER - II**

S. No	CODE	SUBJECT	PERIODS			EVALUATION SCHEME				END SEMESTER		TOTAL	CREDIT
			L	T	P	CT	TA	TOTAL	PS	TE	PE		
1	KMB 201	BUSINESS ENVIRONMENT	4	0	0	30	20	50	0	100	0	150	
2	KMB202	HUMAN RESOURCE MANAGEMENT	4	0	0	30	20	50	0	100	0	150	
3	KMB203	BUSINESS RESEARCH METHODS	4	0	0	30	20	50	0	100	0	150	
4	KMB204	FINANCIAL MANAGEMENT & CORPORATE FINANCE	4	0	0	30	20	50	0	100	0	150	
5	KMB205	OPERATIONS MANAGEMENT	4	0	0	30	20	50	0	100	0	150	
6	KMB206	QUANTITATIVE TECHNIQUES FOR MANAGERS	4	0	0	30	20	50	0	100	0	150	
7	KMB207	LEGAL ASPECTS OF BUSINESS	4	0	0	30	20	50	0	100	0	150	
8	KMB208	MARKETING MANAGEMENT – II	4	0	0	30	20	50	0	100	0	150	
9	KMB209	COMPREHENSIVE VIVA	0	0	0					100	0	100	
10	NON CREDIT	DEVELOPING SOFT SKILLS & PERSONALITY	2	0	0							0	
		<b>TOTAL</b>										<b>1300</b>	

*Pradeep*

Director  
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**Evaluation Scheme & Syllabus**

**For**

**MBA Second Year**

**AS PER AICTE MODEL CURRICULUM**

**(Effective from the Session: 2019-20)**

*P. S. Chandra*  
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## MBA Scheme of Teaching & Evaluation for Session 2019-20

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

  
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**SEMESTER IV**

S. No.	Code	Course Title	Evaluation Scheme								Credit
			Sessional Exams								
			L	T	P	CT	TA	Total	ESE	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	4	0	0	30	20	50	100	150	3
		Elective 4*									
5		Specialization Group -1	4	0	0	30	20	50	100	150	3
		Elective 5*									
6		Specialization Group -2	4	0	0	30	20	50	100	150	3
		Elective 3*									
7	KMB405	Research Project Report and Viva Voce	4	0	0	0	0	100	200	300	6
		<b>TOTAL</b>							<b>800</b>	<b>1200</b>	<b>24</b>

  
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**Specialization Group: Human Resource**

**Elective Papers in III Semester**

S. No	Code	Course Title
1	KMBHR01	Talent Management
2	KMBHR02	Performance and Reward Management
3	KMBHR03	Employee Relations and Labour Laws

**Elective Papers in IV Semester**

S. No	Code	Course Title
1	KMBHR04	Strategic Human Resource Management
2	KMBHR05	International Human Resource Management

**Specialization Group: Marketing**

**Elective Papers in III Semester**

S. No	Code	Course Title
1	KMBMK01	Sales & Retail Management
2	KMBMK02	Consumer Behaviour & Marketing Communications
3	KMBMK03	Digital & Social Media Marketing

**Elective Papers in IV Semester**

S. No	Code	Course Title
1	KMBMK04	Marketing of Services
2	KMBMK05	Marketing Analytics

**Specialization Group: Finance**

**Elective Papers in III Semester**

  
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S. No	Code	Course Title
1	KMBFM01	Investment Analysis & Portfolio Management
2	KMBFM02	Tax Planning and Management
3	KMBFM03	Financial Market & Services

**Elective Papers in IV Semester**

S. No	Code	Course Title
1	KMBFM04	Working Capital Management
2	KMBFM05	Financial Derivatives

**Specialization Group: International Business**

**Elective Papers in III Semester**

S. No	Code	Course Title
1	KMBIB01	International Marketing
2	KMBIB02	International Logistics
3	KMBIB03	Export Import Documentation

**Elective Papers in IV Semester**

S. No	Code	Course Title
1	KMBIB04	International Trade Laws
2	KMBIB05	Cross Cultural Management

**Specialization Group: Information Technology**

**Elective Papers in III Semester**

S. No	Code	Course Title
1	KMBIT01	Enterprise Resource Planning
2	KMBIT02	Web Technology & E- Commerce

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3	KMBIT03	Cloud Computing for Business
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### Elective Papers in IV Semester

S. No	Code	Course Title
1	KMBIT04	Database Management System
2	KMBIT05	System Analysis & Design

### Specialization Group: Operations Management

#### Elective Papers in III Semester

S. No	Code	Course Title
1	KMBOM01	Supply Chain & Logistics Management
2	KMBOM02	Operations Planning and Control
3	KMBOM03	Quality Toolkit For Managers

#### Elective Papers in IV Semester

S. No	Code	Course Title
1	KMBOM04	Sourcing Management
2	KMBOM05	Management of Manufacturing System

## Strategic Management

Code: KMB301

Credits: 3

Teaching Hours: 36

### Course Objectives

1. A clear understanding of the key concepts and principles of strategic management
2. A set of useful analytical skills, tools and techniques for analyzing a company strategically
3. To provide a basic understanding of the nature and dynamics of the strategy formulation and implementation processes.
4. To encourage students to think critically and strategically.
5. The ability to identify strategic issues and design appropriate courses of action.

  
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**Syllabus**

**For**

**M.Tech. (Biotechnology)**

**(Effective from the Session: 2016-17)**

2017-18

2018-19

2019-20

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**Study and Evaluation Scheme  
M.TECH. BIO-TECHNOLOGY  
(Effective from the session: 2016-17)**

1<sup>st</sup> Year, 1<sup>st</sup> Semester

S No.	Subject Code	Name of the Subject	Periods			Credit	Theory			Practical		Subject Total
			L	T	P		CT	TA	ESE	TA	ESE	
1	MTBT101	Applied Biochemistry & Molecular Biology	3	0	0	3	20	10	70	--	--	100
2	MTBT102	Bioprocess Engineering & Technology	3	0	0	3	20	10	70	--	--	100
3	MTBT01?	Departmental Elective - I	3	0	0	3	20	10	70	--	--	100
4	MTBT02?	Departmental Elective - II	3	0	0	3	20	10	70	--	--	100
5		Research Process & Methodology	3	0	0	3	20	10	70	--	--	100
6	MTBT151	Applied Biochemistry & Molecular Biology Lab	--	--	3	2	--	--	--	20	30	50
7	MTBT152	Bioprocess Engineering & Technology Lab	--	--	2	1	--	--	--	20	30	50
		<b>Total</b>				<b>18</b>						<b>600</b>

**L: Lecture T: Tutorial P: Practical/Project CT: Class Test TA: Teacher's Assessment, ESE: End Semester Examination**

**Departmental Elective-I**

1. MTBT011: Immunology & Vaccine Technology
2. MTBT012: Quality Control in Biotechnology
3. MTBT013: Applied Clinical Research

**Departmental Elective-II**

1. MTBT021: Biological Treatment of Waste Water
2. MTBT022: Nano Biotechnology & Toxicology
3. MTBT023: Industrial Biotechnological Products

  
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**Study and Evaluation Scheme  
M.TECH. BIO-TECHNOLOGY  
(Effective from the session: 2016-17)**

1<sup>st</sup> Year, II<sup>nd</sup> Semester

S No.	Subject Code	Name of the Subject	Periods			Credit	Theory			Practical		Subject Total
			L	T	P		CT	TA	ESE	TA	ESE	
1	MTBT201	Bioinformatics	3	0	0	3	20	10	70	--	--	100
2	MTBT202	Entrepreneurship, IPR & Biosafety	3	0	0	3	20	10	70	--	--	100
3	MTBT03?	Departmental Elective - III	3	0	0	3	20	10	70	--	--	100
4	MTBT04?	Departmental Elective - IV	3	0	0	3	20	10	70	--	--	100
5	MTBT05?	Departmental Elective - V	3	0	0	3	20	10	70	--	--	100
6	MTBT251	Bioinformatics Lab	--	--	3	2	--	--	--	20	30	50
7	MTBT252	Seminar-I	--	--	2	1	--	--	--	50	--	50
		<b>Total</b>				<b>18</b>						<b>600</b>

**L: Lecture T: Tutorial P: Practical/Project CT: Class Test TA: Teacher's Assessment, ESE: End Semester Examination**

**Departmental Elective-III**

1. MTBT031: Genetic Engineering
2. MTBT032: Applied Food Biotechnology
3. MTBT033: Molecular Modelling & Industrial Application

**Departmental Elective-IV**

1. MTBT041: Bioreactor Analysis & Design
2. MTBT041: Enzyme Technology & Industrial Application
3. MTBT043: Applied Bioenergy

**Departmental Elective-V**

1. MTBT051: Tissue Culture Techniques
2. MTBT052: Diagnostic Techniques in Biotechnology
3. MTBT053: Fundamentals of Stem Cell Technology

  
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**Study and Evaluation Scheme  
M.TECH. BIO-TECHNOLOGY  
(Effective from the session: 2017-18)**

2<sup>nd</sup> Year, III<sup>rd</sup> Semester

S No.	Subject Code	Name of the Subject	Periods			Credit	Theory			Practical		Subject Total
			L	T	P		CT	TA	ESE	TA	ESE	
1	MTBT351	Seminar-II	0	0	6	3	--	--	--	100	--	100
2	MTBT352	Dissertation	0	0	30	15	--	--	--	200	300	500
		<b>Total</b>				<b>18</b>						<b>600</b>

2<sup>nd</sup> Year, IV<sup>th</sup> Semester

S No.	Subject Code	Name of the Subject	Periods			Credit	Theory			Practical		Subject Total
			L	T	P		CT	TA	ESE	TA	ESE	
1	MTBT451	Dissertation (Final)	0	0	3	3	--	--	--	200	400	600
		<b>Total</b>				<b>18</b>						<b>600</b>

L: Lecture T: Tutorial P: Practical/Project CT: Class Test TA: Teacher's Assessment, ESE: End Semester Examination

  
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**DR. A.P.J. ABDUL KALAM TECHNICAL UNIVERSITY,  
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**Syllabus**

**For**

**M.Tech. (Computer Science & Engineering)**

**(Effective from the Session: 2016-17)**

*Prabhu*

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

**SEMESTER –I**

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

**SEMESTER –II**

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

  
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## SEMESTER –III

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

## SEMESTER –IV

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

### Departmental Elective I

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

### Departmental Elective II

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

### Departmental Elective III-

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

  
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#### Departmental Elective IV

1. MTCS041: Distributed Databases
2. MTCS042: Software Project Planning & Management
3. MTCS043: Network Management
4. MTCS044: Robotics
5. MTCS045: Data Centre Management
6. MTCS046: Digital Forensics

#### Departmental Elective V

1. MTCS051: Optimization Techniques
2. MTCS052: Digital Image Processing
3. MTCS053: Professional Aspects in Software Engineering
4. MTCS054: Storage Area Network
5. MTCS055: Optical Networks
6. MTCS056: Advanced Data Modeling

  
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**Syllabus**

**For**

**M.Tech. (Mechanical Engineering)**

(Effective from the Session: 2016-17)

1

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

Semester -I

S. No.	Subject Code	Name of the Subject	Periods			Credit	Evaluation Scheme					Subject Total
			L	T	P		Theory			Practical		
							CT	TA	ESE	TA	ESE	
1	MTME 101	Simulation, Modelling & Analysis	3	0	0	3	20	10	70	--	--	100
2	MTME 102	Operations Research	3	0	0	3	20	10	70	--	--	100
3	MTME 01?	Departmental Elective-I	3	0	0	3	20	10	70	--	--	100
4		Departmental Elective-II	3	0	0	3	20	10	70	--	--	100
5		Research Process & Methodology	3	0	0	3	20	10	70	--	--	100
6	MTME 151	Simulation Modeling & Analysis Lab	-	-	3	2	--	--	--	20	30	50
7	MTME 152	Operations Research Lab	-	-	2	1	--	--	--	20	30	50
		<b>Total</b>				18						600

<b>Departmental Elective-I</b>	MTME 011	CAD/CAM
	MTME 012	Advanced Heat & Mass Transfer
	MTME 013	Renewable Energy System
	MTME 014	Reliability, Maintenance Management & Safety

<b>Departmental Elective-II</b>	MTTE 021	Turbo Machines
	MTME 021	Advanced Mechanical Vibrations
	MTTE 023	Advanced I.C. Engines
	MTME 022	Fracture Mechanics

**Semester –II**

S. No.	Subject Code	Name of the Subject	Periods			Credit	Evaluation Scheme					Subject Total
			L	T	P		Theory			Practical		
							CT	TA	ESE	TA	ESE	
	MTME 201	Computer Integrated Manufacturing (CIM)	3	0	0	3	20	10	70	--	--	100
1	MTME 202	Advanced Mechanics Of Solids	3	0	0	3	20	10	70	--	--	100
3		Departmental Elective-III	3	0	0	3	20	10	70	--	--	100
4	MTME 04?	Departmental Elective-IV	3	0	0	3	20	10	70	--	--	100
5	MTME 05?	Elective -V	3	0	0	3	20	10	70	--	--	100
6	MTME 251	Computer Integrated Manufacturing (CIM) Lab	-	-	3	2	--	--	--	20	30	50
7	MTME 252	Seminar-I	-	-	-	1	--	--	--	50	--	50
		<b>Total</b>				18						600

<b>Departmental Elective – III</b>	MTME 031	Advanced Finite Element Analysis
	MTME 032	Industrial Automation And Robotics
	MTME 033	Advanced Welding Technology
	MTTE 202	Computational Fluid Dynamics

<b>Departmental Elective – IV</b>	MTME 041	Optimization Techniques & Design Of Experiments
	MTME 042	Total Quality Management
	MTME 043	Advanced Mechanical Design
	MTME 044	Management Information System

<b>Elective – V</b>	MTME 051	Flexible Manufacturing System
	MTME 052	Machine Vision
	MTME 053	Additive Manufacturing And Tooling
	MTME 054	Modern Manufacturing Process



### Semester – III

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

### Semester – IV

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

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**Syllabus**

**For**

**M.Tech.**

**VLSI DESIGN**

**(VLSI & EMBEDDED SYSTEM,  
ELECTRONICS DESIGN & TECHNOLOGY,  
ELECTRONICS CIRCUITS & SYSTEM DESIGN)**

**(Effective from the Session: 2016-17)**

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

**Study and Evaluation Scheme M. Tech. in VLSI DESIGN**

(Effective from Session 2016-17)

**First Year, Semester-I**

Sr. No.	Course Code	Subject	Periods			Credit	Evaluation Scheme					Subject Total
			L	T	P		Theory			Practical		
							CT	TA	ESE	TA	ESE	
1.	MTVL101	Low Power VLSI Design	3	0	0	3	20	10	70	-	-	100
2.	MTVL102	FPGA Architecture & Applications	3	0	0	3	20	10	70	-	-	100
3.	MTVL01?	Departmental Elective I	3	0	0	3	20	10	70	-	-	100
4.	MTVL02?	Departmental Elective II	3	0	0	3	20	10	70	-	-	100
5.		Research Process & Methodology	3	0	0	3	20	10	70	-	-	100
6.	MTVL151	VLSI Circuit Design Lab	0	0	3	2	-	-	-	20	30	50
7.	MTVL152	FPGA Design Lab	0	0	3	1	-	-	-	20	30	50
		<b>Total</b>	<b>15</b>	<b>0</b>	<b>6</b>	<b>18</b>						<b>600</b>

**First Year, Semester-II**

Sr. No.	Course Code	Subject	Periods			Credit	Evaluation Scheme					Subject Total
			L	T	P		Theory			Practical		
							CT	TA	ESE	TA	ESE	
1.	MTVL201	Hardware Description Languages	3	0	0	3	20	10	70	-	-	100
2.	MTVL202	VLSI DSP Architectures	3	0	0	3	20	10	70	-	-	100
3.	MTVL03?	Departmental Elective III	3	0	0	3	20	10	70	-	-	100
4.	MTVL04?	Departmental Elective IV	3	0	0	3	20	10	70	-	-	100
5.	MTVL05?	Departmental Elective V	3	0	0	3	20	10	70	-	-	100
6.	MTVL251	Advanced VLSI Design Lab	0	0	3	2	-	-	-	20	30	50
7.	MTVL252	Seminar I	0	0	3	1	-	-	-	50		50
		<b>Total</b>	<b>15</b>		<b>6</b>	<b>18</b>						<b>600</b>

  
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Second Year, Semester-III

Sr. No.	Course Code	Subject	Periods			Credit	Evaluation Scheme					Subject Total
			L	T	P		Theory			Practical		
							CT	TA	ESE	TA	ESE	
1.	MTVL351	Seminar II	0	0	6	3	-	-	-	100	-	100
2.	MTVL352	Dissertation	0	0	30	15	-	-	-	200	300	500
		Total			36	18						600

Second Year, Semester-IV

S. No.	Course Code	Subject	Periods			Credit	Evaluation Scheme					Subject Total
			L	T	P		Theory			Practical		
							CT	TA	ESE	TA	ESE	
1.	MTVL451	Dissertation	0	0	36	18	-	-	-	200	400	600
		Total			36	18						600

Departmental Elective I

- MTVL 011: SOC Design
- MTVL 012: Designing with ASICS
- MTVL 013: Analog VLSI Design

Departmental Elective II

- MTVL 021: Advanced Embedded Systems
- MTVL 022: Testing of VLSI Circuits
- MTVL 023: Digital IC Design

Departmental Elective III

- MTVL 031: Advanced Microcontroller & Systems
- MTVL 032: VLSI based SignalProcessing Architectures
- MTVL 033: Analog IC Design

Departmental Elective IV

- MTVL 041: Real Time Operating Systems
- MTVL 042: VLSI Testing & Testability
- MTVL 043: Memory Technologies

Departmental Elective V

- MTVL 051: Algorithms for VLSI Design Automation
- MTVL 052: MEMS & Micro Sensor Design
- MTVL 053: Embedded System for Wireless Communication

  
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2018-19

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



**Evaluation Scheme & Syllabus for**

**B. Tech. (Bio Technology)**

**AS PER**

**AICTE MODEL CURRICULUM**

**(Effective from the Session: 2018-19)**

**B. Tech 1st Year (Bio Technology) Structure in accordance with  
AICTE Model Curriculum Effective w.e.f. Academic Session 2018-19**

**SEMESTER - I**

Sl. No.	Code	SUBJECT	PERIODS			EVALUATION SCHEME				END SEMESTER		TOTAL	CREDIT
			L	T	P	CT	TA	Total	PS	TE	PE		
<b>3 WEEKS COMPULSORY INDUCTION PROGRAM</b>													
1	KAS101/ KAS102	Physics/Chemistry	3	1	3	30	20	50	25	100	25	200	5.5
2	KBT101/ KBT102	Elementary Mathematics-I/Remedial Biology-I	3	1	0	30	20	50	-	100	-	150	4
3	KEE101/ KCS101	Basic Electrical Engineering/Programming for Problem Solving	3	1	2	30	20	50	25	100	25	200	5
4	KCE101/ KWS101	Engineering Graphics & Design/Workshop Practices	1	0	4	-	-	-	25	-	25	50	3
		MOOCs (For B.Tech. Hons. Degree)*											0
		<b>TOTAL</b>										600	17.5

**SEMESTER II**

Sl. No.	Code	SUBJECT	PERIODS			EVALUATION SCHEME				END SEMESTER		TOTAL	CREDIT
			L	T	P	CT	TA	Total	PS	TE	PE		
1	KAS201/ KAS201	Physics/Chemistry	3	1	3	30	20	50	25	100	25	200	5.5
2	KBT201/ KBT202	Elementary Mathematics-II/Remedial Biology-II	3	1	0	30	20	50	-	100	-	150	4
3	KEE201/ KCS201	Basic Electrical Engineering/Programming for Problem Solving	3	1	2	30	20	50	25	100	25	200	5
4	KCE201/ KWS201	Engineering Graphics & Design/Workshop Practices	1	0	4	-	-	-	25	-	25	50	3
5	KAS204	Professional English	2	0	2	30	20	50	-	100	-	150	3
		MOOCs (For B.Tech. Hons. Degree)*											0
		<b>TOTAL</b>										750	20.5
Mini Project or Internship (3-4 weeks) shall be conducted during summer break after II semester and will be assessed during III semester													

**\* List of MOOCs (NPTEL) Based Recommended Courses for first year B. Tech Students**

1. Developing Soft Skills and personality-Odd Semester-8 Weeks-3 Credits
2. Enhancing Soft Skills and personality-Even Semester-8 Weeks-3 Credits

**\* AICTE Guidelines in Model Curriculum:**

After successful completion of 160 credits, a student shall be eligible to get Under Graduate degree in Engineering. A student will be eligible to get Under Graduate degree with Honours only, if he/she completes additional university recommended courses only (Equivalent to 20 credits; NPTEL Courses of 4 Weeks, 8 Weeks and 12 Weeks shall be of 2, 3 and 4 Credits respectively) through MOOCs. For registration to MOOCs Courses, the students shall follow NPTEL Site <http://nptel.ac.in/> as per the NPTEL policy and norms. The students can register for these courses through NPTEL directly as per the course offering in Odd/Even Semesters at NPTEL. These NPTEL courses (recommended by the University) may be cleared during the B. Tech degree program (not necessary one course in each semester). After successful completion of these MooCs courses the students, shall, provide their successful completion NPTEL status/certificates to the University (COE) through their college of study only. The student shall be awarded Hons.

  
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Degree (on successful completion of MOOCS based 20 credit) only if he/she secures 7.50 or above CGPA and passed each subject of that Degree Programme in single attempt without any grace marks.

## SEMESTER - I

# A Guide to Induction Program

## 1 Introduction

*(Induction Program was discussed and approved for all colleges by AICTE in March 2017. It was discussed and accepted by the Council of IITs for all IITs in August 2016. It was originally proposed by a Committee of IIT Directors and accepted at the meeting of all IIT Directors in March 2016.<sup>1</sup> This guide has been prepared based on the Report of the Committee of IIT Directors and the experience gained through its pilot implementation in July 2016 as accepted by the Council of IITs. Purpose of this document is to help institutions in understanding the spirit of the accepted Induction Program and implementing it.)*

Engineering colleges were established to train graduates well in the branch/department of admission, have a holistic outlook, and have a desire to work for national needs and beyond. The graduating student must have knowledge and skills in the area of his study. However, he must also have broad understanding of society and relationships. Character needs to be nurtured as an essential quality by which he would understand and fulfill his responsibility as an engineer, a citizen and a human being. Besides the above, several meta-skills and underlying values are needed.

There is a mad rush for engineering today, without the student determining for himself his interests and his goals. This is a major factor in the current state of demotivation towards studies that exists among UG students. The success of gaining admission into a desired institution but failure in getting the desired branch, with peer pressure generating its own problems, leads to a peer environment that is demotivating and corrosive. Start of hostel life without close parental supervision at the same time, further worsens it with also a poor daily routine.

To come out of this situation, a multi-pronged approach is needed. One will have to work closely with the newly joined students in making them feel comfortable, allow them to explore their academic interests and activities, reduce competition and make them

A Committee of IIT Directors was setup in the 152nd Meeting of IIT Directors on 6th September 2015 at IIT Patna, on how to motivate undergraduate students at IITs towards studies, and to develop verbal ability. The Committee submitted its

  
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UNIVERSITY, LUCKNOW**



**Evaluation Scheme & Syllabus for**

**B. Tech.**

**(All Branches except Agriculture & Bio Tech)**

**AS PER**

**AICTE MODEL CURRICULUM**

**(Effective from the Session: 2018-19)**

*Prabodh*  
Director  
IMS Engineering College  
Ghaziabad

**B. Tech 1st Year (All branches except Bio Technology and Agriculture Engg.) Structure in accordance with AICTE Model Curriculum Effective w.e.f. Academic Session 2018-19**

**SEMESTER - I**

Sl. No	Code	SUBJECT	PERIODS			EVALUATION SCHEME				END SEMESTER		TOTAL	CREDIT
			L	T	P	CT	TA	Total I	PS	TE	PE		
<b>3 WEEKS COMPULSORY INDUCTION PROGRAM</b>													
1	KAS101/ KAS102	Physics/Chemistry	3	1	3	30	20	50	25	100	25	200	5.5
2	KAS103	Mathematics-I	3	1	0	30	20	50	-	100	-	150	4
3	KEE 101/ KCS101	Basic Electrical Engineering/Programming for Problem Solving	3	1	2	30	20	50	25	100	25	200	5
4	KCE101/ KWS101	Engineering Graphics & Design/Workshop Practices	1	0	4	-	-	-	25	-	25	50	3
		MOOCs (For B.Tech. Hons. Degree)*											0
		<b>TOTAL</b>										600	17.5

**SEMESTER II**


Sl. No.	Code	SUBJECT	PERIODS			EVALUATION SCHEME				END SEMESTER		TOTAL	CREDIT
			L	T	P	CT	TA	Total	PS	TE	PE		
1	KAS201/ KAS202	Physics/Chemistry	3	1	3	30	20	50	25	100	25	200	5.5
2	KAS203	Mathematics II	3	1	0	30	20	50	-	100	-	150	4
3	KEE201/ KCS201	Basic Electrical Engineering/Programming for Problem Solving	3	1	2	30	20	50	25	100	25	200	5
4	KCE201/ KWS201	Engineering Graphics & Design/Workshop Practices	1	0	4	-	-	-	25	-	25	50	3
5	KAS204	Professional English	2	0	2	30	20	50	-	100	-	150	3
		MOOCs (For B.Tech. Hons. Degree)*											0
		<b>TOTAL</b>										750	20.5
<b>Mini Project or Internship (3-4 weeks) shall be conducted during summer break after II semester and will be assessed during III semester</b>													

**\* List of MOOCs (NPTEL) Based Recommended Courses for first year B. Tech Students**

1. Developing Soft Skills and personality-Odd Semester-8 Weeks-3 Credits
2. Enhancing Soft Skills and personality-Even Semester-8 Weeks-3 Credits

**\* AICTE Guidelines in Model Curriculum:**

After successful completion of 160 credits, a student shall be eligible to get Under Graduate degree in Engineering. A student will be eligible to get Under Graduate degree with Honours only, if he/she completes additional university recommended courses only (Equivalent to 20 credits; NPTEL Courses of 4 Weeks, 8 Weeks and 12 Weeks shall be of 2, 3 and 4 Credits respectively) through MOOCs. For registration to MOOCs Courses, the students shall follow NPTEL Site <http://nptel.ac.in/> as per the NPTEL policy and norms. The students can register for these courses through NPTEL directly as per the course offering in Odd/Even Semesters at NPTEL. These NPTEL courses (recommended by the University) may be cleared during the B. Tech degree program (not necessary one course in each semester). After successful completion of these MooCs courses the students, shall, provide their successful completion NPTEL status/certificates to the University (COE) through their college of study only. The student shall be awarded Hons. Degree (on successful completion of MOOCS based 20 credit) only if he/she secures 7.50 or above CGPA and passed each subject of that Degree Programme in single attempt without any grace marks.

  
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 Ghaziabad

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



**Study & Evaluation Scheme with Syllabus**

**For**

**B.Tech. Second Year**

**(Computer Science and Engineering, Computer Engg. & Information  
Technology)**

**On**

**Choice Based Credit System**

**(Effective from the Session: 2017-18)**

  
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Ghaziabad

**2<sup>nd</sup> Year III-SEMESTER**

S. No.	Subject Code	Subject Name	L-T-P	ESE Marks	Sessional		Total	Credit
					CT	TA		
1.	RAS301/ ROE030, 032 to 037, 039	Mathematics-III/ Science Based OE	3-1-0	70	20	10	100	4
2.	RVE301/ RAS302	Universal Human Values & Professional Ethics / Environment & Ecology	3-0-0	70	20	10	100	3
3.	REC301	Digital Logic Design	3-0-0	70	20	10	100	3
4.	RCS301	Discrete Structures & Theory of Logic	3-0-0	70	20	10	100	3
5.	RCS302	Computer Organization and Architecture	3-0-0	70	20	10	100	3
6.	RCS305	Data Structures	3-1-0	70	20	10	100	4
7.	REC351	Digital Logic Design Lab	0-0-2	50	30	20	100	1
8.	RCS351	Discrete Structure & Logic Lab	0-0-2	50	30	20	100	1
9.	RCS352	Computer Organization Lab	0-0-2	50	30	20	100	1
10.	RCS355	Data Structures Using C/ Java Lab	0-0-2	50	30	20	100	1
11.	RME101*	Elements of Mechanical Engineering*	3-1-0	70	20	10	100*	--
12.	RCE151*	Computer Aided Engineering Graphics*	0-0-3	50	30	20	100*	--
<b>TOTAL</b>							<b>1000</b>	<b>24</b>

CT: Class Test


TA: Teacher Assessment

L/T/P: Lecture/ Tutorial/ Practical

**\*B.Tech. II<sup>nd</sup> year lateral entry students belonging to B.Sc. Stream, shall clear the subjects RCE151/RCE251 and RME101/201 of the first year Engineering Programme along with the second year subjects.**

**Science Based Open Electives:**

- a. ROE030/040 Manufacturing Process
- b. ROE032/042 Nano Science
- c. ROE033/043 Laser System and Application
- d. ROE034/044 Space Science
- e. ROE035/045 Polymer Science & Technology
- f. ROE036/046 Nuclear Science
- g. ROE037/047 Material Science
- h. ROE039/049 Applied Linear Algebra

  
 P. Prasad  
 Director  
 IMS Engineering College  
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**2<sup>nd</sup> Year IV-SEMESTER**

S. No.	Subject Code	Subject Name	L-T-P	ESE Marks	Sessional		Total	Credit
					CT	TA		
1.	ROE040, 042 to 047, 049/ RAS401	Science Based OE/ Mathematics-III	3-1-0	70	20	10	100	4
2.	RAS402/ RVE401	Environment & Ecology/ Universal Human Values & Professional Ethics	3-0-0	70	20	10	100	3
3.	REC405	Introduction to Microprocessor	3-0-0	70	20	10	100	3
4.	RCS401	Operating Systems	3-0-0	70	20	10	100	3
5.	RCS402	Software Engineering	3-0-0	70	20	10	100	3
6.	RCS403	Theory of Automata and Formal Languages	3-1-0	70	20	10	100	4
7.	RCS451	Operating Systems Lab	0-0-2	50	30	20	100	1
8.	RCS452	Software Engineering Lab	0-0-2	50	30	20	100	1
9.	RCS453	TAFL Lab	0-0-2	50	30	20	100	1
10.	RCS454	Python Language Programming Lab	0-0-2	50	30	20	100	1
11.	RME201*	Elements of Mechanical Engineering*	3-1-0	70	20	10	100*	--
12.	RCE251*	Computer Aided Engineering Graphics*	0-0-3	50	30	20	100*	--
<b>TOTAL</b>							<b>1000</b>	<b>24</b>

CT: Class Test


TA: Teacher Assessment

L/T/P: Lecture/ Tutorial/ Practical

**\*B.Tech. II<sup>nd</sup> year lateral entry students belonging to B.Sc. Stream, shall clear the subjects RCE151/RCE251 and RME101/201 of the first year Engineering Programme along with the second year subjects.**

**Science Based Open Electives:**

- a. ROE030/040 Manufacturing Process
- b. ROE032/042 Nano Science
- c. ROE033/043 Laser System and Application
- d. ROE034/044 Space Science
- e. ROE035/045 Polymer Science & Technology
- f. ROE036/046 Nuclear Science
- g. ROE037/047 Material Science
- h. ROE039/049 Applied Linear Algebra

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



**Evaluation Scheme & Syllabus**

**For**

**B. Tech. Third Year**

**(Computer Science and Engineering)**

**(Computer Science and Information Technology)**

**On**

**Choice Based Credit System**

**(Effective from the Session: 2018-19)**

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

  
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**B. Tech. (CSE\CSIT)**  
**FIFTH SEMESTER**

Sl No.	Subject Code	Subject Name	L-T-P	Theory/ Lab (ESE) Marks	Sessional		Total	Credi t
					Test	Assign/Att		
1	RAS501	MANEGERIAL ECONOMICS	3---0---0	70	20	10	100	3
2	RAS502/ RUC501	INDUSTRIAL SOCIOLOGY /CYBER SECURITY	3---0---0	70	20	10	100	3
3	RCS-501	Database Management Systems	3---0---0	70	20	10	100	3
4	RCS-502	Design and Analysis of Algorithm	3---1---0	70	20	10	100	4
5	RCS-503	Principles of Programming Languages	3---0---0	70	20	10	100	3
6	CS-Elective-1	DEPTT ELECTIVE COURSE-1	3---1---0	70	20	10	100	4
7	RCS-551	Database Management Systems Lab	0---0---2	50	-	50	100	1
8	RCS-552	Design and Analysis of Algorithm Lab	0---0---2	50	-	50	100	1
9	RCS-553	Principles of Programming Languages Lab	0---0---2	50	-	50	100	1
10	RCS-554	Web Technologies Lab	0---0---2	50	-	50	100	1
	<b>TOTAL</b>						<b>1000</b>	<b>24</b>

**SIXTH SEMESTER**

Sl No.	Subject Code	Subject Name	L-T-P	Theory/ Lab (ESE) Marks	Sessional		Total	Credi t
					Test	Assign/Att		
1	RAS601	INDUSTRIAL MANAGEMENT	3---0---0	70	20	10	100	3
2	RAS602 / RUC601	INDUSTRIAL SOCIOLOGY/ CYBER SECURITY	3---0---0	70	20	10	100	3
3	RCS-601	Computer Networks	3---0---0	70	20	10	100	3
4	RCS-602	Compiler Design	3---1---0	70	20	10	100	4
5	RCS-603	Computer Graphics	3---0---0	70	20	10	100	3
6	CS-Elective-2	DEPTT ELECTIVE COURSE-2	3---1---0	70	20	10	100	4
7	RCS-651	Computer Networks Lab	0---0---2	50	-	50	100	1
8	RCS-652	Compiler Design Lab	0---0---2	50	-	50	100	1
9	RCS-653	Computer Graphics Lab	0---0---2	50	-	50	100	1
10	RCS-654	Data Warehousing & Data Mining Lab	0---0---2	50	-	50	100	1
	<b>TOTAL</b>						<b>1000</b>	<b>24</b>

  
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## DEPARTMENTAL ELECTIVES

### **CS-ELECTIVE -1: Computer Science and Engineering Elective-1**

RIT-051: SOFTWARE PROJECT MANAGEMENT

RIT-052: SOFTWARE TESTING & AUDIT

RCS-051: OPERATION RESEARCH

RCS-052: WEB TECHNOLOGIES

### **CS-ELECTIVE-2: Computer Science Departmental Elective-2**

RIT-061: DESIGN AND DEVELOPMENT OF APPLICATIONS

RIT-062: DATA WAREHOUSING & DATA MINING

RCS-061: INTERNET OF THINGS

RCS-062: NEURAL NETWORK

**Dr.A.P.J.Abdulkalam Technical University, UttarPardesh,Lucknow**  
 (Formerly Uttar Pradesh Technical University)  
**STUDY EVALUATION SCHEME**  
**B. TECH. COMPUTER SCIENCE & ENGINEERING**  
**YEAR forth, SEMESTER –VII**  
**(Effective from the session: 2016-17)**

S.No.	Subject Code	Subject	Period	Evaluation Scheme				Total	Credit
				Sessional			Exam		
				CT	TA	Total			
1		Open Elective I	3-1-0	30	20	50	100	150	4
2	NCS-701	Distributed System	3-1-0	30	20	50	100	150	4
3	NCS-702	Artificial Intelligence	3-1-0	30	20	50	100	150	4
4		Departmental Elective III	3-1-0	30	20	50	100	150	4
5		Departmental Elective IV	3-1-0	30	20	50	100	150	4
<b>Practical / Training /Projects</b>									
6	NCS-751	Distributed System *	0-0-2	-	20	20	30	50	1
7	NCS-752	Project	0-0-6	-	100	100	-	100	3
8	NCS-753	Industrial Training	0-0-2	-	50	50	-	50	1
9	GP-701	General Proficiency	-	-	-	-	-	50	-
		<b>Total</b>	<b>15-5-10</b>					<b>1000</b>	<b>25</b>

1. Practical Training done after 6<sup>th</sup> Semester would be evaluated in 7<sup>th</sup> semester through Report and Viva-voce.
2. Project has to be initiated in 7<sup>th</sup> semester beginning and completed by the end of 8<sup>th</sup> semester with proper report and demonstration.

\* At least 10 problems are to be considered based on corresponding theory course.

*P. Singh*  
 Director  
 IMS Engineering College  
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### **Open Elective I**

1. NOE-071 Entrepreneurship Development
2. NOE-072 Quality Management
3. NOE-073 Operations Research
4. NOE-074 Introduction to Bio Technology
5. NOE-075 Mobile Application Development
6. NOE-076 Ethical Hacking and Prevention
7. NOE-077 Software Project Management

### **Open Elective II**

1. NOE-081 Non Conventional Energy Resources
2. NOE-082 Non Linear Dynamics Systems
3. NOE-083 Product Development
4. NOE-084 Automation and Robotics

### **Departmental Elective III**

1. NCS-071 Software Testing and Audit
2. NCS-072 Neural Network
3. NCS-073 Computer Vision

### **Departmental Elective IV**

1. NCS-074 High Speed Network
2. NCS-075 Android Operating System
3. NCS-076 Service Oriented Architecture
4. NIT-701 Cryptographic & Network Security

### **Departmental Elective V**

1. NCS-080 Pattern Recognition
2. NCS-081 High Performance Computing
3. NCS-082 Real Time System
4. NCS-083 Cluster Computing
5. NCS-084 Grid Computing

### **Departmental Elective VI**

1. NCS-085 Data Compression
2. NCS-086 Quantum Computing
3. NCS-087 Embedded Systems
4. NCS-088 Semantic Web and Web Services

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



**Study & Evaluation Scheme with Syllabus**

**For**

**B.Tech. Second Year**

**Information Technology**

**On**

**Choice Based Credit System**

**(Effective from the Session: 2017-18)**

**2<sup>nd</sup> Year III-SEMESTER**

S. No.	Subject Code	Subject Name	L-T-P	ESE Marks	Sessional		Total	Credit
					CT	TA		
1.	RAS301/ ROE030, 032 to 037, 039	Mathematics-III/ Science Based OE	3-1-0	70	20	10	100	4
2.	RVE301/ RAS302	Universal Human Values & Professional Ethics / Environment & Ecology	3-0-0	70	20	10	100	3
3.	REC301	Digital Logic Design	3-0-0	70	20	10	100	3
4.	RCS301	Discrete Structures & Theory of Logic	3-0-0	70	20	10	100	3
5.	RCS302	Computer Organization and Architecture	3-0-0	70	20	10	100	3
6.	RCS305	Data Structures	3-1-0	70	20	10	100	4
7.	REC351	Digital Logic Design Lab	0-0-2	50	30	20	100	1
8.	RCS351	Discrete Structure & Logic Lab	0-0-2	50	30	20	100	1
9.	RCS352	Computer Organization Lab	0-0-2	50	30	20	100	1
10.	RCS355	Data Structures Using C/ Java Lab	0-0-2	50	30	20	100	1
11.	RME101*	Elements of Mechanical Engineering*	3-1-0	70	20	10	100*	--
12.	RCE151*	Computer Aided Engineering Graphics*	0-0-3	50	30	20	100*	--
<b>TOTAL</b>							<b>1000</b>	<b>24</b>

CT: Class Test

TA: Teacher Assessment

L/T/P: Lecture/ Tutorial/ Practical

\*B.Tech. II<sup>nd</sup> year lateral entry students belonging to B.Sc. Stream, shall clear the subjects RCE151/RCE251 and RME101/201 of the first year Engineering Programme along with the second year subjects.

**Science Based Open Electives:**

- ROE030/040 Manufacturing Process
- ROE032/042 Nano Science
- ROE033/043 Laser System and Application
- ROE034/044 Space Science
- ROE035/045 Polymer Science & Technology
- ROE036/046 Nuclear Science
- ROE037/047 Material Science
- ROE039/049 Applied Linear Algebra

  
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**2<sup>nd</sup> Year IV-SEMESTER**

S. No.	Subject Code	Subject Name	L-T-P	ESE Marks	Sessional		Total	Credit
					CT	TA		
1.	ROE040, 042 to 047, 049/ RAS401	Science Based OE/ Mathematics-III	3-1-0	70	20	10	100	4
2.	RAS402/ RVE401	Environment & Ecology/ Universal Human Values & Professional Ethics	3-0-0	70	20	10	100	3
3.	REC406	Information Theory and Coding	3-0-0	70	20	10	100	3
4.	RCS401	Operating Systems	3-0-0	70	20	10	100	3
5.	RCS402	Software Engineering	3-0-0	70	20	10	100	3
6.	RCS403	Theory of Automata and Formal Languages	3-1-0	70	20	10	100	4
7.	RCS451	Operating Systems Lab	0-0-2	50	30	20	100	1
8.	RCS452	Software Engineering Lab	0-0-2	50	30	20	100	1
9.	RCS453	TAFL Lab	0-0-2	50	30	20	100	1
10.	RCS454	Python Language Programming Lab	0-0-2	50	30	20	100	1
11.	RME201*	Elements of Mechanical Engineering*	3-1-0	70	20	10	100*	--
12.	RCE251*	Computer Aided Engineering Graphics*	0-0-3	50	30	20	100*	--
	<b>TOTAL</b>						<b>1000</b>	<b>24</b>

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

**\*B.Tech. II<sup>nd</sup> year lateral entry students belonging to B.Sc. Stream, shall clear the subjects RCE151/RCE251 and RME101/201 of the first year Engineering Programme along with the second year subjects.**

**Science Based Open Electives:**

- a. ROE030/040 Manufacturing Process
- b. ROE032/042 Nano Science
- c. ROE033/043 Laser System and Application
- d. ROE034/044 Space Science
- e. ROE035/045 Polymer Science & Technology
- f. ROE036/046 Nuclear Science
- g. ROE037/047 Material Science
- h. ROE039/049 Applied Linear Algebra

  
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 IMS Engineering College  
 Ghaziabad

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



**Evaluation Scheme & Syllabus**

**For**

**B. Tech. Third Year**

**(Computer Science and Engineering)**

**(Computer Science and Information Technology)**

**On**

**Choice Based Credit System**

**(Effective from the Session: 2018-19)**

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

  
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IMS Engineering College  
Ghaziabad



## B. Tech. (CSE\CSIT)

### FIFTH SEMESTER

Sl No.	Subject Code	Subject Name	L-T-P	Theory/ Lab (ESE) Marks	Sessional		Total	Credi t
					Test	Assign/Att		
1	RAS501	MANEGERIAL ECONOMICS	3---0---0	70	20	10	100	3
2	RAS502/ RUC501	INDUSTRIAL SOCIOLOGY /CYBER SECURITY	3---0---0	70	20	10	100	3
3	RCS-501	Database Management Systems	3---0---0	70	20	10	100	3
4	RCS-502	Design and Analysis of Algorithm	3---1---0	70	20	10	100	4
5	RCS-503	Principles of Programming Languages	3---0---0	70	20	10	100	3
6	CS-Elective-1	DEPTT ELECTIVE COURSE-1	3---1---0	70	20	10	100	4
7	RCS-551	Database Management Systems Lab	0---0---2	50	-	50	100	1
8	RCS-552	Design and Analysis of Algorithm Lab	0---0---2	50	-	50	100	1
9	RCS-553	Principles of Programming Languages Lab	0---0---2	50	-	50	100	1
10	RCS-554	Web Technologies Lab	0---0---2	50	-	50	100	1
	<b>TOTAL</b>						<b>1000</b>	<b>24</b>

### SIXTH SEMESTER

Sl No.	Subject Code	Subject Name	L-T-P	Theory/ Lab (ESE) Marks	Sessional		Total	Credi t
					Test	Assign/Att		
1	RAS601	INDUSTRIAL MANAGEMENT	3---0---0	70	20	10	100	3
2	RAS602 / RUC601	INDUSTRIAL SOCIOLOGY/ CYBER SECURITY	3---0---0	70	20	10	100	3
3	RCS-601	Computer Networks	3---0---0	70	20	10	100	3
4	RCS-602	Compiler Design	3---1---0	70	20	10	100	4
5	RCS-603	Computer Graphics	3---0---0	70	20	10	100	3
6	CS-Elective-2	DEPTT ELECTIVE COURSE-2	3---1---0	70	20	10	100	4
7	RCS-651	Computer Networks Lab	0---0---2	50	-	50	100	1
8	RCS-652	Compiler Design Lab	0---0---2	50	-	50	100	1
9	RCS-653	Computer Graphics Lab	0---0---2	50	-	50	100	1
10	RCS-654	Data Warehousing & Data Mining Lab	0---0---2	50	-	50	100	1
	<b>TOTAL</b>						<b>1000</b>	<b>24</b>

  
Director  
IMS Engineering College  
Ghaziabad

## DEPARTMENTAL ELECTIVES

### **CS-ELECTIVE -1: Computer Science and Engineering Elective-1**

RIT-051: SOFTWARE PROJECT MANAGEMENT

RIT-052: SOFTWARE TESTING & AUDIT

RCS-051: OPERATION RESEARCH

RCS-052: WEB TECHNOLOGIES

### **CS-ELECTIVE-2: Computer Science Departmental Elective-2**

RIT-061: DESIGN AND DEVELOPMENT OF APPLICATIONS

RIT-062: DATAWAREHOUSING & DATA MINING

RCS-061: INTERNET OF THINGS

RCS-062: NEURAL NETWORK

**Dr.A.P.J.Abdul**  
**kalam Technical University,UttarPardesh,Lucknow**  
 (Formerly Uttar Pradesh Technical University)  
**STUDY EVALUATION SCHEME**  
**INFORMATION TECHNOLOGY**  
**YEAR forth, SEMESTER –VII**  
**(Effective from the session: 2016-17)**

S.No.	Subject Code	Subject	Period	Evaluation Scheme				Total	Credit
				Sessional			Exam		
				CT	TA	Total			
1		<u>Open Elective I</u>	3-1-0	30	20	50	100	150	4
2	NIT-701	Cryptography & Network Security	3-1-0	30	20	50	100	150	4
3	NCS-702	Artificial Intelligence	3-1-0	30	20	50	100	150	4
4		<u>Departmental Elective III</u>	3-1-0	30	20	50	100	150	4
5		<u>Departmental Elective IV</u>	3-1-0	30	20	50	100	150	4
<u>Practical / Training /Projects</u>									
6	NIT-751	Cryptography & Network Security*	0-0-2	-	20	20	30	50	1
7	NCS-752	Project	0-0-6	-	100	100	-	100	3
8	NCS-753	Industrial Training	0-0-2	-	50	50	-	50	1
9	GP-701	General Proficiency	-	-	-	-	-	50	
		Total	15-5-10					1000	25

1. Practical Training done after 6<sup>th</sup> Semester would be evaluated in 7<sup>th</sup> semester through Report and Viva-voce
2. Project has to be initiated in 7<sup>th</sup> semester beginning and completed by the end of 8<sup>th</sup> semester with proper report and demonstration.

\* At least 10 problems are to be considered based on corresponding theory course.

*Prabhu*  
 Director  
 IMS Engineering College  
 Ghazipur

**Dr.A.P.J.Abdulkalam Technical University,UttarPardesh,Lucknow**  
 (Formerly Uttar Pradesh Technical University)  
**STUDY EVALUATION SCHEME**  
**INFORMATION TECHNOLOGY**  
**YEAR forth, SEMESTER –VIII**  
**(Effective from the session: 2016-17)**

SNo	Subject Code	Subject	Period	Evaluation Scheme				Total	Credit
				Sessional			Exam		
				CT	TA	Total			
1		<u>Open Elective II</u>	3-1-0	30	20	50	100	150	4
2	NIT-801	Mobile Computing	3-1-0	30	20	50	100	150	4
3		<u>Departmental Elective V</u>	3-1-0	30	20	50	100	150	4
4		<u>Departmental Elective VI</u>	3-1-0	30	20	50	100	150	4
<b>Practicals / Training /Projects</b>									
5	NIT-851	Seminar	0-0-3	-	50	50	-	50	2
6	NCS-852	Project	0-0-12	-	100	100	200	300	7
7	GP-801	General Proficiency	-	-	-	-	-	50	
		<b>Total</b>	<b>12-4-15</b>					<b>1000</b>	<b>25</b>

\* At least 10 problems are to be considered based on corresponding theory course.

*P. S. S. S.*  
 Director  
 IMS Engineering College  
 Ghaziabad

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



**Study & Evaluation Scheme with Syllabus  
for  
B.Tech. Second Year  
Electrical Engineering / Electrical & Electronics Engineering**

**On  
Choice Based Credit System  
(Effective from the Session: 2017-18)**

*P. S. Chandra*  
Director  
IMS Engineering College  
Ghaziabad

**2<sup>nd</sup> Year III-SEMESTER**

S. No.	Subject Code	Subject Name	L-T-P	ESE Marks	Sessional		Total	Credit
					CT	TA		
1.	ROE030 to 039/ RAS301	Science Based Open Elective/ Mathematics-III	3-1-0	70	20	10	100	4
2.	RVE301/ RAS302	Universal Human Values & Professional Ethics/ Environment & Ecology	3-0-0	70	20	10	100	3
3.	REC309	Analog & Digital Electronics	3-0-0	70	20	10	100	3
4.	REE301	Electrical & Electronics Engineering Materials	3-0-0	70	20	10	100	3
5.	REE302	Electrical Measurements & Instrumentation	3-0-0	70	20	10	100	3
6.	REE303	Basic Signals & Systems	3-1-0	70	20	10	100	4
7.	REE351	Electrical Workshop	0-0-2	50	30	20	100	1
8.	REE352	Electrical Measurements Lab	0-0-2	50	30	20	100	1
9.	REE353	Simulation Lab – I	0-0-2	50	30	20	100	1
10.	REC359	Electronics Lab	0-0-2	50	30	20	100	1
11.	RME101*	Elements of Mechanical Engineering*	3-1-0	70	20	10	100*	--
12.	RCE151*	Computer Aided Engineering Graphics*	0-0-3	50	30	20	100*	--
Total							1000	24

CT: Class Test

TA: Teacher Assessment

L/T/P: Lecture/ Tutorial/ Practical

**\*B.Tech. II<sup>nd</sup> year lateral entry students belonging to B.Sc. Stream, shall clear the subjects RCE151/RCE251 and RME101/201 of the first year Engineering Programme along with the second year subjects.**

**Science Based Open Electives:**

- a. ROE030/ROE040 Manufacturing Process
- b. ROE031/ROE041 Introduction to soft computing
- c. ROE032/ROE042 Nano Science
- d. ROE033/ROE043 Laser System and Application
- e. ROE034/ROE044 Space Science
- f. ROE035/ROE045 Polymer Science & Technology
- g. ROE036/ROE046 Nuclear Science
- h. ROE037/ROE047 Material Science
- i. ROE038/ROE048 Discrete Mathematics
- j. ROE039/ROE049 Applied Linear Algebra

  
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 IMS Engineering College  
 Ghaziabad

**2<sup>nd</sup> Year IV-SEMESTER**

S. No.	Subject Code	Subject Name	L-T-P	ESE Marks	Sessional		Total	Credit
					CT	TA		
1.	RAS401/ ROE040 to 049	Mathematics-III/ Science Based Open Elective	3-1-0	70	20	10	100	4
2.	RAS402/ RVE401	Environment & Ecology/ Universal Human Values & Professional Ethics	3-0-0	70	20	10	100	3
3.	REC402	Electromagnetic Field Theory	3-1-0	70	20	10	100	4
4.	REE401	Power Plant Engineering	3-0-0	70	20	10	100	3
5.	REE402	Electrical Machines -I	3-0-0	70	20	10	100	3
6.	REE405	Network Analysis and Synthesis	3-0-0	70	20	10	100	3
7.	REE451	Simulation– II Lab	0-0-2	50	30	20	100	1
8.	REE452	Electrical Machines -I Lab	0-0-2	50	30	20	100	1
9.	REE453	Networks Lab	0-0-2	50	30	20	100	1
10.	REE454	Electrical Instrumentation Lab	0-0-2	50	30	20	100	1
11.	RME201*	Elements of Mechanical Engineering*	3-1-0	70	20	10	100*	--
12.	RCE251*	Computer Aided Engineering Graphics*	0-0-3	50	30	20	100*	--
Total							1000	24

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

**\*B.Tech. II<sup>nd</sup> year lateral entry students belonging to B.Sc. Stream, shall clear the subjects RCE151/RCE251 and RME101/201 of the first year Engineering Programme along with the second year subjects.**

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- b. ROE031/ROE041 Introduction to soft computing
- c. ROE032/ROE042 Nano Science
- d. ROE033/ROE043 Laser System and Application
- e. ROE034/ROE044 Space Science
- f. ROE035/ROE045 Polymer Science & Technology
- g. ROE036/ROE046 Nuclear Science
- h. ROE037/ROE047 Material Science
- i. ROE038/ROE048 Discrete Mathematics
- j. ROE039/ROE049 Applied Linear Algebra

  
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 IMS Engineering College  
 Ghaziabad



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



**EVALUATION SCHEME & SYLLABUS  
FOR**


**B. TECH. III YEAR**

**ELECTRICAL ENGINEERING /  
ELECTRICAL & ELECTRONICS ENGINEERING**

**ON**

**CHOICE BASED CREDIT SYSTEM (CBCS)**

**[Effective from the Session: 2018-19]**

  
Director  
IMS Engineering College  
Ghaziabad

**EVALUATION SCHEME**  
**B-TECH. ELECTRICAL ENGINEERING**  
**B-TECH. ELECTRICAL & ELECTRONICS ENGINEERING**

YEAR 3<sup>rd</sup> / SEMESTER-V

S. No.	Subject Code	Subject Name	Department	L-T-P	Th./Lab Marks	Sessional		Total	Credit
					ESE	CT	TA		
1	RAS501	MANAGERIAL ECONOMICS	Applied Science	3--0--0	70	20	10	100	3
2	RAS502/ RUC501	SOCIOLOGY /CYBER SECURITY	Applied Science	3--0--0	70	20	10	100	3
3	REE501	ELECTRICAL MACHINES -II	Core Deptt.	3--0--0	70	20	10	100	3
4	REE502	POWER TRANSMISSION & DISTRIBUTION	Core Deptt.	3--1--0	70	20	10	100	4
5	REE503	CONTROL SYSTEM	Core Deptt.	3--0--0	70	20	10	100	3
6	REE051 -054	DEPTT ELECTIVE COURSE-1	Core Deptt.	3--1--0	70	20	10	100	4
7	REE551	ELECTRICAL MACHINES -II LAB	Core Deptt.	0--0--2	50		50	100	1
8	REE553	CONTROL SYSTEM LAB	Core Deptt.	0--0--2	50		50	100	1
9	REE554	SOFTWARE BASED POWER SYSTEM LAB	Core Deptt.	0--0--2	50		50	100	1
10	REE555	SEMINAR - I		0--0--2			100	100	1
	<b>TOTAL</b>				620	120	260	1000	24

**DEPTT. ELECTIVE COURSE-1**

1. REE051: Power System Optimization
2. REE052: Principles of Communication
3. REE053: Fundamentals of Digital Signal Processing
4. REE054: Internet of Things

  
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EVALUATION SCHEME

B-TECH. ELECTRICAL ENGINEERING  
B-TECH. ELECTRICAL & ELECTRONICS ENGINEERING

YEAR 3<sup>rd</sup> / SEMESTER-VI

S. No.	Subject Code	Subject Name	Department	L-T-P	Th/Lab Marks	Sessional		Total	Credit
					ESE	CT	TA		
1	RAS601	INDUSTRIAL MANAGEMENT	Applied Science	3--0--0	70	20	10	100	3
2	RAS602 / RUC601	SOCIOLOGY /CYBER SECURITY	Applied Science	3--0--0	70	20	10	100	3
3	REE601	POWER ELECTRONICS	Core Deptt.	3--0--0	70	20	10	100	3
4	REE602	MICROPROCESSOR	Core Deptt.	3--1--0	70	20	10	100	4
5	REE603	POWER SYSTEM ANALYSIS	Core Deptt.	3--0--0	70	20	10	100	3
6	REE061 -064	DEPTT ELECTIVE COURSE-2	Core Deptt.	3--1--0	70	20	10	100	4
7	REE661	POWER ELECTRONICS LAB	Core Deptt.	0--0--2	50		50	100	1
8	REE662	MICROPROCESSOR LAB	Core Deptt.	0--0--2	50		50	100	1
9	REE664	ELECTRICAL DESIGN & FABRICATION LAB	Core Deptt.	0--0--2	50		50	100	1
10	REE665	SEMINAR - II		0--0--2			100	100	1
	<b>TOTAL</b>				620	120	260	1000	24

DEPTT. ELECTIVE COURSE-2

1. REE061 - Intelligent Sensors & Instrumentation
2. REE062 - Bio-medical Instrumentation
3. REE063 - High Voltage Engineering
4. REE064 - Special Electrical Machines

  
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**Dr. APJ ABDUL KALAM TECHNICAL UNIVERSITY, UTTAR PRADESH,  
LUCKNOW**

**STUDY AND EVALUATION SCHEME OF ELECTRICAL &  
ELECTRONICS ENGINEERING**

Fourth Year

Semester-VII

S.NO.	SUBJECT CODE	NAME OF THE SUBJECT	PERIODS			EVALUATION SCHEME			SUBJECT TOTAL	CREDIT	
			L	T	P	SESSIONAL ASSESMENT		ESE			
						CT	TA				TOTAL
<b>THEORY SUBJECT</b>											
1	NEN701	ELECTRIC DRIVES	3	1	0	30	20	50	100	150	4
2	NEN702	POWER STATION PRACTICE	3	1	0	30	20	50	100	150	4
3	NEC702A	ANALOG & DIGITAL COMMUNICATION	3	1	0	30	20	50	100	150	4
4	NEN031 to 033, NCS039	DEPARTMENTAL ELECTIVE-III	3	1	0	30	20	50	100	150	4
5	NOE071 to 074	OPEN ELECTIVE-1	3	1	0	30	20	50	100	150	4
<b>PRACTICAL/DESIGN/DRAWING</b>											
6	NEN751	POWER SYSTEM LAB	0	0	3	10	10	20	30	50	1
7	NEC752B	ADC LAB	0	0	3	10	10	20	30	50	1
8	NEN753	INDUSTRIAL TRAINING	0	0	2	30	20	50	--	50	1
9	NEN754	PROJECT	0	0	2	30	20	50	--	50	1
10	NGP701	GP					50	50		50	1
		<b>TOTAL</b>	<b>16</b>	<b>5</b>	<b>10</b>					<b>1000</b>	<b>24</b>

**LIST OF DEPARTMENTAL ELECTIVE-III**

NEN-031 POWER SYSTEM OPERATION AND CONTROL  
 NEN-032 ADVANCED MICROPROCESSORS AND MICROCONTROLLERS  
 NEN-033 FLEXIBLE AC TRANSMISSION SYSTEMS  
 NCS-039 OBJECT ORIENTED SYSTEMS AND C++

**LIST OF OPEN ELECTIVE-I**

NOE-071 ENTREPRENEURSHIP DEVELOPMENT  
 NOE-072 QUALITY MANAGEMENT  
 NOE-073 OPERATIONS RESEARCH  
 NOE-074 INTRODUCTION TO BIO TECHNOLOGY

*Prabodh*  
 Director  
 IMS Engineering College  
 Ghaziabad

## PROPOSED STUDY AND EVALUATION SCHEME OF ELECTRICAL & ELECTRONICS ENGINEERING

Fourth Year

Semester-VIII

S. NO.	SUBJECT CODE	NAME OF THE SUBJECT	PERIODS			EVALUATION SCHEME			SUBJECT TOTAL	CREDIT	
			L	T	P	SESSIONAL ASSESMENT		ESE			
						CT	TA				TOTAL
<b>THEORY SUBJECT</b>											
1	NEE801	ELECTRICAL & ELECTRONICS ENGINEERING MATERIALS	3	1	0	30	20	50	100	150	3
2	NEC802	EMBEDDED SYSTEM	3	1	0	30	20	50	100	150	4
3	NEE041 to 042; NEN043 to 044	DEPARTMENTAL ELECTIVE-IV	3	1	0	30	20	50	100	150	4
4	NOE081 to 082; NOE084 to 085	OPEN ELECTIVE-2	3	1	0	30	20	50	100	150	4
<b>PRACTICAL/DESIGN/DRAWING</b>											
5	NEN851	PROJECT	0	0	12	0	100	100	250	350	8
6	NGP801	GP					50	50		50	1
		TOTAL	14	5	12		180	350	650	1000	24

**LIST OF DEPARTMENTAL ELECTIVE IV**

NEE041 EHVAC&DC TRANSMISSION  
 NEE042 POWER QUALITY  
 NEN043 IMAGE PROCESSING  
 NEN044 SATELLITE COMMUNICATION

**LIST OF OPEN ELECTIVE 2**

NOE081 NON-CONVENTIONAL ENERGY RESOURCES  
 NOE082 NON LINEAR DYNAMIC SYSTEMS  
 NOE084 AUTOMATION & ROBOTICS  
 NOE085 DATABASE MANAGEMENT SYSTEM AND DATA MINING AND WAREHOUSING

  
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## NEE701/NEN 701: Electric Drives

L T P  
3 1 0

**UNIT-I: Fundamentals of Electric Drive:** Electric Drives and its parts, advantages of electric drives Classification of electric drives Speed-torque conventions and multi-quadrant operations Constant torque and constant power operation  
Types of load Load torque: components, nature and classification

**UNIT-II: Dynamics of Electric Drive:** Dynamics of motor-load combination Steady state stability of Electric Drive Transient stability of electric Drive  
**Selection of Motor Power rating:** Thermal model of motor for heating and cooling, classes of motor duty, determination of motor power rating for continuous duty, short time duty and intermittent duty. Load equalization

**UNIT-III: Electric Braking:** Purpose and types of electric braking, braking of DC, three phase induction and synchronous motors  
**Dynamics During Starting and Braking:** Calculation of acceleration time and energy loss during starting of DC shunt and three phase induction motors, methods of reducing energy loss during starting. Energy relations during braking, dynamics during braking

**UNIT-IV: Power Electronic Control of DC Drives:** Single phase and three phase controlled converter fed separately excited DC motor drives (continuous conduction only), dual converter fed separately excited DC motor drive, rectifier control of DC series motor. Supply harmonics, power factor and ripples in motor current Chopper control of separately excited DC motor and DC series motor.

**UNIT-V: Power Electronic Control of AC Drives:**

**Three Phase induction Motor Drive:**

Static Voltage control scheme, static frequency control scheme (VSI, CSI, and cyclo – converter based) static rotor resistance and slip power recovery control schemes.

**Three Phase Synchronous motor:**

Self controlled scheme

**Special Drives:**

Switched Reluctance motor, Brushless dc motor. Selection of motor for particular applications

**Text Books:**

1. G.K. Dubey, "Fundamentals of Electric Drives", Narosa publishing House.
2. S.K. Pillai, "A First Course on Electric Drives", New Age International.
3. B.N. Sarkar, "Fundamental of Industrial Drives", Prentice Hall of India Ltd.

**Reference Books:**

- 1 M. Chilkin, "Electric Drives", Mir Publishers, Moscow.
- 2 Mohammed A. El-Sharkawi, "Fundamentals of Electric Drives", Thomson Asia, Pvt. Ltd. Singapore.
- 3 N.K. De and Prashant K. Sen, "Electric Drives", Prentice Hall of India Ltd.
- 4 V. Subrahmanyam, "Electric Drives: Concepts and Applications", TataMcGraw Hill.

  
Director  
IMS Engineering College  
Ghaziabad

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



**Study & Evaluation Scheme with Syllabus  
for**

**B.Tech. Second Year**

**Electronics Engineering / Electronics & Communication Engineering /  
Electronics & Telecommunication Engineering / Electronics &  
Instrumentation Engineering / Instrumentation & Control Engineering /  
Applied Electronics & Control Engineering / Biomedical Engineering**

**On**

**Choice Based Credit System**

**(Effective from the Session: 2017-18)**

*Fresh D*  
Director  
TAS Engineering College  
Lucknow



**2<sup>nd</sup> Year III-SEMESTER**

S. No.	Subject Code	Subject Name	L-T-P	ESE Marks	Sessional		Total	Credit
					CT	TA		
1.	ROE030 to 039/ RAS301	Science Based Open Elective/ Mathematics-III	3-1-0	70	20	10	100	4
2.	RVE301/ RAS302	Universal Human Values & Professional Ethics/ Environment & Ecology	3-0-0	70	20	10	100	3
3.	REE305	Network Analysis and Synthesis	3-0-0	70	20	10	100	3
4.	REC301	Digital Logic Design	3-0-0	70	20	10	100	3
5.	REC302	Electronic Devices and Circuits	3-1-0	70	20	10	100	4
6.	REC303	Signals & Systems	3-0-0	70	20	10	100	3
7.	REC351	Digital Logic Design Lab	0-0-2	50	30	20	100	1
8.	REC352	Electronic Devices and Circuits Lab	0-0-2	50	30	20	100	1
9.	REC353	Signals & Systems Lab	0-0-2	50	30	20	100	1
10.	REC354	Electronics Workshop & PCB Design Lab	0-0-2	50	30	20	100	1
11.	RME101*	Elements of Mechanical Engineering*	3-1-0	70	20	10	100*	--
12.	RCE151*	Computer Aided Engineering Graphics*	0-0-3	50	30	20	100*	--
Total							1000	24

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TA: Teacher Assessment

L/T/P: Lecture/ Tutorial/ Practical

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- ROE031/ROE041 Introduction to soft computing
- ROE032/ROE042 Nano Science
- ROE033/ROE043 Laser System and Application
- ROE034/ROE044 Space Science
- ROE035/ROE045 Polymer Science & Technology
- ROE036/ROE046 Nuclear Science
- ROE037/ROE047 Material Science
- ROE038/ROE048 Discrete Mathematics
- ROE039/ROE049 Applied Linear Algebra

**2<sup>nd</sup> Year IV-SEMESTER**

S. No.	Subject Code	Subject Name	L-T-P	ESE Marks	Sessional		Total	Credit
					CT	TA		
1.	RAS401/ ROE040 to 049	Mathematics-III/ Science Based Open Elective	3-1-0	70	20	10	100	4
2.	RAS402/ RVE401	Environment & Ecology/ Universal Human Values & Professional Ethics	3-0-0	70	20	10	100	3
3.	REC401	Microprocessors & Microcontrollers	3-0-0	70	20	10	100	3
4.	REC402	Electromagnetic Field Theory	3-1-0	70	20	10	100	4
5.	REC403	Electronic Measurement & Instrumentation	3-0-0	70	20	10	100	3
6.	RCS406	Data Structure & Algorithms	3-0-0	70	20	10	100	3
7.	REC451	Microprocessors & Microcontrollers Lab	0-0-2	50	30	20	100	1
8.	REC452	Advanced Electronics System Lab	0-0-2	50	30	20	100	1
9.	REC453	Electronic Measurement & Instrumentation Lab	0-0-2	50	30	20	100	1
10.	RCS456	Data Structure & Algorithms Lab	0-0-2	50	30	20	100	1
11.	RME201*	Elements of Mechanical Engineering*	3-1-0	70	20	10	100*	--
12.	RCE251*	Computer Aided Engineering Graphics*	0-0-3	50	30	20	100*	--
Total							1000	24

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

**\*B.Tech. II<sup>nd</sup> year lateral entry students belonging to B.Sc. Stream, shall clear the subjects RCE151/RCE251 and RME101/201 of the first year Engineering Programme along with the second year subjects.**

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- d. ROE033/ROE043 Laser System and Application
- e. ROE034/ROE044 Space Science
- f. ROE035/ROE045 Polymer Science & Technology
- g. ROE036/ROE046 Nuclear Science
- h. ROE037/ROE047 Material Science
- i. ROE038/ROE048 Discrete Mathematics
- j. ROE039/ROE049 Applied Linear Algebra

  
 Director  
**IMS Engineering College**  
 Ghaziabad

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



**EVALUATION SCHEME & SYLLABUS  
FOR**

**B. TECH. III YEAR**

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

**ON**

**CHOICE BASED CREDIT SYSTEM (CBCS)**

**[Effective from the Session: 2018-19]**

*Prakash*  
Director  
IMS Engineering College  
Ghaziabad

## EVALUATION SCHEME

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

YEAR 3<sup>rd</sup>/ SEMESTER V

Sr. No.	Sub Code	Subject Name	L-T-P	Th/Lab Marks	Sessional		Total	Credit
				ESE	CT	TA		
1	RAS501	Managerial Economics	3--0--0	70	20	10	100	3
2	RAS502 /RUC501	Sociology/Cyber Security	3--0--0	70	20	10	100	3
3	REC501A	Integrated Circuits	3--0--0	70	20	10	100	3
4	REC502	Principles of Communication	3--1--0	70	20	10	100	4
5	REC503	Digital Signal Processing	3--0--0	70	20	10	100	3
6	REC051-055	Deptt. Elective Course 1	3--1--0	70	20	10	100	4
7	REC551	Integrated Circuits Lab	0--0--2	50		50	100	1
8	REC552	Communication Lab – I	0--0--2	50		50	100	1
9	REC553	Digital Signal Processing Lab	0--0--2	50		50	100	1
10	REC554	CAD of Electronics Lab-I	0--0--2	50		50	100	1
	<b>TOTAL</b>			<b>620</b>	<b>120</b>	<b>260</b>	<b>1000</b>	<b>24</b>

#### DEPTT ELECTIVE COURSE-1

1. REC051 - Antenna & wave propagation
2. REC052 - Computer Architecture and Organization
3. REC053- Real Time Systems
4. REC054- Artificial Neural Networks
5. REC055- Advance Semiconductor devices

  
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## EVALUATION SCHEME

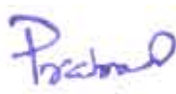
B.Tech. Electronics Engineering, B.Tech. Electronics & Communication Engineering, B.Tech.  
Electronics & Telecommunication Engineering

YEAR 3<sup>rd</sup>/ SEMESTER VI

Sr. No	Sub Code	Subject Name	L-T-P	Th/LAB Marks	Sessional		Total	Credit
				ESE	CT	TA		
1	RAS601	Industrial Management	3--0--0	70	20	10	100	3
2	RAS602 / RUC601	Sociology /Cyber Security	3--0--0	70	20	10	100	3
3	RIC603	Control System I	3--0--0	70	20	10	100	3
4	REC601	Microwave Engineering	3--1--0	70	20	10	100	4
5	REC602	Digital Communication	3--0--0	70	20	10	100	3
6	REC061 - 065	Deptt. Elective Course 2	3--1--0	70	20	10	100	4
7	REC-651	Microwave Engg Lab	0--0--2	50		50	100	1
8	REC-652	Communication Lab- II	0--0--2	50		50	100	1
9	RIC-653	Control System Lab-I	0--0--2	50		50	100	1
10	RIC-651	Microcontrollers For Embedded Systems Lab	0--0--2	50		50	100	1
	<b>TOTAL</b>			<b>620</b>	<b>120</b>	<b>260</b>	<b>1000</b>	<b>24</b>

### DEPTT ELECTIVE COURSE-2

1. REC061 - Industrial Electronics
2. REC062 - Microcontroller for Embedded Systems
3. REC063 - Analog Signal Processing
4. REC064 - Advance Digital Design Using Verilog
5. REC065- RADAR Engineering

  
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AKTU, LUCKNOW, U.P  
Study and Evaluation Scheme B. Tech. in Electronics Engg/Electronics & Communication  
Engg/Electronics & Telecommunication Engg  
[Effective from the session 2016-17]

YEAR 4<sup>th</sup>, SEMESTER-VII

S. No	Course Code	SUBJECT	PERIODS			Evaluation Scheme			Subject Total	Credit	
						SESSIONAL EXAM.					ESE
			L	T	P	CT	TA	Total			
<b>THEORY SUBJECTS</b>											
1.	NOE 07*	Open Elective-I**	3	1	0	30	20	50	100	150	4
2.	NEC 03*	Departmental Elective-III	3	1	0	30	20	50	100	150	4
3.	NEC 701	Optical Communication	3	1	0	30	20	50	100	150	4
4.	NEC 702B	Data Communication Networks	3	1	0	30	20	50	100	150	4
5.	NEC 703	VLSI Design	3	1	0	30	20	50	100	150	4
6.	AUC 001	*Human Values & Professional Ethics	2	0	0	15	10	25	50	75	-
<b>PRACTICAL/DESIGN/DRAWING</b>											
7.	NEC 751	Optical Communication & Networking Lab	0	0	2	-	20	20	30	50	1
8.	NEC 752A	Electronics Circuit Design	0	0	3	-	20	20	30	50	2
9.	NEC 753	Industrial Training Viva-Voce	0	0	2	-	50	50	-	50	1
10.	NEC 754	Project	0	0	2	-	50	50	-	50	1
11.	NGP 701	General Proficiency	-	-	-	-	-	50	-	50	1
		<b>Total</b>	<b>15</b>	<b>5</b>	<b>9</b>	<b>150</b>	<b>240</b>	<b>440</b>	<b>560</b>	<b>1000</b>	<b>26</b>

**\*\* Open Electives-I**

- NOE-071 Entrepreneurship Development
- NOE-072 Quality Management
- NOE-073 Operation Research
- NOE-074 Introduction to Biotechnology
- NOE-075 Micro and smart systems

  
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**Study and Evaluation Scheme B. Tech. in Electronics Engg/Electronics & Communication**  
**Engg/Electronics & Telecommunication Engg**  
**[Effective from the session 2016-17]**

**YEAR 4<sup>th</sup>, SEMESTER-VIII**

S. No.	Course Code	SUBJECT	PERIODS			Evaluation Scheme				Subject Total	Credit
						SESSIONAL EXAM.			ESE		
			L	T	P	CT	TA	Total			
<b>THEORY SUBJECTS</b>											
1.	NOE 08*	Open Elective-II**	3	1	0	30	20	50	100	150	4
2.	NEC 04*	Departmental Elective-IV	3	1	0	30	20	50	100	150	4
3.	NEC 801	Wireless & Mobile Communication	3	1	0	30	20	50	100	150	4
4.	NEC 802	Optical Network	3	1	0	30	20	50	100	150	3
5.	AUC 001	*Human Values & Professional Ethics	2	0	0	15	10	25	50	75	-
<b>PRACTICAL/DESIGN/DRAWING</b>											
6.	NEC 851	Project	0	0	12	-	100	100	250	350	8
7.	NGP 801	General Proficiency	-	-	-	-	-	50	-	50	1
		<b>Total</b>	<b>12</b>	<b>4</b>	<b>12</b>	<b>120</b>	<b>180</b>	<b>350</b>	<b>650</b>	<b>1000</b>	<b>24</b>

**\*\* Open Electives-II**

NOE-081 Non Conventional Energy Resources  
 NOE-082 Nonlinear Dynamic system  
 NOE-083 Product Development  
 NOE-084 Automation and Robotics

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## LIST OF ELECTIVES:

### Elective – III NEC 03\* Departmental Elective III

1. NEC 031 Information Theory & Coding
2. NEC 032 Digital Image Processing
3. NEC 033 Voice Over IP
4. NEC 034 Filter Design
5. NEC 035 Applied Fuzzy Electronic Systems

### Elective – IV NEC 04\* Departmental Elective IV

1. NEC 041 Electronic Switching
2. NEC 042 Digital System Design using VHDL
3. NEC 043 Speech Processing
4. NEC 044 Advanced Display Technologies & Systems
5. NEC 045 Satellite & RADAR systems

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**Study & Evaluation Scheme with Syllabus**

**For**

**B.Tech. Second Year**

(Mechanical Engineering/ Production Engineering, Industrial & Production Engineering, Mechanical & Industrial Engineering, Manufacturing Technology, Automobile Engineering, Aeronautical Engineering)

**On**

**Choice Based Credit System**

**(Effective from the Session: 2017-18)**

*Prakash*  
Director  
IMS Engineering College  
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**2<sup>nd</sup> Year III-SEMESTER**

S. No.	Subject Code	Subject Name	L-T-P	Th/Lab ESE	Sessional		Total	Credit
					CT	TA		
1.	RAS301/ ROE031 to 036, 038, 039	Mathematics-III/ Science Based OE	3-1-0	70	20	10	100	4
2.	RVE301/ RAS302	Universal Human Values & Professional Ethics / Environment & Ecology	3-0-0	70	20	10	100	3
3.	RCE303	Fluid Mechanics	3-0-0	70	20	10	100	3
4.	RME301	Material Science	3-0-0	70	20	10	100	3
5.	RME302	Thermodynamics	3-1-0	70	20	10	100	4
6.	RME303	Mechanics of Solids	3-0-0	70	20	10	100	3
7.	RCE353	Fluid Mechanics Lab	0-0-2	50	30	20	100	1
8.	RME351	Material Science & Testing Lab	0-0-2	50	30	20	100	1
9.	RME352	Thermodynamics Lab	0-0-2	50	30	20	100	1
10.	RME353	Computer Aided Machine Drawing-I Lab	0-0-2	50	30	20	100	1
11.	RME101*	Elements of Mechanical Engineering*	3-1-0	70	20	10	100*	--
12.	RCE151*	Computer Aided Engineering Graphics*	0-0-3	50	30	20	100*	--
<b>TOTAL</b>							<b>1000</b>	<b>24</b>

CT: Class Test

TA: Teacher Assessment

L/T/P: Lecture/ Tutorial/ Practical

\*B.Tech. II<sup>nd</sup> year lateral entry students belonging to B.Sc. Stream, shall clear the subjects RCE151/RCE251 and RME101/201 of the first year Engineering Programme along with the second year subjects.

**Science Based Open Electives:**

- a. ROE031/ROE041 Introduction to soft computing
- b. ROE032/ROE042 Nano Science
- c. ROE033/ROE043 Laser System and Application
- d. ROE034/ROE044 Space Science
- e. ROE035/ROE045 Polymer Science & Technology
- f. ROE036/ROE046 Nuclear Science
- g. ROE038/ROE048 Discrete Mathematics
- h. ROE039/ROE049 Applied Linear Algebra

  
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**2<sup>nd</sup> Year IV-SEMESTER**

S. No.	Subject Code	Subject Name	L-T-P	ESE Marks	Sessional		Total	Credit
					CT	TA		
1.	ROE041 to 046, 048, 049/ RAS401	Science Based OE/ Mathematics-III	3-1-0	70	20	10	100	4
2.	RAS402/ RVE401	Environment & Ecology/ Universal Human Values & Professional Ethics	3-0-0	70	20	10	100	3
3.	REE409	Electrical Machines & Controls	3-0-0	70	20	10	100	3
4.	RME401	Measurement and Metrology	3-0-0	70	20	10	100	3
5.	RME402	Manufacturing Science & Technology-I	3-0-0	70	20	10	100	3
6.	RME403	Applied Thermodynamics	3-1-0	70	20	10	100	4
7.	REE459	Electrical Machines and Controls Lab	0-0-2	50	30	20	100	1
8.	RME451	Measurement and Metrology Lab	0-0-2	50	30	20	100	1
9.	RME452	Manufacturing Science & Technology-I Lab	0-0-2	50	30	20	100	1
10.	RME453	Computer Aided Machine Drawing-II Lab	0-0-2	50	30	20	100	1
11.	RME201*	Elements of Mechanical Engineering*	3-1-0	70	20	10	100*	--
12.	RCE251*	Computer Aided Engineering Graphics*	0-0-3	50	30	20	100*	--
<b>TOTAL</b>							<b>1000</b>	<b>24</b>

CT: Class Test

TA: Teacher Assessment

L/T/P: Lecture/ Tutorial/ Practical

**\*B.Tech. II<sup>nd</sup> year lateral entry students belonging to B.Sc. Stream, shall clear the subjects RCE151/RCE251 and RME101/201 of the first year Engineering Programme along with the second year subjects.**

**NOTE:** Practical summer training-I of 4-weeks after IV semester or Minor fabrication project will be evaluated in VII semester.

**Science Based Open Electives:**

- a. ROE031/ROE041 Introduction to soft computing
- b. ROE032/ROE042 Nano Science
- c. ROE033/ROE043 Laser System and Application
- d. ROE034/ROE044 Space Science
- e. ROE035/ROE045 Polymer Science & Technology
- f. ROE036/ROE046 Nuclear Science
- g. ROE038/ROE048 Discrete Mathematics
- h. ROE039/ROE049 Applied Linear Algebra

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



**Syllabus**  
**for**  
**B. Tech. Mechanical Engineering**  
  
**Third Year**  
**(Effective from the Session: 2018-19)**

*Prabhat*  
Director  
IMS Engineering College  
Ghaziabad

## STUDY AND EVALUATION SCHEME

### B-Tech. Mechanical Engineering

### YEAR: 3<sup>rd</sup> / SEMESTER-VI

S. No.	Subject Code	Subject Name	Department	L-T-P	Theory / Lab Marks	SESSIONAL		Total	Credit
						Test	Assignment / Attendance		
1	RAS601	Industrial Management	Applied Science	3--0--0	70	20	10	100	3
2	RUC601/ RAS602	Cyber Security/ Sociology	Applied Science	3--0--0	70	20	10	100	3
3	RME601	Fluid Machinery	Core Deptt.	3--0--0	70	20	10	100	3
4	RME602	Theory of Machines	Core Deptt.	3--1--0	70	20	10	100	4
5	RME603	Machine Design-II	Core Deptt.	3--0--0	70	20	10	100	3
6	RME061- 064	Deptt. Elective Course-2	Core Deptt.	3--1--0	70	20	10	100	4
7	RME651	Fluid Machinery Lab	Core Deptt.	0--0--2	50		50	100	1
8	RME652	Theory of Machines Lab	Core Deptt.	0--0--2	50		50	100	1
9	RME653	Design and Simulation Lab II	Core Deptt.	0--0--2	50		50	100	1
10	RME654	Refrigeration & Air- conditioning	Core Deptt.	0--0--2	50		50	100	1
<b>TOTAL</b>								<b>1000</b>	<b>24</b>

#### DEPTT ELECTIVE COURSE-2

1. RME061 Refrigeration & Air-conditioning
2. RME062 Production Planning and Control
3. RME063 Mechanical Vibration
4. RME064 Reliability Engineering

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**U.P. TECHNICAL UNIVERSITY, LUCKNOW**  
**STUDY & EVALUATION SCHEME**

B. Tech. Mechanical Engineering / Production Engineering / Industrial & Production Engineering / Mechanical  
& Industrial Engineering  
[Effective from Session 20016-17]

YEAR IV, SEMESTER-VII

S. No.	Subject Code	Name of the Subject	Periods			Evaluation Scheme			Subject Total	Credit	
			L	T	P	Sessional Assessment					ESE
						CT	TA	Total			
<b>THEORY SUBJECT</b>											
1	NOE-071 to 074	Open Elective -I	3	1	0	30	20	50	100	150	4
2	NME-701	CAD	3	1	0	30	20	50	100	150	4
3	NME-702	Automobile Engineering	3	1	0	30	20	50	100	150	4
4	NME-031 to NME-034	Departmental Elective – III	3	1	0	30	20	50	100	150	4
5	NME-041 to NME-044	Departmental Elective – IV	3	1	0	30	20	50	100	150	4
<b>PRACTICAL/DESIGN/DRAWING</b>											
5	NME-751	CAD/CAM Lab	0	0	2	10	10	20	30	50	1
6	NME-752	I. C. Engine and Automobile Lab.	0	0	2	10	10	20	30	50	1
7	NME-753	INDUSTRIAL TRG.	0	0	2	-	50	50	-	50	1
8	NME-754	PROJECT	0	0	3	-	50	50	-	50	2
	GP-701	GP	-	-	-	-	-	50	-	50	-
		<b>TOTAL</b>	<b>15</b>	<b>5</b>	<b>9</b>					<b>1000</b>	<b>25</b>

Note- Practical Training-1 & 2 (4-weeks each) done after 4<sup>th</sup> & 6<sup>th</sup> Semesters would be evaluated in 7<sup>th</sup> semester through report and viva voce etc.

Project should be initiated in 7<sup>th</sup> semester beginning (End Semester Examination to be conducted for evaluation for 7<sup>th</sup> sem), and should be complete by the end of 8<sup>th</sup> semester with good Report and power-point Presentation etc.

**Open Electives – I**

- NOE-071 Entrepreneurship Development
- NOE-072 Quality Management
- NOE-073 Operations Research
- NOE-074 Introduction to Biotechnology

**Departmental Elective III**

- NME-031 Computer Aided Manufacturing
- NME-032 Project Management
- NME-033 Computational Fluid Dynamics
- NME-034 Composite materials

**Departmental Elective IV**

- NME-041 Total Quality Management
- NME-042 Thermal Turbo Machines
- NME-043 Mechanical System Design
- NME-044 Automation and Robotics

  
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**U.P. TECHNICAL UNIVERSITY, LUCKNOW**  
**STUDY & EVALUATION SCHEME**

**B. Tech. Production Engineering / Industrial & Production Engineering / Mechanical & Industrial Engineering**  
[Effective from Session 20016-17]

**YEAR IV, SEMESTER-VIII**

S. No.	Subject Code	Name of the Subject	Periods			Evaluation Scheme			Subject Total	Credit	
			L	T	P	Sessional Assessment		ESE			
						CT	TA				Total
<b>THEORY SUBJECT</b>											
1	NOE-081 to 084	Open Elective -II	3	1	0	30	20	50	100	150	4
2	NPI-801	Quality Control	3	1	0	30	20	50	100	150	4
3	NME-051 to NME-055	Departmental Elective -V	3	1	0	30	20	50	100	150	4
4	NME-061 to NME-065	Departmental Elective -VI	3	1	0	30	20	50	100	150	4
<b>PRACTICAL/DESIGN/DRAWING</b>											
5	NME-851	SEMINAR	0	0	3	-	50	50	-	50	2
6	NME-852	PROJECT	0	0	12	-	100	100	200	300	7
7	GP-801	GP	-	-	-	-	-	50	-	50	-
		<b>TOTAL</b>	<b>12</b>	<b>4</b>	<b>15</b>					<b>1000</b>	<b>25</b>

**Open Electives – II**

NOE-081 Non Conventional Energy Resources  
NOE-082 Nonlinear Dynamic Systems  
NOE-083 Product Development  
NOE-084 Automation and Robotics

**Departmental Elective V**

NME-051 Operations Research  
NME-052 Design of Thermal Systems  
NME-053 Advance Synthesis of machines  
NME-054 Industrial Automation  
NME-055 Advance Welding Technology

**Departmental Elective VI**

NME-061 Experimental Stress Analysis  
NME-062 Plant Layout and Material Handling  
NME-063 Additive Manufacturing  
NME-064 Computer Aided Process Planning  
NME-065 Non Destructive Testing

  
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**U.P. TECHNICAL UNIVERSITY, LUCKNOW**  
**STUDY & EVALUATION SCHEME**

B. Tech. Mechanical Engineering  
[Effective from Session 2016-17]

YEAR IV, SEMESTER-VIII

S. No.	Subject Code	Name of the Subject	Periods			Evaluation Scheme			Subject Total	Credit	
			L	T	P	Sessional Assessment					ESE
						CT	TA	Total			
<b>THEORY SUBJECT</b>											
1	NOE-081 to 084	Open Elective -II	3	1	0	30	20	50	100	150	4
2	NME-801	Power Plant Engineering	3	1	0	30	20	50	100	150	4
3	NME-051 to NME-055	Departmental Elective -V	3	1	0	30	20	50	100	150	4
4	NME-061 to NME-065	Departmental Elective -VI	3	1	0	30	20	50	100	150	4
<b>PRACTICAL/DESIGN/DRAWING</b>											
5	NME-851	SEMINAR	0	0	3	-	50	50	-	50	2
6	NME-852	PROJECT	0	0	12	-	100	100	200	300	7
7	GP-801	GP	-	-	-	-	-	50	-	50	-
		<b>TOTAL</b>	<b>12</b>	<b>4</b>	<b>15</b>					<b>1000</b>	<b>25</b>

**Open Electives – II**

NOE-081 Non Conventional Energy Resources  
NOE-082 Nonlinear Dynamic Systems  
NOE-083 Product Development  
NOE-084 Automation and Robotics

**Departmental Elective V**

NME-051 Operations Research  
NME-052 Design of Thermal Systems  
NME-053 Advance Synthesis of machines  
NME-054 Industrial Automation  
NME-055 Advance Welding Technology

**Departmental Elective VI**

NME-061 Experimental Stress Analysis  
NME-062 Plant Layout and Material Handling  
NME-063 Additive Manufacturing  
NME-064 Computer Aided Process Planning  
NME-065 Non Destructive Testing.

  
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**DR. A.P.J. ABDUL KALAM TECHNICAL UNIVERSITY  
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**Study & Evaluation Scheme with Syllabus  
for  
B.Tech. Second Year  
Civil Engineering  
On  
Choice Based Credit System  
(Effective from the Session: 2017-18)**

*Prabhat*  
Director  
IMS Engineering College  
Ghaziabad

**2<sup>nd</sup> Year III-SEMESTER**

S. No.	Subject Code	Subject Name	L-T-P	ESE Marks	Sessional		Total	Credit
					CT	TA		
1.	ROE030 to 039/ RAS301	Science Based Open Elective/ Mathematics-III	3-1-0	70	20	10	100	4
2.	RVE301/ RAS302	Universal Human Values & Professional Ethics/ Environment & Ecology	3-0-0	70	20	10	100	3
3.	RME303	Mechanics of Solids	3-0-0	70	20	10	100	3
4.	RCE301	Building Materials & Construction	3-1-0	70	20	10	100	4
5.	RCE302	Surveying	3-0-0	70	20	10	100	3
6.	RCE303	Fluid Mechanics	3-0-0	70	20	10	100	3
7.	RCE351	Building Materials Lab	0-0-2	50	30	20	100	1
8.	RCE352	Surveying Lab	0-0-2	50	30	20	100	1
9.	RCE353	Fluid Mechanics Lab	0-0-2	50	30	20	100	1
10.	RCE354	Computer Based Statistical & Numerical Techniques Lab	0-0-2	50	30	20	100	1
11.	RME101*	Elements of Mechanical Engineering*	3-1-0	70	20	10	100*	--
12.	RCE151*	Computer Aided Engineering Graphics*	0-0-3	50	30	20	100*	--
Total							1000	24

CT: Class Test

TA: Teacher Assessment

L/T/P: Lecture/ Tutorial/ Practical

**\*B.Tech. II<sup>nd</sup> year lateral entry students belonging to B.Sc. Stream, shall clear the subjects RCE151/RCE251 and RME101/201 of the first year Engineering Programme along with the second year subjects.**

**Science Based Open Electives:**

- a. ROE030/ROE040 Manufacturing Process
- b. ROE031/ROE041 Introduction to soft computing
- c. ROE032/ROE042 Nano Science
- d. ROE033/ROE043 Laser System and Application
- e. ROE034/ROE044 Space Science
- f. ROE035/ROE045 Polymer Science & Technology
- g. ROE036/ROE046 Nuclear Science
- h. ROE037/ROE047 Material Science
- i. ROE038/ROE048 Discrete Mathematics
- j. ROE039/ROE049 Applied Linear Algebra

  
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**2<sup>nd</sup> Year IV-SEMESTER**

S. No.	Subject Code	Subject Name	L-T-P	ESE Marks	Sessional		Total	Credit
					CT	TA		
1.	RAS401/ ROE040 to 049	Mathematics-III/ Science Based Open Elective	3-1-0	70	20	10	100	4
2.	RAS402/ RVE401	Environment & Ecology/ Universal Human Values & Professional Ethics	3-0-0	70	20	10	100	3
3.	RCS405	Data Structures	3-0-0	70	20	10	100	3
4.	RCE401	Hydraulics & Hydraulic Machines	3-0-0	70	20	10	100	3
5.	RCE402	Geoinformatics	3-0-0	70	20	10	100	3
6.	RCE403	Structural Analysis	3-1-0	70	20	10	100	4
7.	RCE452	Geoinformatics Lab	0-0-2	50	30	20	100	1
8.	RCE453	Structural Analysis Lab	0-0-2	50	30	20	100	1
9.	RCE454	Building Planning & Drawing Lab	0-0-2	50	30	20	100	1
10.	RCE455	Hydraulics & Machine Lab	0-0-2	50	30	20	100	1
11.	RME201*	Elements of Mechanical Engineering*	3-1-0	70	20	10	100*	--
12.	RCE251*	Computer Aided Engineering Graphics*	0-0-3	50	30	20	100*	--
Total							1000	24

CT: Class Test

TA: Teacher Assessment

L/T/P: Lecture/ Tutorial/ Practical

**\*B.Tech. II<sup>nd</sup> year lateral entry students belonging to B.Sc. Stream, shall clear the subjects RCE151/RCE251 and RME101/201 of the first year Engineering Programme along with the second year subjects.**

**Industrial Training:**

Students will go for Industrial Training of 8-10 weeks in total in two parts (Industrial Training-1 & Industrial Training-2) which is to be evaluated in VII semester after submission of separate training report for each part.

**Industrial Training-1:** Students will go to Industrial Training-1 of 4 weeks after IV semester which will be evaluated in VII semester.

**Science Based Open Electives:**

- a. ROE030/ROE040 Manufacturing Process
- b. ROE031/ROE041 Introduction to soft computing
- c. ROE032/ROE042 Nano Science
- d. ROE033/ROE043 Laser System and Application
- e. ROE034/ROE044 Space Science
- f. ROE035/ROE045 Polymer Science & Technology
- g. ROE036/ROE046 Nuclear Science
- h. ROE037/ROE047 Material Science
- i. ROE038/ROE048 Discrete Mathematics
- j. ROE039/ROE049 Applied Linear Algebra

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



**EVALUATION SCHEME & SYLLABUS**

**FOR**

**B. TECH. THIRD YEAR**

**(CIVIL ENGINEERING)**

**On**

**Choice Based Credit System**

**[Effective from session 2018-19]**

*P. S. Chandra*  
Director  
IMS Engineering College  
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## FIFTH SEMESTER

Sl No.	Subject Code	Subject Name	Teaching Deptt.	L-T-P	Th/Lab Marks	Sessional		Total	Credit
					ESE	CT	TA.		
1	RAS501	MANEGIRIAL ECONOMICS	Applied Science	3—0---0	70	20	10	100	3
2	RAS-502/ RUC501	SOCIOLOGY /CYBER SECURITY	Applied Science	3—0---0	70	20	10	100	3
3	RCE501	GEOTECHNICAL ENGINEERING	Core Deptt.	3—0---0	70	20	10	100	3
4	RCE502	DESIGN OF STRUCTURE-I	Core Deptt.	3—1---0	70	20	10	100	4
5	RCE503	QUANTITY ESTIMATION AND MANAGEMENT	Core Deptt.	3—0---0	70	20	10	100	3
6	RCE051 RCE052 RCE053	<b>ELECTIVE -1</b> MODERN CONSTRUCTION MATERIALS CONCRETE TECHNOLOGY GEOENVIRONMENTAL	Core Deptt.	3—1--0	70	20	10	100	4

## CIVIL ENGINEERING

  
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ENGINEERING									
7	RCE551	GEOTECHNICAL ENGINEERING LAB	Core Deptt.	0—0---2	50		50	100	1
8	RCE552	CAD LAB-1	Core Deptt.	0—0---2	50		50	100	1
9	RCE553	CONSTRUCTION MANAGEMENT LAB	Core Deptt.	0—0---2	50		50	100	1
10	RCE554	CONCRETE LAB	Core Deptt.	0—0---2	50		50	100	1
<b>TOTAL</b>					620	120	260	1000	24

SESSION 2018-19

  
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**Syllabus**

**4<sup>th</sup> Year**

**[Effective from session 2016-17]**

**B. Tech. Civil Engineering**

*P. Prasad*  
Director  
IMS Engineering College  
Ghaziabad

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**Study & Evaluation Scheme**

B Tech Civil Engineering

Effective from session 2016-17

Final Year, VII Semester

S No	Course Code	SUBJECT	PERIODS			Evaluation Scheme				Subject Total	Credit
			L	T	P	Sessional Exam			ESE		
						CT	TA	Total			
THEORY SUBJECT											
1	NOE071- NOE074	Open Elective – I	3	1	0	30	20	50	100	150	4
2	NCE031- NCE035	Department Elective-III	3	1	0	30	20	50	100	150	4
3	NCE041- NCE044	Department Elective-IV	3	1	0	30	20	50	100	150	4
4	NCE701	Design of Steel Structures	3	1	0	30	20	50	100	150	4
5	NCE702	Water Resources Engg	3	1	0	30	20	50	100	150	4
PRACTICAL / DESIGN / DRAWING											
6	NCE751	Seminar	0	0	4		-	50	-	50	1
7	NCE752	Industrial Training**					-	50	-	50	1
8	NCE753	Project#	0	0	4		-	100	-	100	3
9	NGP 701	General Proficiency	-	-	-	-	-	50	-	50	1
		Total	15	5	8					1000	26

\*\* 4 weeks Industrial Training after VI semester to be evaluated in VII semester.

# Project should be initiated in VII semester beginning and should be completed by the end of VIII semester.

Departmental Elective-3 (Full Unit Course with Credit: 4)

S. No.	Code and Course
2 (A)	NCE 031 - Bridge Engineering
2 (B)	NCE 032 - Finite Element Methods
2(C)	NCE 033 - Environmental Geo-technology
2(D)	NCE 034 - Industrial Pollution Control & Env. Audit
2 (E)	NCE 035 – Engineering Hydrology

Departmental Elective-4 (Full Unit Course with Credit: 4)

S. No.	Code and Course
3 (A)	NCE 041 - Precast and Modular Construction Practices
3 (B)	NCE 042 - Plastic Analysis of Structures
3 (C)	NCE 043 - Open Channel Flow
3 (D)	NCE 044 – Tunnel Engineering

  
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Study & Evaluation Scheme

B Tech Civil Engineering

Effective from session 2016-17

Final Year, VIII Semester

S No	Course Code	SUBJECT	PERIODS			Evaluation Scheme			Subject Total	Credit	
			L	T	P	Sessional Exam					ESE
						CT	TA	Total			
THEORY SUBJECT											
1	NOE081- NOE084	Open Elective - II	3	1	0	30	20	50	100	150	4
2	NCE051- NCE054	Departmental Elective-V	3	1	0	30	20	50	100	150	4
3	NCE061- NCE064	Departmental Elective-VI	3	1	0	30	20	50	100	150	4
4	NCE801	Transportation Engineering -II	3	1	0	30	20	50	100	150	3
PRACTICAL / DESIGN / DRAWING											
5	NCE851	Project	0	0	12		100	100	250	350	8
6	NGP 801	General Proficiency	-	-	-	-	-	50	-	50	1
		Total	12	4	12					1000	24

Departmental Elective-5 (Full Unit Course with Credit: 4)

S. No.	Code and Course
2 (A)	NCE 051 - Computer Aided Design
2 (B)	NCE 052 - Analysis and Design of Hydraulic Structures
2 (C)	NCE 053 - Water Resources Systems
2 (D)	NCE 054 - Machine Foundation Design

Departmental Elective-6 (Full Unit Course with Credit: 4)

S. No.	Code and Course
3 (A)	NCE061 - Ground Improvement Techniques
3 (B)	NCE 062 - River Engineering
3 (C)	NCE 063 - Groundwater Management
3 (D)	NCE 064 - Earthquake Resistant Design of Structures

  
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## List of Open Electives for B. Tech. Courses

### OPEN ELECTIVE-I

NOE -071

NOE-072

NOE-073

NOE-074

Entrepreneurship Development

Quality Management

Operations Research

Introduction to Biotechnology

### OPEN ELECTIVE-II

NOE-081

NOE-082

NOE-083

NOE-084

Non Conventional Energy Resources

Nonlinear Dynamic Systems

Product Development

Automation & Robotics

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**Study & Evaluation Scheme with Syllabus  
for  
B.Tech. Second Year  
Biotechnology  
On  
Choice Based Credit System  
(Effective from the Session: 2017-18)**

*P. S. Chandra*  
Director  
IMS Engineering College  
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**2<sup>nd</sup> Year III-SEMESTER**

S. No.	Subject Code	Subject Name	L-T-P	ESE Marks	Sessional		Total	Credit
					CT	TA		
1.	ROE030 to 039/ RAS303	Science Based Open Elective/ Elementary Mathematics-III	3-1-0	70	20	10	100	4
2.	RVE301/ RAS302	Universal Human Values & Professional Ethics/ Environment & Ecology	3-0-0	70	20	10	100	3
3.	RCE309	Fluid Mechanics for Biotechnology	3-0-0	70	20	10	100	3
4.	RBT301	Analytical Techniques in Biotechnology	3-0-0	70	20	10	100	3
5.	RBT302	Microbiology	3-0-0	70	20	10	100	3
6.	RBT303	Biochemistry	3-1-0	70	20	10	100	4
7.	RCE359	Fluid Mechanics for Biotechnology Lab	0-0-2	50	30	20	100	1
8.	RBT351	Analytical Techniques in Biotechnology Lab	0-0-2	50	30	20	100	1
9.	RBT352	Microbiology Lab	0-0-2	50	30	20	100	1
10.	RBT353	Biochemistry Lab	0-0-2	50	30	20	100	1
11.	RME101*	Elements of Mechanical Engineering*	3-1-0	70	20	10	100*	--
12.	RCE151*	Computer Aided Engineering Graphics*	0-0-3	50	30	20	100*	--
Total							1000	24

CT: Class Test

TA: Teacher Assessment

L/T/P: Lecture/ Tutorial/ Practical

**\*B.Tech. II<sup>nd</sup> year lateral entry students belonging to B.Sc. Stream, shall clear the subjects RCE151/RCE251 and RME101/201 of the first year Engineering Programme along with the second year subjects.**

**Science Based Open Electives:**

- ROE030/ROE040 Manufacturing Process
- ROE031/ROE041 Introduction to soft computing
- ROE032/ROE042 Nano Science
- ROE033/ROE043 Laser System and Application
- ROE034/ROE044 Space Science
- ROE035/ROE045 Polymer Science & Technology
- ROE036/ROE046 Nuclear Science
- ROE037/ROE047 Material Science
- ROE038/ROE048 Discrete Mathematics
- ROE039/ROE049 Applied Linear Algebra

  
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**2<sup>nd</sup> Year IV-SEMESTER**

S. No.	Subject Code	Subject Name	L-T-P	ESE Marks	Sessional		Total	Credit
					CT	TA		
1.	RAS403/ ROE040 to 049	Elementary Mathematics-III/ Science Based Open Elective	3-1-0	70	20	10	100	4
2.	RAS402/ RVE401	Environment & Ecology/ Universal Human Values & Professional Ethics	3-0-0	70	20	10	100	3
3.	RCH406	Heat & Mass Transfer	3-0-0	70	20	10	100	3
4.	RBT401	Genetics & Molecular Biology	3-0-0	70	20	10	100	3
5.	RBT402	Immunology	3-0-0	70	20	10	100	3
6.	RBT403	Enzyme Engineering	3-1-0	70	20	10	100	4
7.	RCH454	Heat & Mass Transfer Lab	0-0-2	50	30	20	100	1
8.	RBT451	Genetics & Molecular Biology Lab	0-0-2	50	30	20	100	1
9.	RBT452	Immunology Lab	0-0-2	50	30	20	100	1
10.	RBT453	Enzyme Engineering Lab	0-0-2	50	30	20	100	1
11.	RME201*	Elements of Mechanical Engineering*	3-1-0	70	20	10	100*	--
12.	RCE251*	Computer Aided Engineering Graphics*	0-0-3	50	30	20	100*	--
Total							1000	24

CT: Class Test

TA: Teacher Assessment

L/T/P: Lecture/ Tutorial/ Practical

**\*B.Tech. II<sup>nd</sup> year lateral entry students belonging to B.Sc. Stream, shall clear the subjects RCE151/RCE251 and RME101/201 of the first year Engineering Programme along with the second year subjects.**

**Science Based Open Electives:**

- ROE030/ROE040 Manufacturing Process
- ROE031/ROE041 Introduction to soft computing
- ROE032/ROE042 Nano Science
- ROE033/ROE043 Laser System and Application
- ROE034/ROE044 Space Science
- ROE035/ROE045 Polymer Science & Technology
- ROE036/ROE046 Nuclear Science
- ROE037/ROE047 Material Science
- ROE038/ROE048 Discrete Mathematics
- ROE039/ROE049 Applied Linear Algebra

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**Evaluation Scheme & Syllabus  
For**

**B.Tech. Third Year  
(Biotechnology)**

**On  
Choice Based Credit System  
(Effective from the Session: 2018-19)**

*Prashant*  
Director  
IMS Engineering College  
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**Study and Evaluation Scheme  
B.TECH. BIO-TECHNOLOGY  
(Effective from the session: 2018-19)**

3<sup>rd</sup> Year, 5<sup>th</sup> Semester

S. No.	Subject Code	Subject Name	Teaching Deptt.	L-T-P	Th/Lab Marks	Sessional		Total	Credit
						Test	Assig/Att.		
1	RAS501	Managerial Economics	Applied Science	3-0-0	70	20	10	100	3
2	RAS502/ RUC501	Sociology/ Cyber Security	Applied Science	3-0-0	70	20	10	100	3
3	RBT-501	Genetic Engineering	Core Department	3-0-0	70	20	10	100	3
4	RBT-502	Fermentation Biotechnology	Core Department	3-1-0	70	20	10	100	4
5	RBT-503	Bioinformatics-I	Core Department	3-0-0	70	20	10	100	3
6	RBT-051-054	Departmental Elective-I	Core Department	3-1-0	70	20	10	100	4
7	RBT-551	Genetic Engineering Lab	Core Department	0-0-2	50		50	100	1
8	RBT-552	Fermentation Biotechnology Lab	Core Department	0-0-2	50		50	100	1
9	RBT-553	Bioinformatics-I Lab	Core Department	0-0-2	50		50	100	1
10	RBT-554	Nano Biotechnology Lab	Core Department	0-0-2	50		50	100	1
	<b>Total</b>							<b>1000</b>	<b>24</b>

**Departmental Elective-I**

RBT051: Pharmaceutical Biotechnology

RBT052: Nano Biotechnology

RBT053: Biomedical Instrumentation

RBT054: Metabolic Engineering

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## RBT-501: Genetic Engineering

L	T	P
3	1	0

### Unit I

(10)

Gene cloning- concept and basic steps; Restriction modification enzymes used in recombinant DNA technology, endonucleases, ligases and other enzymes useful in gene cloning; Vectors: plasmid, bacteriophage and other viral vectors, cosmids, artificial chromosomes, yeast artificial chromosome, Bacterial Artificial Chromosome, Ti plasmid, shuttle vectors, expression vectors; DNA delivery methods; Construction of genomic and cDNA libraries; Techniques for selection, screening and characterization of transformants (hybridization based techniques, expression & interaction based techniques).

### Unit II

(8)

Concept of PCR; DNA polymerases; primer designing, linkers, adapters, setting up PCR reactions; Various types of PCR; Applications of PCR in disease diagnostics, forensic sciences and genetic engineering.

### Unit III

(6)

Gene expression in prokaryotes & eukaryotes, Tissue specific promoter, wound inducible promoters, Strong and regulatable promoters, promoter analysis (EMSA and DNA footprinting), gene expression profiling (real time PCR, SAGE, differential display, Microarray); DNA sequencing methods; Molecular markers: RAPD, RFLP, AFLP, SNP; Site directed mutagenesis, gene silencing techniques.

### Unit IV

(6)

Applications of genetic engineering; Creation of recombinant microorganisms, transgenic plants and animals; cloning of sheep (Dolly) & other mammals; applications in conservation; therapeutic vs. reproductive cloning; ethical issues and the prospects for human cloning; Gene therapy; DNA drugs and vaccines.

### Unit V

(10)

Basic concepts of cell signaling, Extracellular signal molecule and their receptors, Operation of Signaling molecules over various distances, Cellular response to specific combinations of extracellular signal molecules; Nuclear receptor; Ion channel linked, G-protein mediated receptors, Relay of signal by activated cell surface receptors via intracellular signaling proteins, Intracellular Signaling proteins as molecular switches.

### Text books and references

1. T.A Brown (2006). Gene cloning and DNA analysis, WILEY-BLACKWELL
2. Genetic Engineering by Dr Smita Rastogi & Dr Neelak Pathak, Oxford University Press
3. S.B Primrose (2001). Molecular biotechnology. Panima Publishing corporation, 2<sup>nd</sup> edition
4. Molecular Cloning, A laboratory Manual. Sambrook, J., Fritsch, E.F., Mariatis.3rd edition
5. Genetic Engineering, Principles & Practice by Sandhya Mitra, McGraw Hill Education.



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**Syllabus for**

**B.Tech. Biotechnology  
of  
Fourth Year**

**(Effective from the Session: 2016-17)**

*Prabodh*  
Director  
DMS Engineering College  
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# DR. A.P.J. ABDUL KALAM TECHNICAL UNIVERSITY

## LUCKNOW

### Study and Evaluation Scheme B.TECH. BIO-TECHNOLOGY (Effective from the session: 2016-17)

4<sup>th</sup> Year, Semester-VII

S. No.	Subject Code	Name of Subject	Periods			Evaluation Scheme			Subject Total	Credit	
			L	T	P	Sessional Assessment		ESE			
						CT	TA				Total
<b>THEORY SUBJECT</b>											
1		Open Elective-I	3	1	0	30	20	50	100	150	4
2	NBT701	Bioseperation & DSP	3	1	0	30	20	50	100	150	4
3	NBT702	Bioethics, Biosafety & IPR	3	1	0	30	20	50	100	150	4
4	NBT031 to 033	Departmental Elective-III	3	1	0	30	20	50	100	150	4
5	NBT041 to 043	Departmental Elective-IV	2	1	0	15	10	25	50	75	2
<b>PRACTICAL/DESIGN/DRAWING</b>											
6	NBT751	Bioseperation & DSP Lab	0	0	2	10	10	20	30	50	1
7	NBT752	Industrial Training	0	0	3		75	75		75	2
8	NBT753	Project	0	0	8		50	50	100	150	4
9	NGP701	GP						50		50	
		<b>TOTAL</b>	<b>14</b>	<b>4</b>	<b>13</b>					<b>1000</b>	<b>25</b>

L: Lecture T: Tutorial P: Practical/Project CT: Class Test TA: Teacher's Assessment, ESE: End Semester Examination

TA = 10 (5 for teachers assessment plus 5 for attendance)

TA = 20 (10 for teachers assessment plus 10 for attendance)

ESE (Practical) = 30 (10 marks for practical exam. 10 marks viva. 4 marks for lab records and 6 marks for quiz)

  
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## Study and Evaluation Scheme B.TECH. BIO-TECHNOLOGY (Effective from the session: 2016-17)

4<sup>th</sup> Year, Semester-VIII

S. No.	Subject Code	Name of Subject	Periods			Evaluation Scheme			Subject Total	Credit	
			L	T	P	Sessional Assessment					
						CT	TA	Total			
<b>THEORY SUBJECT</b>											
1		Open Elective-II	3	1	0	30	20	50	100	150	4
2	NBT801	Animal Biotechnology	3	1	0	30	20	50	100	150	4
3	NBT051 to 053	Departmental Elective-V	3	1	0	30	20	50	100	150	4
4	NBT061 to 063	Departmental Elective-VI	3	1	0	30	20	50	100	150	4
<b>PRACTICAL/DESIGN/DRAWING</b>											
5	NBT851	Seminar	0	0	3		100	100		100	2
6	NBT852	Project			12		100	100	150	250	7
7	NGP801	GP						50		50	
		<b>TOTAL</b>	<b>12</b>	<b>4</b>	<b>15</b>					<b>1000</b>	<b>25</b>

L: Lecture T: Tutorial P: Practical/Project CT: Class Test TA: Teacher's Assessment, ESE: End Semester Examination

TA = 10 (5 for teachers assessment plus 5 for attendance)

TA = 20 (10 for teachers assessment plus 10 for attendance)

ESE (Practical) = 30 (10 marks for practical exam. 10 marks viva. 4 marks for lab records and 6 marks for quiz)

\* Human Values & Professional Ethics will be offered as compulsory Audit Course for which passing marks are 40% in theory & 50% in aggregate. Student will be required to audit it within the period of their study. There will not be carry over facility for this course and a failed student will be required to repeat this course.

  
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## DEPARTMENTAL ELECTIVES

### **Elective-III:**

NBT031: Food Biotechnology

NBT032: Structural Biology

NBT033: Waste Treatment & Management

### **Elective-IV:**

NBT041: Agriculture Biotechnology

NBT042: Applications of Natural Products

NBT043: Forensic Diagnosis

### **Elective-V:**

NBT051: Fundamentals of Steam Cell Technology

NBT052: Biomedical Instrumentation

NBT053: Industrial Biotechnology

### **Elective-VI:**

NBT061: Entrepreneurship in Biotechnology

NBT062: Biomaterials

NBT063: Metabolic Engineering

2018-19

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UNIVERSITY, LUCKNOW**



**Evaluation Scheme & Syllabus for  
MBA  
AS PER  
AICTE MODEL CURRICULUM**

**(Effective from the Session: 2018-19)**

  
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**MBA 1st Year Course Structure in accordance with AICTE Model Curriculum  
Effective w.e.f. Academic Session 2018  
SEMESTER - I**

S. No	CODE	SUBJECT	PERIODS			EVALUATION SCHEME				END SEMESTER		TOTAL	CREDIT
			L	T	P	CT	TA	TOTAL	PS	TE	PE		
1	KMB 101	MANAGEMENT CONCEPT & INDIAN ETHOS	4	0	0	30	20	50	0	100	0	150	3
2	KMB102	MANAGERIAL ECONOMICS	4	0	0	30	20	50	0	100	0	150	3
3	KMB103	FINANCIAL ACCOUNTING FOR MANAGERS	4	0	0	30	20	50	0	100	0	150	3
4	KMB104	BUSINESS STATISTICS AND ANALYSIS	4	0	0	30	20	50	0	100	0	150	3
5	KMB105	ORGANISATIONAL BEHAVIOUR	4	0	0	30	20	50	0	100	0	150	3
6	KMB106	MARKETING MANAGEMENT - I	4	0	0	30	20	50	0	100	0	150	3
7	KMB107	BUSINESS COMMUNICATION	4	0	0	30	20	50	0	100	0	150	3
8	KMB108	COMPUTER APPLICATION IN MANAGEMENT	3	0	1	30	20	50	0	100	0	150	3
9	NON CREDIT	DEVELOPING SOFT SKILLS & PERSONALITY	2	0	0							0	0
		<b>TOTAL</b>										<b>1200</b>	<b>24</b>

**SEMESTER - II**

S. No	CODE	SUBJECT	PERIODS			EVALUATION SCHEME				END SEMESTER		TOTAL	CREDIT
			L	T	P	CT	TA	TOTAL	PS	TE	PE		
1	KMB 201	BUSINESS ENVIRONMENT	4	0	0	30	20	50	0	100	0	150	3
2	KMB202	HUMAN RESOURCE MANAGEMENT	4	0	0	30	20	50	0	100	0	150	3
3	KMB203	BUSINESS RESEARCH METHODS	4	0	0	30	20	50	0	100	0	150	3
4	KMB204	FINANCIAL MANAGEMENT & CORPORATE FINANCE	4	0	0	30	20	50	0	100	0	150	3
5	KMB205	OPERATIONS MANAGEMENT	4	0	0	30	20	50	0	100	0	150	3
6	KMB206	QUANTITATIVE TECHNIQUES FOR MANAGERS	4	0	0	30	20	50	0	100	0	150	3
7	KMB207	LEGAL ASPECTS OF BUSINESS	4	0	0	30	20	50	0	100	0	150	3
8	KMB208	MARKETING MANAGEMENT – II	4	0	0	30	20	50	0	100	0	150	3
9	KMB209	COMPREHENSIVE VIVA	0	0	0					100	0	100	3
10	NON CREDIT	DEVELOPING SOFT SKILLS & PERSONALITY	2	0	0							0	0
		<b>TOTAL</b>										<b>1300</b>	<b>27</b>

*Prashant*

Director  
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# Evaluation Scheme & Syllabus for

## MBA Second Year

On

### Choice Based Credit System

(Effective from the Session: 2017-18)



**DR. A.P.J. ABDUL KALAM TECHNICAL UNIVERSITY  
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*P. Sachin*  
Director  
IMS Engineering College  
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**MBA Evaluation Scheme for Session 2017 - 2018**  
**Semester III**

S. No.	Subject Code	Subject Title	Periods			Evaluation Scheme					Credit
			L	T	P	Sessional			ESE	Total	
						CT	TA	Total			
1	RMB301	Strategic Management	3	0	0	20	10	30	70	100	3
2	RMB302	International Business Management	3	0	0	20	10	30	70	100	3
3		Major Specialization Group Elective 1	3	0	0	20	10	30	70	100	3
4		Major Specialization Group Elective 2	3	0	0	20	10	30	70	100	3
5		Major Specialization Group Elective 3	3	0	0	20	10	30	70	100	3
6		Minor Specialization Group Elective 1	3	0	0	20	10	30	70	100	3
7		Minor Specialization Group Elective 2	3	0	0	20	10	30	70	100	3
8	RVE301	Universal Human Values and Professional Ethics	3	0	0	20	10	30	70	100	3
9	RMB351	Summer Training Project Report & Viva Voce	0	0	6		30	30	70	100	3
<b>TOTAL</b>										<b>900</b>	<b>27</b>

ESE- End Semester Examination  
CA - Class Test  
TA - Teacher Assessment

*Prabhat*  
Director  
IMS Engineering College  
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### Electives for MBA III Semester (2017-18)

For major specialization, student will select all three (03) elective subjects from that group and for minor specialization, student will select any two (02) elective subjects from that group.

#### Specialization Group: Human Resource

S. No.	Subject Code	Subject Title
1	RMBHR01	Talent Management
2	RMBHR02	Performance and Reward Management
3	RMBHR03	Industrial Relations and Labour Laws

#### Specialization Group: Marketing

S. No.	Subject Code	Subject Title
1	RMBMK01	Sales & Distribution Management
2	RMBMK02	Consumer Behaviour
3	RMBMK03	Digital Marketing

#### Specialization Group: Finance

S. No.	Subject Code	Subject Title
1	RMBFM01	Security Analysis & Portfolio Management
2	RMBFM02	Tax Planning & Management
3	RMBFM03	Financial Market & Commercial Banking

#### Specialization Group: International Business


S. No.	Subject Code	Subject Title
1	RMBIB01	International Marketing
2	RMBIB02	International Logistics
3	RMBIB03	Export Import Documentation

#### Specialization Group: Information Technology

S. No.	Subject Code	Subject Title
1	RMBIT01	Enterprise Resource Planning
2	RMBIT02	Web Technology & E- Commerce
3	RMBIT03	Cloud Computing for Business

#### Specialization Group: Operations

S. No.	Subject Code	Subject Title
1	RMBOP01	Supply Chain Management
2	RMBOP02	Materials Management
3	RMBOP03	Production Planning & Control

  
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**Semester IV**

S. No.	Subject Code	Course Title	Periods			Evaluation Scheme					Credit
						Sessional			ESE	Total	
			L	T	P	CT	TA	Total			
1	RMB401	Corporate Governance : Values and Ethics	4	0	0	20	10	30	70	100	4
2	RMB402	Entrepreneurship Development	4	0	0	20	10	30	70	100	4
3		Major Specialization Group Elective 4	3	0	0	20	10	30	70	100	3
4		Major Specialization Group Elective 5	3	0	0	20	10	30	70	100	3
5		Minor Specialization Group Elective 3	3	0	0	20	10	30	70	100	3
6	RCA405	Cyber Security	3	0	0	20	10	30	70	100	3
7	RMB 451	Research Project Report and Viva Voce	0	0	12		60	60	140	200	7
<b>TOTAL</b>										<b>800</b>	<b>27</b>

ESE- End Semester Examination

CA - Class Test

TA - Teacher Assessment

  
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### Electives for MBA IV Semester (2017-18)

For major specialization, student will select all two (02) elective subjects from that group and for minor specialization, student will select any one (01) elective subjects from that group.

#### Specialization Group: Human Resource

S. No.	Subject Code	Subject Title
1	RMBHR04	Training & Development
2	RMBHR05	Negotiation & Conflict Management

#### Specialization Group: Marketing

S. No.	Subject Code	Subject Title
1	RMBMK04	Marketing of Services
2	RMBMK05	Integrated Marketing Communication

#### Specialization Group: Finance

S. No.	Subject Code	Subject Title
1	RMBFM04	Working Capital Management
2	RMBFM05	Financial Derivatives

#### Specialization Group: International Business

S. No.	Subject Code	Subject Title
1	RMBIB04	Trading Blocks & Foreign Trade Frame Work
2	RMBIB05	Cross Cultural Management

#### Specialization Group: Information Technology

S. No.	Subject Code	Subject Title
1	RMBIT04	Database Management System
2	RMBIT05	System Analysis & Design

#### Specialization Group: Operations

S. No.	Subject Code	Subject Title
1	RMBOP04	World Class Manufacturing & Maintenance Management
2	RMBOP05	Contract and Project Management

  
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**Syllabus**

**For**

**M.Tech. (Biotechnology)**

(Effective from the Session: 2016-17)

2017-18

2018-19

2019-20

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**Study and Evaluation Scheme  
M.TECH. BIO-TECHNOLOGY  
(Effective from the session: 2016-17)**

1<sup>st</sup> Year, 1<sup>st</sup> Semester

S No.	Subject Code	Name of the Subject	Periods			Credit	Theory			Practical		Subject Total
			L	T	P		CT	TA	ESE	TA	ESE	
1	MTBT101	Applied Biochemistry & Molecular Biology	3	0	0	3	20	10	70	--	--	100
2	MTBT102	Bioprocess Engineering & Technology	3	0	0	3	20	10	70	--	--	100
3	MTBT01?	Departmental Elective - I	3	0	0	3	20	10	70	--	--	100
4	MTBT02?	Departmental Elective - II	3	0	0	3	20	10	70	--	--	100
5		Research Process & Methodology	3	0	0	3	20	10	70	--	--	100
6	MTBT151	Applied Biochemistry & Molecular Biology Lab	--	--	3	2	--	--	--	20	30	50
7	MTBT152	Bioprocess Engineering & Technology Lab	--	--	2	1	--	--	--	20	30	50
		<b>Total</b>				<b>18</b>						<b>600</b>

**L: Lecture T: Tutorial P: Practical/Project CT: Class Test TA: Teacher's Assessment, ESE: End Semester Examination**

**Departmental Elective-I**

1. MTBT011: Immunology & Vaccine Technology
2. MTBT012: Quality Control in Biotechnology
3. MTBT013: Applied Clinical Research

**Departmental Elective-II**

1. MTBT021: Biological Treatment of Waste Water
2. MTBT022: Nano Biotechnology & Toxicology
3. MTBT023: Industrial Biotechnological Products

  
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**Study and Evaluation Scheme  
M.TECH. BIO-TECHNOLOGY  
(Effective from the session: 2016-17)**

1<sup>st</sup> Year, II<sup>nd</sup> Semester

S No.	Subject Code	Name of the Subject	Periods			Credit	Theory			Practical		Subject Total
			L	T	P		CT	TA	ESE	TA	ESE	
1	MTBT201	Bioinformatics	3	0	0	3	20	10	70	--	--	100
2	MTBT202	Entrepreneurship, IPR & Biosafety	3	0	0	3	20	10	70	--	--	100
3	MTBT03?	Departmental Elective - III	3	0	0	3	20	10	70	--	--	100
4	MTBT04?	Departmental Elective - IV	3	0	0	3	20	10	70	--	--	100
5	MTBT05?	Departmental Elective - V	3	0	0	3	20	10	70	--	--	100
6	MTBT251	Bioinformatics Lab	--	--	3	2	--	--	--	20	30	50
7	MTBT252	Seminar-I	--	--	2	1	--	--	--	50	--	50
		<b>Total</b>				<b>18</b>						<b>600</b>

**L: Lecture T: Tutorial P: Practical/Project CT: Class Test TA: Teacher's Assessment, ESE: End Semester Examination**

**Departmental Elective-III**

1. MTBT031: Genetic Engineering
2. MTBT032: Applied Food Biotechnology
3. MTBT033: Molecular Modelling & Industrial Application

**Departmental Elective-IV**

1. MTBT041: Bioreactor Analysis & Design
2. MTBT041: Enzyme Technology & Industrial Application
3. MTBT043: Applied Bioenergy

**Departmental Elective-V**

1. MTBT051: Tissue Culture Techniques
2. MTBT052: Diagnostic Techniques in Biotechnology
3. MTBT053: Fundamentals of Stem Cell Technology

  
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**Study and Evaluation Scheme  
M.TECH. BIO-TECHNOLOGY  
(Effective from the session: 2017-18)**

2<sup>nd</sup> Year, III<sup>rd</sup> Semester

S No.	Subject Code	Name of the Subject	Periods			Credit	Theory			Practical		Subject Total
			L	T	P		CT	TA	ESE	TA	ESE	
1	MTBT351	Seminar-II	0	0	6	3	--	--	--	100	--	100
2	MTBT352	Dissertation	0	0	30	15	--	--	--	200	300	500
		<b>Total</b>				<b>18</b>						<b>600</b>

2<sup>nd</sup> Year, IV<sup>th</sup> Semester

S No.	Subject Code	Name of the Subject	Periods			Credit	Theory			Practical		Subject Total
			L	T	P		CT	TA	ESE	TA	ESE	
1	MTBT451	Dissertation (Final)	0	0	3	3	--	--	--	200	400	600
		<b>Total</b>				<b>18</b>						<b>600</b>

L: Lecture T: Tutorial P: Practical/Project CT: Class Test TA: Teacher's Assessment, ESE: End Semester Examination

  
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**DR. A.P.J. ABDUL KALAM TECHNICAL UNIVERSITY,  
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**Syllabus**

**For**

**M.Tech. (Computer Science & Engineering)**

**(Effective from the Session: 2016-17)**

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

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

**SEMESTER –II**

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

  
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## SEMESTER –III

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

## SEMESTER –IV

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

### Departmental Elective I

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

### Departmental Elective II

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

### Departmental Elective III-

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

  
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#### Departmental Elective IV

1. MTCS041: Distributed Databases
2. MTCS042: Software Project Planning & Management
3. MTCS043: Network Management
4. MTCS044: Robotics
5. MTCS045: Data Centre Management
6. MTCS046: Digital Forensics

#### Departmental Elective V

1. MTCS051: Optimization Techniques
2. MTCS052: Digital Image Processing
3. MTCS053: Professional Aspects in Software Engineering
4. MTCS054: Storage Area Network
5. MTCS055: Optical Networks
6. MTCS056: Advanced Data Modeling

  
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**DR. A.P.J. ABDUL KALAM TECHNICAL UNIVERSITY,  
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**Syllabus**

**For**

**M.Tech. (Mechanical Engineering)**

**(Effective from the Session: 2016-17)**

1

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

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

**Semester -I**

S. No.	Subject Code	Name of the Subject	Periods			Credit	Evaluation Scheme					Subject Total
			L	T	P		Theory			Practical		
							CT	TA	ESE	TA	ESE	
1	MTME 101	Simulation, Modelling & Analysis	3	0	0	3	20	10	70	--	--	100
2	MTME 102	Operations Research	3	0	0	3	20	10	70	--	--	100
3	MTME 01?	Departmental Elective-I	3	0	0	3	20	10	70	--	--	100
4		Departmental Elective-II	3	0	0	3	20	10	70	--	--	100
5		Research Process & Methodology	3	0	0	3	20	10	70	--	--	100
6	MTME 151	Simulation Modeling & Analysis Lab	-	-	3	2	--	--	--	20	30	50
7	MTME 152	Operations Research Lab	-	-	2	1	--	--	--	20	30	50
		<b>Total</b>				<b>18</b>						<b>600</b>

<b>Departmental Elective-I</b>	MTME 011	CAD/CAM
	MTME 012	Advanced Heat & Mass Transfer
	MTME 013	Renewable Energy System
	MTME 014	Reliability, Maintenance Management & Safety

<b>Departmental Elective-II</b>	MTTE 021	Turbo Machines
	MTME 021	Advanced Mechanical Vibrations
	MTTE 023	Advanced I.C. Engines
	MTME 022	Fracture Mechanics

### Semester –II

S. No.	Subject Code	Name of the Subject	Periods			Credit	Evaluation Scheme					Subject Total
			L	T	P		Theory			Practical		
							CT	TA	ESE	TA	ESE	
	MTME 201	Computer Integrated Manufacturing (CIM)	3	0	0	3	20	10	70	--	--	100
1	MTME 202	Advanced Mechanics Of Solids	3	0	0	3	20	10	70	--	--	100
3		Departmental Elective-III	3	0	0	3	20	10	70	--	--	100
4	MTME 04?	Departmental Elective-IV	3	0	0	3	20	10	70	--	--	100
5	MTME 05?	Elective -V	3	0	0	3	20	10	70	--	--	100
6	MTME 251	Computer Integrated Manufacturing (CIM) Lab	-	-	3	2	--	--	--	20	30	50
7	MTME 252	Seminar-I	-	-	-	1	--	--	--	50	--	50
		<b>Total</b>				18						<b>600</b>

<b>Departmental Elective – III</b>	MTME 031	Advanced Finite Element Analysis
	MTME 032	Industrial Automation And Robotics
	MTME 033	Advanced Welding Technology
	MTTE 202	Computational Fluid Dynamics

<b>Departmental Elective – IV</b>	MTME 041	Optimization Techniques & Design Of Experiments
	MTME 042	Total Quality Management
	MTME 043	Advanced Mechanical Design
	MTME 044	Management Information System

<b>Elective – V</b>	MTME 051	Flexible Manufacturing System
	MTME 052	Machine Vision
	MTME 053	Additive Manufacturing And Tooling
	MTME 054	Modern Manufacturing Process

### Semester – III

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

### Semester – IV

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

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**Syllabus**

**For**

**M.Tech.**

**VLSI DESIGN**

**(VLSI & EMBEDDED SYSTEM,  
ELECTRONICS DESIGN & TECHNOLOGY,  
ELECTRONICS CIRCUITS & SYSTEM DESIGN)**

**(Effective from the Session: 2016-17)**

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

**Study and Evaluation Scheme M. Tech. in VLSI DESIGN**

(Effective from Session 2016-17)

**First Year, Semester-I**

Sr. No.	Course Code	Subject	Periods			Credit	Evaluation Scheme					Subject Total
			L	T	P		Theory			Practical		
							CT	TA	ESE	TA	ESE	
1.	MTVL101	Low Power VLSI Design	3	0	0	3	20	10	70	-	-	100
2.	MTVL102	FPGA Architecture & Applications	3	0	0	3	20	10	70	-	-	100
3.	MTVL01?	Departmental Elective I	3	0	0	3	20	10	70	-	-	100
4.	MTVL02?	Departmental Elective II	3	0	0	3	20	10	70	-	-	100
5.		Research Process & Methodology	3	0	0	3	20	10	70	-	-	100
6.	MTVL151	VLSI Circuit Design Lab	0	0	3	2	-	-	-	20	30	50
7.	MTVL152	FPGA Design Lab	0	0	3	1	-	-	-	20	30	50
		<b>Total</b>	<b>15</b>	<b>0</b>	<b>6</b>	<b>18</b>						<b>600</b>

**First Year, Semester-II**

Sr. No.	Course Code	Subject	Periods			Credit	Evaluation Scheme					Subject Total
			L	T	P		Theory			Practical		
							CT	TA	ESE	TA	ESE	
1.	MTVL201	Hardware Description Languages	3	0	0	3	20	10	70	-	-	100
2.	MTVL202	VLSI DSP Architectures	3	0	0	3	20	10	70	-	-	100
3.	MTVL03?	Departmental Elective III	3	0	0	3	20	10	70	-	-	100
4.	MTVL04?	Departmental Elective IV	3	0	0	3	20	10	70	-	-	100
5.	MTVL05?	Departmental Elective V	3	0	0	3	20	10	70	-	-	100
6.	MTVL251	Advanced VLSI Design Lab	0	0	3	2	-	-	-	20	30	50
7.	MTVL252	Seminar I	0	0	3	1	-	-	-	50		50
		<b>Total</b>	<b>15</b>		<b>6</b>	<b>18</b>						<b>600</b>

  
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Second Year, Semester-III

Sr. No.	Course Code	Subject	Periods			Credit	Evaluation Scheme					Subject Total
							Theory			Practical		
			L	T	P		CT	TA	ESE	TA	ESE	
1.	MTVL351	Seminar II	0	0	6	3	-	-	-	100	-	100
2.	MTVL352	Dissertation	0	0	30	15	-	-	-	200	300	500
		Total			36	18						600

Second Year, Semester-IV

S. No.	Course Code	Subject	Periods			Credit	Evaluation Scheme					Subject Total
							Theory			Practical		
			L	T	P		CT	TA	ESE	TA	ESE	
1.	MTVL451	Dissertation	0	0	36	18	-	-	-	200	400	600
		Total			36	18						600

Departmental Elective I

- MTVL 011: SOC Design
- MTVL 012: Designing with ASICS
- MTVL 013: Analog VLSI Design

Departmental Elective II

- MTVL 021: Advanced Embedded Systems
- MTVL 022: Testing of VLSI Circuits
- MTVL 023: Digital IC Design

Departmental Elective III

- MTVL 031: Advanced Microcontroller & Systems
- MTVL 032: VLSI based SignalProcessing Architectures
- MTVL 033: Analog IC Design

Departmental Elective IV

- MTVL 041: Real Time Operating Systems
- MTVL 042: VLSI Testing & Testability
- MTVL 043: Memory Technologies

Departmental Elective V

- MTVL 051: Algorithms for VLSI Design Automation
- MTVL 052: MEMS & Micro Sensor Design
- MTVL 053: Embedded System for Wireless Communication

  
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2017-18

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## **Evaluation Scheme & Syllabus**

**for**

**B.Tech. First Year**

(Civil/Computer/Chemical/Electrical/Electronics/Mechanical/Textile/Carpet/)

**On**

**Choice Based Credit System**

(Effective from the Session: 2016-17)

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**B. TECH. FIRST SEMESTER**

Sl No.	Subject Code	Subject Name	L-T-P	Th/Lab Marks	Sessional		Total	Credit
					Test	Assig/Att.		
1	RAS103	Engineering Maths-I	3---1---0	70	20	10	100	4
2	RAS101	Engineering Physics-I	3---1---0	70	20	10	100	4
3	REE101/ RME101	Basic Electrical Engg/ Elements of Mechanical Engg	3---1---0	70	20	10	100	4
4	RAS 104/ RCS101	Professional Communication/ Computer System & Programming in	3---0---0	70	20	10	100	3
5	REC101/ RAS102	Basic Electronics/ Engineering Chemistry	3---1---0	70	20	10	100	4
6	RAS151/ RAS152	Engg. Physics Lab/ Engg. Chemistry Lab	0---0---2	50		50	100	1
7	REE151/ RME151	Basic Electrical Engg Lab/ Elements of Mechanical Engg Lab	0---0---2	50		50	100	1
8	RAS 154/ RCS151	Professional Communication Lab/ Computer Progm. Lab	0---0---2	50		50	100	1
9	RME152/ RCE151	Workshop Practice/ Computer Aided Engg. Graphics	0---0---3	50		50	100	2
	<b>TOTAL</b>						<b>900</b>	<b>24</b>

  
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**B. TECH. SECOND SEMESTER**

Sl No.	Subject Code	Subject Name	L-T-P	Th/Lab Marks	Sessional		Total	Credit
					Test	Assig/Att.		
1	RAS203	Engineering Maths-II	3---1---0	70	20	10	100	4
2	RAS201	Engineering Physics-II	3---1---0	70	20	10	100	4
3	RME201/ REE201	Elements of Mechanical Engg/ Basic Electrical Engg	3---1---0	70	20	10	100	4
4	RCS201/ RAS 204	Computer System & Programming in C/ Professional Communication	3---0---0	70	20	10	100	3
5	RAS202/ REC201	Engineering Chemistry/ Basic Electronics	3---1---0	70	20	10	100	4
6	RAS252/ RAS251	Engg. Chemistry Lab/ Engg. Physics Lab	0---0---2	50		50	100	1
7	RME251/ REE251	Elements of Mechanical Engg Lab/ Basic Electrical Engg Lab	0---0---2	50		50	100	1
8	RCS251/ RAS 254	Computer Progm. Lab/ Professional Communication Lab	0---0---2	50		50	100	1
9	RCE251/ RME252	Computer Aided Engg. Graphics/ Workshop Practice	0---0---3	50		50	100	2
	<b>TOTAL</b>						<b>900</b>	<b>24</b>

  
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**Evaluation Scheme & Syllabus**

**for**

**B.Tech. First Year**

**(Bio-Technology)**

**On**

**Choice Based Credit System**

**(Effective from the Session: 2016-17)**

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**B. Tech. in Biotechnology**  
**First Semester**

S. No.	Subject Code	Subject Name	L-T-P	Th/Lab Marks	Sessional		Total	Credit
					Test	Assig/Att.		
1	RBT-103/RBT-102	Elementary Maths-I/ Remedial Biology-I	3-1-0	70	20	10	100	4
2	RAS-101	Engineering Physics-I	3-1-0	70	20	10	100	4
3	REE-101	Basic Electrical Engineering	3-1-0	70	20	10	100	4
4	RAS-104	Professional Communication	3-0-0	70	20	10	100	3
5	REC-101	Basic Electronics	3-1-0	70	20	10	100	4
6	RAS-151	Engineering Physics Lab	0-0-2	50		50	100	1
7	REE-151	Basic Electrical Engineering Lab	0-0-2	50		50	100	1
8	RAS-154	Professional Communication Lab	0-0-2	50		50	100	1
9	RME-151	Workshop Practice	0-0-3	50		50	100	2
	<b>Total</b>						<b>900</b>	<b>24</b>

  
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**B. Tech. in Biotechnology**  
**Second Semester**

S. No.	Subject Code	Subject Name	L-T-P	Th/Lab Marks	Sessional		Total	Credit
					Test	Assig/Att.		
1	RBT-203/RBT-202	Elementary Maths-II/ Remedial Biology-II	3-1-0	70	20	10	100	4
2	RAS-201	Engineering Physics-II	3-1-0	70	20	10	100	4
3	RME-201	Elements of Mechanical Engg.	3-1-0	70	20	10	100	4
4	RCS-201	Computer System & Programming in C	3-0-0	70	20	10	100	3
5	RAS-202	Engineering Chemistry	3-1-0	70	20	10	100	4
6	RAS-252	Engineering Chemistry Lab	0-0-2	50		50	100	1
7	RME-251	Mechanical Engineering Lab	0-0-2	50		50	100	1
8	RCS-251	Computer Prog. Lab	0-0-2	50		50	100	1
9	RCE-251	Computer Aided Engg. Graphics	0-0-3	50		50	100	2
	<b>Total</b>						<b>900</b>	<b>24</b>

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



**Study & Evaluation Scheme with Syllabus**

**For**

**B.Tech. Second Year**

**(Computer Science and Engineering, Computer Engg. & Information  
Technology)**

**On**

**Choice Based Credit System**

**(Effective from the Session: 2017-18)**

  
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**2<sup>nd</sup> Year III-SEMESTER**

S. No.	Subject Code	Subject Name	L-T-P	ESE Marks	Sessional		Total	Credit
					CT	TA		
1.	RAS301/ ROE030, 032 to 037, 039	Mathematics-III/ Science Based OE	3-1-0	70	20	10	100	4
2.	RVE301/ RAS302	Universal Human Values & Professional Ethics / Environment & Ecology	3-0-0	70	20	10	100	3
3.	REC301	Digital Logic Design	3-0-0	70	20	10	100	3
4.	RCS301	Discrete Structures & Theory of Logic	3-0-0	70	20	10	100	3
5.	RCS302	Computer Organization and Architecture	3-0-0	70	20	10	100	3
6.	RCS305	Data Structures	3-1-0	70	20	10	100	4
7.	REC351	Digital Logic Design Lab	0-0-2	50	30	20	100	1
8.	RCS351	Discrete Structure & Logic Lab	0-0-2	50	30	20	100	1
9.	RCS352	Computer Organization Lab	0-0-2	50	30	20	100	1
10.	RCS355	Data Structures Using C/ Java Lab	0-0-2	50	30	20	100	1
11.	RME101*	Elements of Mechanical Engineering*	3-1-0	70	20	10	100*	--
12.	RCE151*	Computer Aided Engineering Graphics*	0-0-3	50	30	20	100*	--
<b>TOTAL</b>							<b>1000</b>	<b>24</b>

CT: Class Test

TA: Teacher Assessment

L/T/P: Lecture/ Tutorial/ Practical

\*B.Tech. II<sup>nd</sup> year lateral entry students belonging to B.Sc. Stream, shall clear the subjects RCE151/RCE251 and RME101/201 of the first year Engineering Programme along with the second year subjects.

**Science Based Open Electives:**

- a. ROE030/040 Manufacturing Process
- b. ROE032/042 Nano Science
- c. ROE033/043 Laser System and Application
- d. ROE034/044 Space Science
- e. ROE035/045 Polymer Science & Technology
- f. ROE036/046 Nuclear Science
- g. ROE037/047 Material Science
- h. ROE039/049 Applied Linear Algebra

  
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**2<sup>nd</sup> Year IV-SEMESTER**

S. No.	Subject Code	Subject Name	L-T-P	ESE Marks	Sessional		Total	Credit
					CT	TA		
1.	ROE040, 042 to 047, 049/ RAS401	Science Based OE/ Mathematics-III	3-1-0	70	20	10	100	4
2.	RAS402/ RVE401	Environment & Ecology/ Universal Human Values & Professional Ethics	3-0-0	70	20	10	100	3
3.	REC405	Introduction to Microprocessor	3-0-0	70	20	10	100	3
4.	RCS401	Operating Systems	3-0-0	70	20	10	100	3
5.	RCS402	Software Engineering	3-0-0	70	20	10	100	3
6.	RCS403	Theory of Automata and Formal Languages	3-1-0	70	20	10	100	4
7.	RCS451	Operating Systems Lab	0-0-2	50	30	20	100	1
8.	RCS452	Software Engineering Lab	0-0-2	50	30	20	100	1
9.	RCS453	T AFL Lab	0-0-2	50	30	20	100	1
10.	RCS454	Python Language Programming Lab	0-0-2	50	30	20	100	1
11.	RME201*	Elements of Mechanical Engineering*	3-1-0	70	20	10	100*	--
12.	RCE251*	Computer Aided Engineering Graphics*	0-0-3	50	30	20	100*	--
<b>TOTAL</b>							<b>1000</b>	<b>24</b>

CT: Class Test

TA: Teacher Assessment

L/T/P: Lecture/ Tutorial/ Practical

**\*B.Tech. II<sup>nd</sup> year lateral entry students belonging to B.Sc. Stream, shall clear the subjects RCE151/RCE251 and RME101/201 of the first year Engineering Programme along with the second year subjects.**

**Science Based Open Electives:**

- a. ROE030/040 Manufacturing Process
- b. ROE032/042 Nano Science
- c. ROE033/043 Laser System and Application
- d. ROE034/044 Space Science
- e. ROE035/045 Polymer Science & Technology
- f. ROE036/046 Nuclear Science
- g. ROE037/047 Material Science
- h. ROE039/049 Applied Linear Algebra

  
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# UTTAR PRADESH TECHNICAL UNIVERSITY LUCKNOW



## SYLLABUS

Bachelor of Computer Science & Engineering  
&  
Bachelor of Computer Science & Information  
Technology

3<sup>rd</sup> Year (V & VI Semester)

(Effective from Session: 2015-2016)

  
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**U.P. TECHNICAL UNIVERSITY, LUCKNOW**

**STUDY EVALUATION SCHEME**

**B. TECH. COMPUTER SCIENCE & ENGINEERING**

**&**

**B. TECH. COMPUTER SCIENCE AND INFORMATION TECHNOLOGY**

**YEAR THIRD, SEMESTER -V**

**(Effective from the session: 2015-16)**

S. No	Course Code	Subject	Periods			Evaluation Scheme				Subject Total	Credit
			L	T	P	Sessional Exam			ESE		
						CT	TA	Total			
<b>THEORY SUBJECT</b>											
1	NCS 501	Design and Analysis of Algorithm	3	1	0	30	20	50	100	150	4
2	NCS 502	Database Management System	3	1	0	30	20	50	100	150	4
3	NCS 503	Principle of Programming Language	3	1	0	30	20	50	100	150	4
4	NCS 504	Web Technology	3	1	0	30	20	50	100	150	4
5	NCS 505	Computer Architecture	2	1	0	15	10	25	50	75	3
6	NHU5 01	Engineering Economics	2	0	0	15	10	25	50	75	2
<b>PRACTICAL/DESIGN/DRAWING</b>											
7	NCS 551	Design and Analysis of Algorithm Lab	0	0	3	10	10	20	30	50	1
8	NCS 552	DBMS Lab	0	0	3	10	10	20	30	50	1
9	NCS 553	Principle of Programming Language	0	0	2	10	10	20	30	50	1
10	NCS 554	Web Technology Lab	0	0	2	10	10	20	30	50	1
11	NGP 501	GP						50		50	
		<b>TOTAL</b>	<b>16</b>	<b>5</b>	<b>10</b>					<b>1000</b>	<b>25</b>

  
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# STUDY EVALUATION SCHEME

## B. TECH. COMPUTER SCIENCE & ENGINEERING & B. TECH. COMPUTER SCIENCE AND INFORMATION TECHNOLOGY

YEAR THIRD, SEMESTER -VI

(Effective from the session : 2015-16)

S. No	Course Code	Subject	Periods			Evaluation Scheme				Subject Total	Credit
			L	T	P	Sessional Exam			ESE		
						CT	TA	Total			
<b>THEORY SUBJECT</b>											
1	NCS 601	Computer Networks	3	1	0	30	20	50	100	150	4
2	NCS 602	Software Engineering	3	1	0	30	20	50	100	150	4
3	NCS 603	Compiler Design	3	1	0	30	20	50	100	150	4
4		Departmental Elective-I	3	1	0	30	20	50	100	150	4
5		Departmental Elective-II	2	1	0	15	10	25	50	75	3
6	NHU 601	Industrial Management	2	0	0	15	10	25	50	75	2
<b>PRACTICAL/DESIGN/DRAWING</b>											
7	NCS 651	Computer Networks Lab	0	0	3	10	10	20	30	50	1
8	NCS 652	Software Engineering Lab	0	0	3	10	10	20	30	50	1
9	NCS 653	Compiler Design Lab	0	0	2	10	10	20	30	50	1
10	NCS 654	SEMINAR	0	0	2		50	50		50	1
11	NGP 601	GP						50		50	
		<b>TOTAL</b>	<b>16</b>	<b>5</b>	<b>10</b>					<b>1000</b>	<b>25</b>

### Departmental Elective-I

1. NCS 061: Computational Geometry
2. NCS 062: Complexity Theory
3. NCS 063: Parallel Algorithm
4. NCS 064: Approximation & Randomized Algorithm
5. NCS 065: Concurrent System

### Departmental Elective-II

1. NCS 066: Data Warehousing & Data Mining
2. NCS 067: Distributed Database
3. NCS 068: E-Commerce
4. NCS 069: Advance DBMS
5. NCS 070: Human Computer Interface

  
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**Dr.A.P.J.Abdulkalam Technical University, UttarPardesh,Lucknow**  
(Formerly Uttar Pradesh Technical University)

**STUDY EVALUATION SCHEME**

**B. TECH. COMPUTER SCIENCE & ENGINEERING**

**YEAR forth, SEMESTER –VII**

**(Effective from the session: 2016-17)**

S.No.	Subject Code	Subject	Period	Evaluation Scheme				Total	Credit
				Sessional			Exam		
				CT	TA	Total			
1		Open Elective I	3-1-0	30	20	50	100	150	4
2	NCS-701	Distributed System	3-1-0	30	20	50	100	150	4
3	NCS-702	Artificial Intelligence	3-1-0	30	20	50	100	150	4
4		Departmental Elective III	3-1-0	30	20	50	100	150	4
5		Departmental Elective IV	3-1-0	30	20	50	100	150	4
Practical / Training /Projects									
6	NCS-751	Distributed System *	0-0-2	-	20	20	30	50	1
7	NCS-752	Project	0-0-6	-	100	100	-	100	3
8	NCS-753	Industrial Training	0-0-2	-	50	50	-	50	1
9	GP-701	General Proficiency	-	-	-	-	-	50	
		Total	15-5-10					1000	25

1. Practical Training done after 6<sup>th</sup> Semester would be evaluated in 7<sup>th</sup> semester through Report and Viva-voce.
2. Project has to be initiated in 7<sup>th</sup> semester beginning and completed by the end of 8<sup>th</sup> semester with proper report and demonstration.

\* At least 10 problems are to be considered based on corresponding theory course.

  
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Dr.A.P.J.Abdul kalam Technical University,UttarPardesh,Lucknow  
(Formerly Uttar Pradesh Technical University)

**STUDY EVALUATION SCHEME**  
**B. TECH. COMPUTER SCIENCE & ENGINEERING**  
**YEAR forth, SEMESTER –VIII**  
**(Effective from the session: 2016-17)**

SNo	Subject Code	Subject	Period	Evaluation Scheme				Total	Credit
				Sessional			Exam		
				CT	TA	Total			
1		Open Elective II	3-1-0	30	20	50	100	150	4
2	NCS-801	Digital Image Processing	3-1-0	30	20	50	100	150	4
3		Departmental Elective V	3-1-0	30	20	50	100	150	4
4		Departmental Elective VI	3-1-0	30	20	50	100	150	4
Practical's / Training /Projects									
5	NCS-851	Seminar	0-0-3	-	50	50	-	50	2
6	NCS-852	Project	0-0-12	-	100	100	200	300	7
7	GP-801	General Proficiency	-	-	-	-	-	50	
		Total	12-4-15					1000	25

  
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### **Open Elective I**

1. NOE-071 Entrepreneurship Development
2. NOE-072 Quality Management
3. NOE-073 Operations Research
4. NOE-074 Introduction to Bio Technology
5. NOE-075 Mobile Application Development
6. NOE-076 Ethical Hacking and Prevention
7. NOE-077 Software Project Management

### **Open Elective II**

1. NOE-081 Non Conventional Energy Resources
2. NOE-082 Non Linear Dynamics Systems
3. NOE-083 Product Development
4. NOE-084 Automation and Robotics

### **Departmental Elective III**

1. NCS-071 Software Testing and Audit
2. NCS-072 Neural Network
3. NCS-073 Computer Vision

### **Departmental Elective IV**

1. NCS-074 High Speed Network
2. NCS-075 Android Operating System
3. NCS-076 Service Oriented Architecture
4. NIT-701 Cryptographic & Network Security

### **Departmental Elective V**

1. NCS-080 Pattern Recognition
2. NCS-081 High Performance Computing
3. NCS-082 Real Time System
4. NCS-083 Cluster Computing
5. NCS-084 Grid Computing

### **Departmental Elective VI**

1. NCS-085 Data Compression
2. NCS-086 Quantum Computing
3. NCS-087 Embedded Systems
4. NCS-088 Semantic Web and Web Services

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



**Study & Evaluation Scheme with Syllabus**

**For**

**B.Tech. Second Year**

**Information Technology**

**On**

**Choice Based Credit System**

**(Effective from the Session: 2017-18)**

*Prabhu*  
Director  
IMS Engineering College  
Ghaziabad

**2<sup>nd</sup> Year III-SEMESTER**

S. No.	Subject Code	Subject Name	L-T-P	ESE Marks	Sessional		Total	Credit
					CT	TA		
1.	RAS301/ ROE030, 032 to 037, 039	Mathematics-III/ Science Based OE	3-1-0	70	20	10	100	4
2.	RVE301/ RAS302	Universal Human Values & Professional Ethics / Environment & Ecology	3-0-0	70	20	10	100	3
3.	REC301	Digital Logic Design	3-0-0	70	20	10	100	3
4.	RCS301	Discrete Structures & Theory of Logic	3-0-0	70	20	10	100	3
5.	RCS302	Computer Organization and Architecture	3-0-0	70	20	10	100	3
6.	RCS305	Data Structures	3-1-0	70	20	10	100	4
7.	REC351	Digital Logic Design Lab	0-0-2	50	30	20	100	1
8.	RCS351	Discrete Structure & Logic Lab	0-0-2	50	30	20	100	1
9.	RCS352	Computer Organization Lab	0-0-2	50	30	20	100	1
10.	RCS355	Data Structures Using C/ Java Lab	0-0-2	50	30	20	100	1
11.	RME101*	Elements of Mechanical Engineering*	3-1-0	70	20	10	100*	--
12.	RCE151*	Computer Aided Engineering Graphics*	0-0-3	50	30	20	100*	--
<b>TOTAL</b>							<b>1000</b>	<b>24</b>

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

\*B.Tech. II<sup>nd</sup> year lateral entry students belonging to B.Sc. Stream, shall clear the subjects RCE151/RCE251 and RME101/201 of the first year Engineering Programme along with the second year subjects.

**Science Based Open Electives:**

- a. ROE030/040 Manufacturing Process
- b. ROE032/042 Nano Science
- c. ROE033/043 Laser System and Application
- d. ROE034/044 Space Science
- e. ROE035/045 Polymer Science & Technology
- f. ROE036/046 Nuclear Science
- g. ROE037/047 Material Science
- h. ROE039/049 Applied Linear Algebra

  
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2 <sup>nd</sup> Year IV-SEMESTER								
S. No.	Subject Code	Subject Name	L-T-P	ESE Marks	Sessional		Total	Credit
					CT	TA		
1.	ROE040, 042 to 047, 049/ RAS401	Science Based OE/ Mathematics-III	3-1-0	70	20	10	100	4
2.	RAS402/ RVE401	Environment & Ecology/ Universal Human Values & Professional Ethics	3-0-0	70	20	10	100	3
3.	REC406	Information Theory and Coding	3-0-0	70	20	10	100	3
4.	RCS401	Operating Systems	3-0-0	70	20	10	100	3
5.	RCS402	Software Engineering	3-0-0	70	20	10	100	3
6.	RCS403	Theory of Automata and Formal Languages	3-1-0	70	20	10	100	4
7.	RCS451	Operating Systems Lab	0-0-2	50	30	20	100	1
8.	RCS452	Software Engineering Lab	0-0-2	50	30	20	100	1
9.	RCS453	TAFL Lab	0-0-2	50	30	20	100	1
10.	RCS454	Python Language Programming Lab	0-0-2	50	30	20	100	1
11.	RME201*	Elements of Mechanical Engineering*	3-1-0	70	20	10	100*	--
12.	RCE251*	Computer Aided Engineering Graphics*	0-0-3	50	30	20	100*	--
<b>TOTAL</b>							<b>1000</b>	<b>24</b>

CT: Class Test

TA: Teacher Assessment

L/T/P: Lecture/ Tutorial/ Practical

\*B.Tech. II<sup>nd</sup> year lateral entry students belonging to B.Sc. Stream, shall clear the subjects RCE151/RCE251 and RME101/201 of the first year Engineering Programme along with the second year subjects.

**Science Based Open Electives:**

- ROE030/040 Manufacturing Process
- ROE032/042 Nano Science
- ROE033/043 Laser System and Application
- ROE034/044 Space Science
- ROE035/045 Polymer Science & Technology
- ROE036/046 Nuclear Science
- ROE037/047 Material Science
- ROE039/049 Applied Linear Algebra

  
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# UTTAR PRADESH TECHNICAL UNIVERSITY LUCKNOW



## SYLLABUS

### Bachelor of Information Technology

3<sup>rd</sup> Year (V & VI Semester)

(Effective from Session 2015-2016)

*P. Sachin*  
Director  
IMS Engineering College  
Ghaziabad



**U.P. TECHNICAL UNIVERSITY, LUCKNOW**  
**STUDY EVALUATION SCHEME**  
**B. TECH. INFORMATION TECHNOLOGY**  
**YEAR THIRD, SEMESTER –V**  
(Effective from the session : 2015-16)

S. No	Course Code	Subject	Periods			Evaluation Scheme				Subject Total	Credit
			L	T	P	Sessional Exam			ESE		
						CT	TA	Total			
<b>THEORY SUBJECT</b>											
1	NCS 501	Design and Analysis of Algorithm	3	1	0	30	20	50	100	150	4
2	NCS 502	Database Management System	3	1	0	30	20	50	100	150	4
3	NCS 503	Principle of Programming Language	3	1	0	30	20	50	100	150	4
4	NCS 504	Web Technology	3	1	0	30	20	50	100	150	4
5	NIT 501	Management Information System	2	1	0	15	10	25	50	75	3
6	NHU 501	Engineering Economics	2	0	0	15	10	25	50	75	2
<b>PRACTICAL/DESIGN/DRAWING</b>											
7	NCS 551	Design and Analysis of Algorithm Lab	0	0	3	10	10	20	30	50	1
8	NCS 552	DBMS Lab	0	0	3	10	10	20	30	50	1
9	NCS 553	Principle of Programming Language Lab	0	0	2	10	10	20	30	50	1
10	NCS 554	Web Technology Lab	0	0	2	10	10	20	30	50	1
11	NGP 501	GP						50		50	
		<b>TOTAL</b>	<b>16</b>	<b>5</b>	<b>10</b>					<b>1000</b>	<b>25</b>

**U.P. TECHNICAL UNIVERSITY, LUCKNOW**  
**STUDY EVALUATION SCHEME**  
**B. TECH. INFORMATION TECHNOLOGY**  
**YEAR THIRD, SEMESTER –VI**  
**(Effective from the session : 2015-16)**

S. No	Course Code	Subject	Periods			Evaluation Scheme				Subject Total	Credit
			L	T	P	Sessional Exam			ESE		
						CT	TA	Total			
<b>THEORY SUBJECT</b>											
1	NCS 601	Computer Networks	3	1	0	30	20	50	100	150	4
2	NCS 602	Software Engineering	3	1	0	30	20	50	100	150	4
3	NCS 603	Compiler Design	3	1	0	30	20	50	100	150	4
4		Departmental Elective-I	3	1	0	30	20	50	100	150	4
5		Departmental Elective-II	2	1	0	15	10	25	50	75	3
6	NHU 601	Industrial Management	2	0	0	15	10	25	50	75	2
<b>PRACTICAL/DESIGN/DRAWING</b>											
7	NCS 651	Computer Networks Lab	0	0	3	10	10	20	30	50	1
8	NCS 652	Software Engineering Lab	0	0	3	10	10	20	30	50	1
9	NCS 653	Compiler Design Lab	0	0	2	10	10	20	30	50	1
10	NIT 654	SEMINAR	0	0	2		50	50		50	1
11	NGP 601	GP						50		50	
		<b>TOTAL</b>	<b>16</b>	<b>5</b>	<b>10</b>					<b>1000</b>	<b>25</b>

**Departmental Elective-I**

1. NIT 061: Information Retrieval and Management
2. NIT 062: Modeling & Simulation
3. NIT 063: Bioinformatics
4. NIT 064: Knowledge based & decision Support System
5. NIT 065: Geographic Information System

**Departmental Elective-II**

1. NCS 066: Data Warehousing & Data Mining
2. NCS 070: Human Computer Interface
3. NIT 066: E-Business Strategies
4. NCS 067: Distributed Database
5. NIT 067: Big Data

  
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**Ghaziabad**

# UTTAR PRADESH TECHNICAL UNIVERSITY LUCKNOW



## SYLLABUS

### Bachelor of Information Technology

3<sup>rd</sup> Year (V & VI Semester)

(Effective from Session 2015-2016)

  
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**U.P. TECHNICAL UNIVERSITY, LUCKNOW**  
**STUDY EVALUATION SCHEME**  
**B. TECH. INFORMATION TECHNOLOGY**  
**YEAR THIRD, SEMESTER -V**

(Effective from the session : 2015-16)

S No	Course Code	Subject	Periods			Evaluation Scheme				Subject Total	Credit
			L	T	P	Sessional Exam			ESE		
						CT	TA	Total			
<b>THEORY SUBJECT</b>											
1	NCS 501	Design and Analysis of Algorithm	3	1	0	30	20	50	100	150	4
2	NCS 502	Database Management System	3	1	0	30	20	50	100	150	4
3	NCS 503	Principle of Programming Language	3	1	0	30	20	50	100	150	4
4	NCS 504	Web Technology	3	1	0	30	20	50	100	150	4
5	NIT 501	Management Information System	2	1	0	15	10	25	50	75	3
6	NHU 501	Engineering Economics	2	0	0	15	10	25	50	75	2
<b>PRACTICAL/DESIGN/DRAWING</b>											
7	NCS 551	Design and Analysis of Algorithm Lab	0	0	3	10	10	20	30	50	1
8	NCS 552	DBMS Lab	0	0	3	10	10	20	30	50	1
9	NCS 553	Principle of Programming Language Lab	0	0	2	10	10	20	30	50	1
10	NCS 554	Web Technology Lab	0	0	2	10	10	20	30	50	1
11	NGP 501	GP						50		50	
		<b>TOTAL</b>	<b>16</b>	<b>5</b>	<b>10</b>					<b>1000</b>	<b>25</b>

*Prabhu*

Director  
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**Ghaziabad**

**U.P. TECHNICAL UNIVERSITY, LUCKNOW**  
**STUDY EVALUATION SCHEME**  
**B. TECH. INFORMATION TECHNOLOGY**  
**YEAR THIRD, SEMESTER –VI**  
**(Effective from the session : 2015-16)**

S. No	Course Code	Subject	Periods			Evaluation Scheme				Subject Total	Credit
			L	T	P	Sessional Exam			ESE		
						CT	TA	Total			
<b>THEORY SUBJECT</b>											
1	NCS 601	Computer Networks	3	1	0	30	20	50	100	150	4
2	NCS 602	Software Engineering	3	1	0	30	20	50	100	150	4
3	NCS 603	Compiler Design	3	1	0	30	20	50	100	150	4
4		Departmental Elective-I	3	1	0	30	20	50	100	150	4
5		Departmental Elective-II	2	1	0	15	10	25	50	75	3
6	NHU 601	Industrial Management	2	0	0	15	10	25	50	75	2
<b>PRACTICAL/DESIGN/DRAWING</b>											
7	NCS 651	Computer Networks Lab	0	0	3	10	10	20	30	50	1
8	NCS 652	Software Engineering Lab	0	0	3	10	10	20	30	50	1
9	NCS 653	Compiler Design Lab	0	0	2	10	10	20	30	50	1
10	NIT 654	SEMINAR	0	0	2		50	50		50	1
11	NGP 601	GP						50		50	
		<b>TOTAL</b>	<b>16</b>	<b>5</b>	<b>10</b>					<b>1000</b>	<b>25</b>

**Departmental Elective-I**

1. NIT 061: Information Retrieval and Management
2. NIT 062: Modeling & Simulation
3. NIT 063: Bioinformatics
4. NIT 064: Knowledge based & decision Support System
5. NIT 065: Geographic Information System

**Departmental Elective-II**

1. NCS 066: Data Warehousing & Data Mining
2. NCS 070: Human Computer Interface
3. NIT 066: E-Business Strategies
4. NCS 067: Distributed Database
5. NIT 067: Big Data

  
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**Ghaziabad**

**Dr.A.P.J.Abdul**  
**kalam Technical University, Uttar Pradesh, Lucknow**  
 (Formerly Uttar Pradesh Technical University)  
**STUDY EVALUATION SCHEME**  
**INFORMATION TECHNOLOGY**  
**YEAR forth, SEMESTER –VII**  
**(Effective from the session: 2016-17)**

S.No.	Subject Code	Subject	Period	Evaluation Scheme			Total	Credit	
				Sessional		Exam			
				CT	TA				Total
1		<u>Open Elective I</u>	3-1-0	30	20	50	100	150	4
2	NIT-701	Cryptography & Network Security	3-1-0	30	20	50	100	150	4
3	NCS-702	Artificial Intelligence	3-1-0	30	20	50	100	150	4
4		<u>Departmental Elective III</u>	3-1-0	30	20	50	100	150	4
5		<u>Departmental Elective IV</u>	3-1-0	30	20	50	100	150	4
<b>Practical / Training /Projects</b>									
6	NIT-751	Cryptography & Network Security*	0-0-2	-	20	20	30	50	1
7	NCS-752	Project	0-0-6	-	100	100	-	100	3
8	NCS-753	Industrial Training	0-0-2	-	50	50	-	50	1
9	GP-701	General Proficiency	-	-	-	-	-	50	
		<b>Total</b>	<b>15-5-10</b>					<b>1000</b>	<b>25</b>

1. Practical Training done after 6<sup>th</sup> Semester would be evaluated in 7<sup>th</sup> semester through Report and Viva-voce.
2. Project has to be initiated in 7<sup>th</sup> semester beginning and completed by the end of 8<sup>th</sup> semester with proper report and demonstration.

\* At least 10 problems are to be considered based on corresponding theory course.

*Prakash*  
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**Dr.A.P.J.Abdulkalam Technical University,UttarPardesh,Lucknow**  
 (Formerly Uttar Pradesh Technical University)  
**STUDY EVALUATION SCHEME**  
**INFORMATION TECHNOLOGY**  
**YEAR forth, SEMESTER –VIII**  
**(Effective from the session: 2016-17)**

SNo	Subject Code	Subject	Period	Evaluation Scheme				Total	Credit
				Sessional			Exam		
				CT	TA	Total			
1		<u>Open Elective II</u>	3-1-0	30	20	50	100	150	4
2	NIT-801	Mobile Computing	3-1-0	30	20	50	100	150	4
3		<u>Departmental Elective V</u>	3-1-0	30	20	50	100	150	4
4		<u>Departmental Elective VI</u>	3-1-0	30	20	50	100	150	4
<b>Practicals / Training /Projects</b>									
5	NIT-851	Seminar	0-0-3	-	50	50	-	50	2
6	NCS-852	Project	0-0-12	-	100	100	200	300	7
7	GP-801	General Proficiency	-	-	-	-	-	50	
		<b>Total</b>	<b>12-4-15</b>					<b>1000</b>	<b>25</b>

\* At least 10 problems are to be considered based on corresponding theory course.

  
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### **Open Elective I**

- NOE-071 Entrepreneurship Development
- NOE-072 Quality Management
- NOE-073 Operations Research
- NOE-074 Introduction to Bio Technology
- NOE-075 Mobile Application Development
- NOE-076 Ethical Hacking and Prevention
- NOE-077 Software Project Management

### **Open Elective II**

1. NOE-081 Non Conventional Energy Resources
2. NOE-082 Non Linear Dynamics Systems
3. NOE-083 Product Development
4. NOE-084 Automation and Robotics

### **Departmental Elective III**

1. NCS-071 Software Testing and Audit
2. NCS-072 Neural Network
3. NIT-071 IT in Forensic Science

### **Departmental Elective IV**

1. NCS-074 High Speed Network
2. NCS-075 Android Operating System
3. NCS-076 Service Oriented Architecture
4. NCS-701 Distributed System
5. NCS-073 Computer Vision

### **Departmental Elective V**

1. NCS-080 Pattern Recognition
2. NCS-082 Real Time System
3. NCS-084 Grid Computing
4. NCS-801 Digital Image Processing
5. NIT-080 Natural Language Processing

### **Departmental Elective VI**

1. NCS-085 Data Compression
2. NCS-087 Embedded Systems
3. NCS-088 Semantic Web and Web Services
4. NIT-081 Software Quality Engineering
5. NIT-082 Software Reliability

  
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**DR. A.P.J. ABDUL KALAM TECHNICAL UNIVERSITY  
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**Study & Evaluation Scheme with Syllabus  
for**

**B.Tech. Second Year**

**Electrical Engineering / Electrical & Electronics Engineering**

**On**

**Choice Based Credit System**

**(Effective from the Session: 2017-18)**

  
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**2<sup>nd</sup> Year III-SEMESTER**

S. No.	Subject Code	Subject Name	L-T-P	ESE Marks	Sessional		Total	Credit
					CT	TA		
1.	ROE030 to 039/ RAS301	Science Based Open Elective/ Mathematics-III	3-1-0	70	20	10	100	4
2.	RVE301/ RAS302	Universal Human Values & Professional Ethics/ Environment & Ecology	3-0-0	70	20	10	100	3
3.	REC309	Analog & Digital Electronics	3-0-0	70	20	10	100	3
4.	REE301	Electrical & Electronics Engineering Materials	3-0-0	70	20	10	100	3
5.	REE302	Electrical Measurements & Instrumentation	3-0-0	70	20	10	100	3
6.	REE303	Basic Signals & Systems	3-1-0	70	20	10	100	4
7.	REE351	Electrical Workshop	0-0-2	50	30	20	100	1
8.	REE352	Electrical Measurements Lab	0-0-2	50	30	20	100	1
9.	REE353	Simulation Lab – I	0-0-2	50	30	20	100	1
10.	REC359	Electronics Lab	0-0-2	50	30	20	100	1
11.	RME101*	Elements of Mechanical Engineering*	3-1-0	70	20	10	100*	--
12.	RCE151*	Computer Aided Engineering Graphics*	0-0-3	50	30	20	100*	--
Total							1000	24

CT: Class Test

TA: Teacher Assessment

L/T/P: Lecture/ Tutorial/ Practical

**\*B.Tech. II<sup>nd</sup> year lateral entry students belonging to B.Sc. Stream, shall clear the subjects RCE151/RCE251 and RME101/201 of the first year Engineering Programme along with the second year subjects.**

**Science Based Open Electives:**

- a. ROE030/ROE040 Manufacturing Process
- b. ROE031/ROE041 Introduction to soft computing
- c. ROE032/ROE042 Nano Science
- d. ROE033/ROE043 Laser System and Application
- e. ROE034/ROE044 Space Science
- f. ROE035/ROE045 Polymer Science & Technology
- g. ROE036/ROE046 Nuclear Science
- h. ROE037/ROE047 Material Science
- i. ROE038/ROE048 Discrete Mathematics
- j. ROE039/ROE049 Applied Linear Algebra

  
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**2<sup>nd</sup> Year IV-SEMESTER**

S. No.	Subject Code	Subject Name	L-T-P	ESE Marks	Sessional		Total	Credit
					CT	TA		
1.	RAS401/ ROE040 to 049	Mathematics-III/ Science Based Open Elective	3-1-0	70	20	10	100	4
2.	RAS402/ RVE401	Environment & Ecology/ Universal Human Values & Professional Ethics	3-0-0	70	20	10	100	3
3.	REC402	Electromagnetic Field Theory	3-1-0	70	20	10	100	4
4.	REE401	Power Plant Engineering	3-0-0	70	20	10	100	3
5.	REE402	Electrical Machines -I	3-0-0	70	20	10	100	3
6.	REE405	Network Analysis and Synthesis	3-0-0	70	20	10	100	3
7.	REE451	Simulation– II Lab	0-0-2	50	30	20	100	1
8.	REE452	Electrical Machines -I Lab	0-0-2	50	30	20	100	1
9.	REE453	Networks Lab	0-0-2	50	30	20	100	1
10.	REE454	Electrical Instrumentation Lab	0-0-2	50	30	20	100	1
11.	RME201*	Elements of Mechanical Engineering*	3-1-0	70	20	10	100*	--
12.	RCE251*	Computer Aided Engineering Graphics*	0-0-3	50	30	20	100*	--
Total							1000	24

CT: Class Test

TA: Teacher Assessment

L/T/P: Lecture/ Tutorial/ Practical

**\*B.Tech. II<sup>nd</sup> year lateral entry students belonging to B.Sc. Stream, shall clear the subjects RCE151/RCE251 and RME101/201 of the first year Engineering Programme along with the second year subjects.**

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- b. ROE031/ROE041 Introduction to soft computing
- c. ROE032/ROE042 Nano Science
- d. ROE033/ROE043 Laser System and Application
- e. ROE034/ROE044 Space Science
- f. ROE035/ROE045 Polymer Science & Technology
- g. ROE036/ROE046 Nuclear Science
- h. ROE037/ROE047 Material Science
- i. ROE038/ROE048 Discrete Mathematics
- j. ROE039/ROE049 Applied Linear Algebra

# UTTAR PRADESH TECHNICAL UNIVERSITY LUCKNOW



## SYLLABUS

### Bachelor of Electrical and Electronics Engineering

3<sup>rd</sup> Year (V & VI Semester)

(Effective from Session 2015-2016)

  
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# STUDY AND EVALUATION SCHEME OF ELECTRICAL & ELECTRONICS ENGINEERING

Third Year

Semester-V

S. No	Subject Code	Name of the Subject	Periods			Evaluation Scheme				Subject Total	Credit
			L	T	P	Sessional Assessment			ESE		
						C	T	Total			
THEORY SUBJECT											
1	NEE-501	Elements Of Power System	3	1	0	30	20	50	100	150	4
2	NEE 502	Power Electronics	3	1	0	30	20	50	100	150	4
3	NEE-503	Control System	3	1	0	30	20	50	100	150	4
4	NEE-504	Microprocessor & Its Applications	3	1	0	30	20	50	100	150	4
5	NEC-508	Fundamentals of E.M. Theory	2	1	0	15	10	25	50	75	3
6	NHU-501	Engineering Economics	2	0	0	15	10	25	50	75	2
PRACTICAL/DESIGN/DRAWING											
7	NEE-551	Power Electronics Lab	0	0	3	10	10	20	30	50	1
8	NEE 552	Control System Lab	0	0	3	10	10	20	30	50	1
9	NEE-553	Microprocessor Lab	0	0	2	10	10	20	30	50	1
10	NEE 554	Simulation Based Minor Project	0	0	2	10	10	20	30	50	1
11	NGP 501	GP						50		50	1
		<b>TOTAL</b>	<b>16</b>	<b>5</b>	<b>10</b>					<b>1000</b>	<b>26</b>

  
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**STUDY AND EVALUATION SCHEME OF ELECTRICAL & ELECTRONICS ENGINEERING**

**Third Year**

**Semester-VI**

S. No	Subject Code	Name of the Subject	Periods			Evaluation Scheme				Subject Total	Credit
			L	T	P	Sessional Assessment			ESE		
						C T	T A	Tot al			
<b>THEORY SUBJECT</b>											
1	NEE-601	Power System Analysis	3	1	0	30	20	50	100	150	4
2	NEE 602	Switchgear & Protection	3	1	0	30	20	50	100	150	4
3	NEN-603/ NEC 501	Integrated Circuits	3	1	0	30	20	50	100	150	4
4	NEN-011-NEN-014	Departmental Elective-I	3	1	0	30	20	50	100	150	4
5	NEN-021-NEN-024	Departmental Elective-II	2	1	0	15	10	25	50	75	3
6	NHU-601	Industrial Management	2	0	0	15	10	25	50	75	2
<b>PRACTICAL/DESIGN/DRAWING</b>											
7	NEC-651	IC Lab	0	0	2	10	10	20	30	50	1
8	NEN-652	Electrical & Electronics CAD Lab	0	0	3	10	10	20	30	50	1
9	NEN-653	Minor Project	0	0	2	10	10	20	30	50	1
10	NEN- 654	Seminar	0	0	3		50	50		50	1
11	NGP-601	GP						50		50	1
		<b>TOTAL</b>	<b>16</b>	<b>5</b>	<b>10</b>					<b>1000</b>	<b>26</b>

  
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**Dr. APJ ABDUL KALAM TECHNICAL UNIVERSITY, UTTAR PRADESH,  
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**STUDY AND EVALUATION SCHEME OF ELECTRICAL &  
ELECTRONICS ENGINEERING**

**Fourth Year**

**Semester-VII**

S.NO.	SUBJECT CODE	NAME OF THE SUBJECT	PERIODS			EVALUATION SCHEME			SUBJECT TOTAL	CREDIT	
			L	T	P	SESSIONAL ASSESMENT		ESE			
						CT	TA				TOTAL
<b>THEORY SUBJECT</b>											
1	NEN701	ELECTRIC DRIVES	3	1	0	30	20	50	100	150	4
2	NEN702	POWER STATION PRACTICE	3	1	0	30	20	50	100	150	4
3	NEC702A	ANALOG & DIGITAL COMMUNICATION	3	1	0	30	20	50	100	150	4
4	NEN031 to 033, NCS039	DEPARTMENTAL ELECTIVE-III	3	1	0	30	20	50	100	150	4
5	NOE071 to 074	OPEN ELECTIVE-I	3	1	0	30	20	50	100	150	4
<b>PRACTICAL/DESIGN/DRAWING</b>											
6	NEN751	POWER SYSTEM LAB	0	0	3	10	10	20	30	50	1
7	NEC752B	ADC LAB	0	0	3	10	10	20	30	50	1
8	NEN753	INDUSTRIAL TRAINING	0	0	2	30	20	50	--	50	1
9	NEN754	PROJECT	0	0	2	30	20	50	--	50	1
10	NGP701	GP					50	50		50	1
		<b>TOTAL</b>	<b>16</b>	<b>5</b>	<b>10</b>					<b>1000</b>	<b>24</b>

**LIST OF DEPARTMENTAL ELECTIVE-III**

NEN-031 POWER SYSTEM OPERATION AND CONTROL  
 NEN-032 ADVANCED MICROPROCESSORS AND MICROCONTROLLERS  
 NEN-033 FLEXIBLE AC TRANSMISSION SYSTEMS  
 NCS-039 OBJECT ORIENTED SYSTEMS AND C++

**LIST OF OPEN ELECTIVE-I**

NOE-071 ENTREPRENEURSHIP DEVELOPMENT  
 NOE-072 QUALITY MANAGEMENT  
 NOE-073 OPERATIONS RESEARCH  
 NOE-074 INTRODUCTION TO BIO TECHNOLOGY

  
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## PROPOSED STUDY AND EVALUATION SCHEME OF ELECTRICAL & ELECTRONICS ENGINEERING

Fourth Year

Semester-VIII

S. NO.	SUBJECT CODE	NAME OF THE SUBJECT	PERIODS			EVALUATION SCHEME			SUBJECT TOTAL	CREDIT	
			L	T	P	SESSIONAL ASSESMENT		ESE			
						CT	TA				TOTAL
<b>THEORY SUBJECT</b>											
1	NEE801	ELECTRICAL & ELECTRONICS ENGINEERING MATERIALS	3	1	0	30	20	50	100	150	3
2	NEC802	EMBEDDED SYSTEM	3	1	0	30	20	50	100	150	4
3	NEE041 to 042; NEN043 to 044	DEPARTMENTAL ELECTIVE-IV	3	1	0	30	20	50	100	150	4
4	NOE081 to 082; NOE084 to 085	OPEN ELECTIVE-2	3	1	0	30	20	50	100	150	4
<b>PRACTICAL/DESIGN/DRAWING</b>											
5	NEN851	PROJECT	0	0	12	0	100	100	250	350	8
6	NGP801	GP					50	50		50	1
		<b>TOTAL</b>	<b>14</b>	<b>5</b>	<b>12</b>		<b>180</b>	<b>350</b>	<b>650</b>	<b>1000</b>	<b>24</b>

### LIST OF DEPARTMENTAL ELECTIVE IV

NEE041 EHVAC&DC TRANSMISSION  
 NEE042 POWER QUALITY  
 NEN043 IMAGE PROCESSING  
 NEN044 SATELLITE COMMUNICATION

### LIST OF OPEN ELECTIVE 2

NOE081 NON-CONVENTIONAL ENERGY RESOURCES  
 NOE082 NON LINEAR DYNAMIC SYSTEMS  
 NOE084 AUTOMATION & ROBOTICS  
 NOE085 DATABASE MANAGEMENT SYSTEM AND DATA MINING AND WAREHOUSING

  
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UTTAR PRADESH, LUCKNOW



## **Syllabus**

**3<sup>rd</sup> Year**

**[Effective from Session 2016-17]**

- 1. B.Tech. Electronics Engineering**
- 2. B.Tech. Electronics & Communication Engineering**
- 3. B.Tech. Electronics & Telecommunication Engineering**

  
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### SEMESTER-V

No.	Subject Code	Name of the Subject	Periods			Evaluation Scheme			Subject Total	Credit	
			L	T	P	Sessional Assessment		ESE			
						CT	TA				Total
<b>THEORY SUBJECTS</b>											
1	NEC 501R	Integrated Circuits	3	1	0	30	20	50	100	150	4
2	NEC 502	Principles of Communication	3	1	0	30	20	50	100	150	4
3	NEC 503	Microprocessors	3	1	0	30	20	50	100	150	4
4	NIC 501	Control System -1	3	1	0	30	20	50	100	150	4
5	NEC 504	Antenna and Wave Propagation	2	1	0	15	10	25	50	75	3
6	NHU501	Engineering Economics	2	0	0	15	10	25	50	75	2
<b>PRACTICAL/ DESIGN/ DRAWING</b>											
7	NEC 551R	Integrated Circuits Lab	0	0	2	10	10	20	30	50	1
8	NIC 551	Control System Lab	0	0	2	10	10	20	30	50	1
9	NEC 552	Communication Lab - 1	0	0	2	10	10	20	30	50	1
10	NEC 553	Microprocessors Lab	0	0	2	10	10	20	30	50	1
11	NGP 501	GP						50		50	
		<b>TOTAL</b>	16	5	8					1000	25

CT Class Test

AT Attendance

TA Tutorial Assignment

ESE End Semester Examination

L/T/P Lecture/ Tutorial/ Practical

  
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## SEMESTER-VI

No.	Subject Code	Name of the Subject	Periods			Evaluation Scheme			Subject Total	Credit	
			L	T	P	Sessional Assessment		ESE			
						CT	TA				Total
<b>THEORY SUBJECTS</b>											
1	NEC 601	Microwave Engineering	3	1	0	30	20	50	100	150	4
2	NEC 602	Digital Communication	3	1	0	30	20	50	100	150	4
3	NEC 603	Integrated Circuit Technology	3	1	0	30	20	50	100	150	4
4	NEC 0_	Departmental Elective - I	3	1	0	30	20	50	100	150	4
5	NEC 0_	Departmental Elective - II	2	1	0	15	10	25	50	75	3
6	NHU601	Industrial Management	2	0	0	15	10	25	50	75	2
<b>PRACTICAL/ DESIGN/ DRAWING</b>											
7	NEC 651	Antenna and Microwave Lab	0	0	2	10	10	20	30	50	1
8	NEC 652	Communication Lab - II	0	0	2	10	10	20	30	50	1
9	NEC 653	CAD of Electronics Lab	0	0	2	10	10	20	30	50	1
10	NEC 654R	Seminar	0	0	1	10	10	20	-	20	1
11	NEC 655	Microcontrollers for Embedded Systems Lab	0	0	1	6	6	12	18	30	1
12	NGP 601	GP						50		50	
		<b>TOTAL</b>	16	5	8					1000	26

### Departmental Elective –I

- |            |  |
|------------|--|
| 1. NEC011  | Digital Signal Processing              |
| 2. NEC 012 | Computer Architecture and Organization |
| 3. NEC 013 | Artificial Neural Network              |
| 4. NEC 014 | Advance Semiconductor Devices          |
| 5. NEC013R | Real Time Systems                      |

### Departmental Elective - II

- |             |                                      |
|-------------|--------------------------------------|
| 1. NEC 021  | Industrial Electronics               |
| 2. NEC 022R | Microcontroller for Embedded Systems |
| 3. NEC 023  | Analog Signal Processing             |
| 4. NEC 024R | Advance Digital Design using Verilog |

  
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**Study & Evaluation Scheme with Syllabus  
for**

**B.Tech. Second Year**

**Electronics Engineering / Electronics & Communication Engineering /  
Electronics & Telecommunication Engineering / Electronics &  
Instrumentation Engineering / Instrumentation & Control Engineering /  
Applied Electronics & Control Engineering / Biomedical Engineering**

**On**

**Choice Based Credit System  
(Effective from the Session: 2017-18)**

*P. Prasad*  
Director  
IMS Engineering College  
Ghaziabad

**2<sup>nd</sup> Year III-SEMESTER**

S. No.	Subject Code	Subject Name	L-T-P	ESE Marks	Sessional		Total	Credit
					CT	TA		
i.	ROE030 to 039/ RAS301	Science Based Open Elective/ Mathematics-III	3-1-0	70	20	10	100	4
2.	RVE301/ RAS302	Universal Human Values & Professional Ethics/ Environment & Ecology	3-0-0	70	20	10	100	3
3.	REE305	Network Analysis and Synthesis	3-0-0	70	20	10	100	3
4.	REC301	Digital Logic Design	3-0-0	70	20	10	100	3
5.	REC302	Electronic Devices and Circuits	3-1-0	70	20	10	100	4
6.	REC303	Signals & Systems	3-0-0	70	20	10	100	3
7.	REC351	Digital Logic Design Lab	0-0-2	50	30	20	100	1
8.	REC352	Electronic Devices and Circuits Lab	0-0-2	50	30	20	100	1
9.	REC353	Signals & Systems Lab	0-0-2	50	30	20	100	1
10.	REC354	Electronics Workshop & PCB Design Lab	0-0-2	50	30	20	100	1
11.	RME101*	Elements of Mechanical Engineering*	3-1-0	70	20	10	100*	--
12.	RCE151*	Computer Aided Engineering Graphics*	0-0-3	50	30	20	100*	--
Total							1000	24

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

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- b. ROE031/ROE041 Introduction to soft computing
- c. ROE032/ROE042 Nano Science
- d. ROE033/ROE043 Laser System and Application
- e. ROE034/ROE044 Space Science
- f. ROE035/ROE045 Polymer Science & Technology
- g. ROE036/ROE046 Nuclear Science
- h. ROE037/ROE047 Material Science
- i. ROE038/ROE048 Discrete Mathematics
- j. ROE039/ROE049 Applied Linear Algebra

  
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**2<sup>nd</sup> Year IV-SEMESTER**

S. No.	Subject Code	Subject Name	L-T-P	ESE Marks	Sessional		Total	Credit
					CT	TA		
1.	RAS401/ ROE040 to 049	Mathematics-III/ Science Based Open Elective	3-1-0	70	20	10	100	4
2.	RAS402/ RVE401	Environment & Ecology/ Universal Human Values & Professional Ethics	3-0-0	70	20	10	100	3
3.	REC401	Microprocessors & Microcontrollers	3-0-0	70	20	10	100	3
4.	REC402	Electromagnetic Field Theory	3-1-0	70	20	10	100	4
5.	REC403	Electronic Measurement & Instrumentation	3-0-0	70	20	10	100	3
6.	RCS406	Data Structure & Algorithms	3-0-0	70	20	10	100	3
7.	REC451	Microprocessors & Microcontrollers Lab	0-0-2	50	30	20	100	1
8.	REC452	Advanced Electronics System Lab	0-0-2	50	30	20	100	1
9.	REC453	Electronic Measurement & Instrumentation Lab	0-0-2	50	30	20	100	1
10.	RCS456	Data Structure & Algorithms Lab	0-0-2	50	30	20	100	1
11.	RME201*	Elements of Mechanical Engineering*	3-1-0	70	20	10	100*	--
12.	RCE251*	Computer Aided Engineering Graphics*	0-0-3	50	30	20	100*	--
Total							1000	24

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

**\*B.Tech. II<sup>nd</sup> year lateral entry students belonging to B.Sc. Stream, shall clear the subjects RCE151/RCE251 and RME101/201 of the first year Engineering Programme along with the second year subjects.**

**Science Based Open Electives:**

- a. ROE030/ROE040 Manufacturing Process
- b. ROE031/ROE041 Introduction to soft computing
- c. ROE032/ROE042 Nano Science
- d. ROE033/ROE043 Laser System and Application
- e. ROE034/ROE044 Space Science
- f. ROE035/ROE045 Polymer Science & Technology
- g. ROE036/ROE046 Nuclear Science
- h. ROE037/ROE047 Material Science
- i. ROE038/ROE048 Discrete Mathematics
- j. ROE039/ROE049 Applied Linear Algebra

  
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**AKTU, LUCKNOW, U.P**  
**Study and Evaluation Scheme B. Tech. in Electronics Engg/Electronics & Communication**  
**Engg/Electronics & Telecommunication Engg**  
**[Effective from the session 2016-17]**

**YEAR 4<sup>th</sup>, SEMESTER-VII**

S. No	Course Code	SUBJECT	PERIODS			Evaluation Scheme				Subject Total	Credit
						SESSIONAL EXAM.			ESE		
			L	T	P	CT	TA	Total			
<b>THEORY SUBJECTS</b>											
1.	NOE 07*	Open Elective-I**	3	1	0	30	20	50	100	150	4
2.	NEC 03*	Departmental Elective-III	3	1	0	30	20	50	100	150	4
3.	NEC 701	Optical Communication	3	1	0	30	20	50	100	150	4
4.	NEC 702B	Data Communication Networks	3	1	0	30	20	50	100	150	4
5.	NEC 703	VLSI Design	3	1	0	30	20	50	100	150	4
6.	AUC 001	*Human Values & Professional Ethics	2	0	0	15	10	25	50	75	-
<b>PRACTICAL/DESIGN/DRAWING</b>											
7.	NEC 751	Optical Communication & Networking Lab	0	0	2	-	20	20	30	50	1
8.	NEC 752A	Electronics Circuit Design	0	0	3	-	20	20	30	50	2
9.	NEC 753	Industrial Training Viva-Voce	0	0	2	-	50	50	-	50	1
10.	NEC 754	Project	0	0	2	-	50	50	-	50	1
11.	NGP 701	General Proficiency	-	-	-	-	-	50	-	50	1
		<b>Total</b>	<b>15</b>	<b>5</b>	<b>9</b>	<b>150</b>	<b>240</b>	<b>440</b>	<b>560</b>	<b>1000</b>	<b>26</b>

**\*\* Open Electives-I**

NOE-071 Entrepreneurship Development  
 NOE-072 Quality Management  
 NOE-073 Operation Research  
 NOE-074 Introduction to Biotechnology  
 NOE-075 Micro and smart systems

  
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**AKTU, LUCKNOW, U.P**  
**Study and Evaluation Scheme B. Tech. in Electronics Engg/Electronics & Communication**  
**Engg/Electronics & Telecommunication Engg**  
**[Effective from the session 2016-17]**

**YEAR 4<sup>th</sup>, SEMESTER-VIII**

S. No.	Course Code	SUBJECT	PERIODS			Evaluation Scheme				Subject Total	Credit
						SESSIONAL EXAM.			ESE		
			L	T	P	CT	TA	Total			
<b>THEORY SUBJECTS</b>											
1.	NOE 08*	Open Elective-II**	3	1	0	30	20	50	100	150	4
2.	NEC 04*	Departmental Elective-IV	3	1	0	30	20	50	100	150	4
3.	NEC 801	Wireless & Mobile Communication	3	1	0	30	20	50	100	150	4
4.	NEC 802	Optical Network	3	1	0	30	20	50	100	150	3
5.	AUC 001	*Human Values & Professional Ethics	2	0	0	15	10	25	50	75	-
<b>PRACTICAL/DESIGN/DRAWING</b>											
6.	NEC 851	Project	0	0	12	-	100	100	250	350	8
7.	NGP 801	General Proficiency	-	-	-	-	-	50	-	50	1
		<b>Total</b>	<b>12</b>	<b>4</b>	<b>12</b>	<b>120</b>	<b>180</b>	<b>350</b>	<b>650</b>	<b>1000</b>	<b>24</b>

**\*\* Open Electives-II**

NOE-081 Non Conventional Energy Resources  
 NOE-082 Nonlinear Dynamic system  
 NOE-083 Product Development  
 NOE-084 Automation and Robotics

  
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## LIST OF ELECTIVES:

### Elective – III NEC 03\* Departmental Elective III

1. NEC 031 Information Theory & Coding
2. NEC 032 Digital Image Processing
3. NEC 033 Voice Over IP
4. NEC 034 Filter Design
5. NEC 035 Applied Fuzzy Electronic Systems

### Elective – IV NEC 04\* Departmental Elective IV

1. NEC 041 Electronic Switching
2. NEC 042 Digital System Design using VHDL
3. NEC 043 Speech Processing
4. NEC 044 Advanced Display Technologies & Systems
5. NEC 045 Satellite & RADAR systems

  
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**Study & Evaluation Scheme with Syllabus**

**For**

**B.Tech. Second Year**

(Mechanical Engineering/ Production Engineering, Industrial & Production Engineering, Mechanical & Industrial Engineering, Manufacturing Technology, Automobile Engineering, Aeronautical Engineering)

**On**

**Choice Based Credit System**

**(Effective from the Session: 2017-18)**

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**2<sup>nd</sup> Year III-SEMESTER**

S. No.	Subject Code	Subject Name	L-T-P	Th/Lab ESE	Sessional		Total	Credit
					CT	TA		
1.	RAS301/ ROE031 to 036, 038, 039	Mathematics-III/ Science Based OE	3-1-0	70	20	10	100	4
2.	RVE301/ RAS302	Universal Human Values & Professional Ethics / Environment & Ecology	3-0-0	70	20	10	100	3
3.	RCE303	Fluid Mechanics	3-0-0	70	20	10	100	3
4.	RME301	Material Science	3-0-0	70	20	10	100	3
5.	RME302	Thermodynamics	3-1-0	70	20	10	100	4
6.	RME303	Mechanics of Solids	3-0-0	70	20	10	100	3
7.	RCE353	Fluid Mechanics Lab	0-0-2	50	30	20	100	1
8.	RME351	Material Science & Testing Lab	0-0-2	50	30	20	100	1
9.	RME352	Thermodynamics Lab	0-0-2	50	30	20	100	1
10.	RME353	Computer Aided Machine Drawing-I Lab	0-0-2	50	30	20	100	1
11.	RME101*	Elements of Mechanical Engineering*	3-1-0	70	20	10	100*	--
12.	RCE151*	Computer Aided Engineering Graphics*	0-0-3	50	30	20	100*	--
<b>TOTAL</b>							<b>1000</b>	<b>24</b>

CT: Class Test

TA: Teacher Assessment

L/T/P: Lecture/ Tutorial/ Practical

\*B.Tech. II<sup>nd</sup> year lateral entry students belonging to B.Sc. Stream, shall clear the subjects RCE151/RCE251 and RME101/201 of the first year Engineering Programme along with the second year subjects.

**Science Based Open Electives:**

- a. ROE031/ROE041 Introduction to soft computing
- b. ROE032/ROE042 Nano Science
- c. ROE033/ROE043 Laser System and Application
- d. ROE034/ROE044 Space Science
- e. ROE035/ROE045 Polymer Science & Technology
- f. ROE036/ROE046 Nuclear Science
- g. ROE038/ROE048 Discrete Mathematics
- h. ROE039/ROE049 Applied Linear Algebra

  
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**2<sup>nd</sup> Year IV-SEMESTER**

S. No.	Subject Code	Subject Name	L-T-P	ESE Marks	Sessional		Total	Credit
					CT	TA		
1.	ROE041 to 046, 048, 049/ RAS401	Science Based OE/ Mathematics-III	3-1-0	70	20	10	100	4
2.	RAS402/ RVE401	Environment & Ecology/ Universal Human Values & Professional Ethics	3-0-0	70	20	10	100	3
3.	REE409	Electrical Machines & Controls	3-0-0	70	20	10	100	3
4.	RME401	Measurement and Metrology	3-0-0	70	20	10	100	3
5.	RME402	Manufacturing Science & Technology-I	3-0-0	70	20	10	100	3
6.	RME403	Applied Thermodynamics	3-1-0	70	20	10	100	4
7.	REE459	Electrical Machines and Controls Lab	0-0-2	50	30	20	100	1
8.	RME451	Measurement and Metrology Lab	0-0-2	50	30	20	100	1
9.	RME452	Manufacturing Science & Technology-I Lab	0-0-2	50	30	20	100	1
10.	RME453	Computer Aided Machine Drawing-II Lab	0-0-2	50	30	20	100	1
11.	RME201*	Elements of Mechanical Engineering*	3-1-0	70	20	10	100*	--
12.	RCE251*	Computer Aided Engineering Graphics*	0-0-3	50	30	20	100*	--
<b>TOTAL</b>							<b>1000</b>	<b>24</b>

CT: Class Test

TA: Teacher Assessment

L/T/P: Lecture/ Tutorial/ Practical

\*B.Tech. II<sup>nd</sup> year lateral entry students belonging to B.Sc. Stream, shall clear the subjects RCE151/RCE251 and RME101/201 of the first year Engineering Programme along with the second year subjects.

NOTE: Practical summer training-1 of 4-weeks after IV semester or Minor fabrication project will be evaluated in VII semester.

**Science Based Open Electives:**

- a. ROE031/ROE041 Introduction to soft computing
- b. ROE032/ROE042 Nano Science
- c. ROE033/ROE043 Laser System and Application
- d. ROE034/ROE044 Space Science
- e. ROE035/ROE045 Polymer Science & Technology
- f. ROE036/ROE046 Nuclear Science
- g. ROE038/ROE048 Discrete Mathematics
- h. ROE039/ROE049 Applied Linear Algebra

  
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# U.P. TECHNICAL UNIVERSITY, LUCKNOW



## Syllabus

3<sup>rd</sup> Year

[Effective from session 2015-16]

1. B. Tech. Mechanical Engineering
2. B. Tech. Production Engineering
3. B. Tech. Industrial & Production Engineering
4. B. Tech. Mechanical & Industrial Engineering

  
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**U.P. TECHNICAL UNIVERSITY, LUCKNOW**  
**STUDY & EVALUATION SCHEME**  
**B. Tech. Mechanical Engineering**  
**[Effective from Session 20015-16]**  
**YEAR III, SEMESTER-V**

S. No.	Subject Code	Name of the Subject	Periods			Evaluation Scheme				Subject Total	Credit
			L	T	P	Sessional Assessment			ESE		
						CT	TA	Total			
<b>THEORY SUBJECT</b>											
1	NME-501	Machine Design-I	2	1	0	15	10	25	50	75	3
2	NME-502	Kinematics of Machines	3	1	0	30	20	50	100	150	4
3	NME-503	Manufacturing Science & Technology-II	3	1	0	30	20	50	100	150	4
4	NME-504	Heat & Mass Transfer	3	1	0	30	20	50	100	150	4
5	NME-505	I.C. Engines & Compressors	3	1	0	30	20	50	100	150	4
6	NHU-501	Engineering Economics	2	0	0	15	10	25	50	75	2
<b>PRACTICAL/DESIGN/DRAWING</b>											
7	NME-551	Machine Design-I Lab	0	0	2	10	10	20	30	50	1
8	NME-552	Seminar	0	0	2	--	--	50	--	50	1
9	NME-553	Manufacturing Technology-II Lab	0	0	3	10	10	20	30	50	1
10	NME-554	Heat & Mass Transfer Lab	0	0	3	10	10	20	30	50	1
11	NGP-501	General Proficiency	--	--	--	--	--	50	--	50	
		<b>TOTAL</b>	<b>16</b>	<b>5</b>	<b>10</b>					<b>1000</b>	<b>25</b>



**U.P. TECHNICAL UNIVERSITY, LUCKNOW**  
**STUDY & EVALUATION SCHEME**  
**B. Tech. Mechanical Engineering**  
**[Effective from Session 2015-16]**  
**YEAR III, SEMESTER-VI**

S. No.	Subject Code	Name of the Subject	Periods			Evaluation Scheme			Subject Total	Credit	
			L	T	P	Sessional Assessment		ESE			
						CT	TA				Total
<b>THEORY SUBJECT</b>											
1	NME-602	Machine Design-II	3	1	0	30	20	50	100	150	4
2	NME-603	Dynamics of Machines	3	1	0	30	20	50	100	150	4
3	NME-604	Refrigeration & Air-conditioning	3	1	0	30	20	50	100	150	4
4	NME-011 to NME-014	Departmental Elective - I	3	1	0	30	20	50	100	150	4
5	NME-021 to NME-024	Departmental Elective - II	2	1	0	15	10	25	50	75	3
6	NHU-601	Industrial Management	2	0	0	15	10	25	50	75	2
<b>PRACTICAL/DESIGN/DRAWING</b>											
7	NME-651	Fluid Machinery Lab	0	0	3	10	10	20	30	50	1
8	NME-652	Machine Design-II Lab	0	0	2	10	10	20	30	50	1
9	NME-653	Theory of Machines Lab	0	0	2	10	10	20	30	50	1
10	NME-654	Refrigeration & Air Conditioning Lab	0	0	3	10	10	20	30	50	1
11	NGP-601	General Proficiency	--	--	--	--	--	50	--	50	
		<b>TOTAL</b>	<b>16</b>	<b>5</b>	<b>10</b>					<b>1000</b>	<b>25</b>

Note- 4 to 6 Weeks Industrial Training-II after VI semester also to be evaluated in VII semester

**Departmental Electives:**

**Department Elective - I**

1. NME-011 Engineering Optimization
2. NME-012 Finite Element Methods
3. NME-013 Mechanical Vibrations
4. NME-014 Mechatronics

**Department Elective - II**

1. NME-021 Fluid Machinery
2. NME-022 Product Design & Development
3. NME-023 Reliability Engineering
4. NME-024 Unconventional Manufacturing Processes



**U.P. TECHNICAL UNIVERSITY, LUCKNOW**  
**STUDY & EVALUATION SCHEME**

B. Tech. Mechanical Engineering / Production Engineering / Industrial & Production Engineering / Mechanical  
& Industrial Engineering  
[Effective from Session 20016-17]

YEAR IV, SEMESTER-VII

S. No.	Subject Code	Name of the Subject	Periods			Evaluation Scheme			Subject Total	Credit	
			L	T	P	Sessional Assessment		ESE			
						CT	TA				Total
<b>THEORY SUBJECT</b>											
1	NOE-071 to 074	Open Elective -I	3	1	0	30	20	50	100	150	4
2	NME-701	CAD	3	1	0	30	20	50	100	150	4
3	NME-702	Automobile Engineering	3	1	0	30	20	50	100	150	4
4	NME-031 to NME-034	Departmental Elective – III	3	1	0	30	20	50	100	150	4
5	NME-041 to NME-044	Departmental Elective – IV	3	1	0	30	20	50	100	150	4
<b>PRACTICAL/DESIGN/DRAWING</b>											
5	NME-751	CAD/CAM Lab	0	0	2	10	10	20	30	50	1
6	NME-752	I. C. Engine and Automobile Lab.	0	0	2	10	10	20	30	50	1
7	NME-753	INDUSTRIAL TRG.	0	0	2	-	50	50	-	50	1
8	NME-754	PROJECT	0	0	3	-	50	50	-	50	2
	GP-701	GP	-	-	-	-	-	50	-	50	-
		<b>TOTAL</b>	<b>15</b>	<b>5</b>	<b>9</b>					<b>1000</b>	<b>25</b>

**Note-** Practical Training-1 & 2 (4-weeks each) done after 4<sup>th</sup> & 6<sup>th</sup> Semesters would be evaluated in 7<sup>th</sup> semester through report and viva voce etc.  
Project should be initiated in 7<sup>th</sup> semester beginning (End Semester Examination to be conducted for evaluation for 7<sup>th</sup> sem), and should be complete by the end of 8<sup>th</sup> semester with good Report and power-point Presentation etc.

**Open Electives – I**

- NOE-071 Entrepreneurship Development
- NOE-072 Quality Management
- NOE-073 Operations Research
- NOE-074 Introduction to Biotechnology

**Departmental Elective III**

- NME-031 Computer Aided Manufacturing
- NME-032 Project Management
- NME-033 Computational Fluid Dynamics
- NME-034 Composite materials

**Departmental Elective IV**

- NME-041 Total Quality Management
- NME-042 Thermal Turbo Machines
- NME-043 Mechanical System Design
- NME-044 Automation and Robotics

  
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**U.P. TECHNICAL UNIVERSITY, LUCKNOW**  
**STUDY & EVALUATION SCHEME**

B. Tech. Mechanical Engineering  
[Effective from Session 2016-17]

YEAR IV, SEMESTER-VIII

S. No.	Subject Code	Name of the Subject	Periods			Evaluation Scheme			Subject Total	Credit	
			L	T	P	Sessional Assessment					ESE
						CT	TA	Total			
<b>THEORY SUBJECT</b>											
1	NOE-081 to 084	Open Elective -II	3	1	0	30	20	50	100	150	4
2	NME-801	Power Plant Engineering	3	1	0	30	20	50	100	150	4
3	NME-051 to NME-055	Departmental Elective -V	3	1	0	30	20	50	100	150	4
4	NME-061 to NME-065	Departmental Elective -VI	3	1	0	30	20	50	100	150	4
<b>PRACTICAL/DESIGN/DRAWING</b>											
5	NME-851	SEMINAR	0	0	3	-	50	50	-	50	2
6	NME-852	PROJECT	0	0	12	-	100	100	200	300	7
7	GP-801	GP	-	-	-	-	-	50	-	50	-
		<b>TOTAL</b>	<b>12</b>	<b>4</b>	<b>15</b>					<b>1000</b>	<b>25</b>

**Open Electives – II**

NOE-081 Non Conventional Energy Resources  
NOE-082 Nonlinear Dynamic Systems  
NOE-083 Product Development  
NOE-084 Automation and Robotics

**Departmental Elective V**

NME-051 Operations Research  
NME-052 Design of Thermal Systems  
NME-053 Advance Synthesis of machines  
NME-054 Industrial Automation  
NME-055 Advance Welding Technology

**Departmental Elective VI**

NME-061 Experimental Stress Analysis  
NME-062 Plant Layout and Material Handling  
NME-063 Additive Manufacturing  
NME-064 Computer Aided Process Planning  
NME-065 Non Destructive Testing.

  
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**Study & Evaluation Scheme with Syllabus  
for  
B.Tech. Second Year  
Civil Engineering  
On  
Choice Based Credit System  
(Effective from the Session: 2017-18)**

*Prabhu*  
Director  
IMS Engineering College  
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**2<sup>nd</sup> Year III-SEMESTER**

S. No.	Subject Code	Subject Name	L-T-P	ESE Marks	Sessional		Total	Credit
					CT	TA		
1.	ROE030 to 039/ RAS301	Science Based Open Elective/ Mathematics-III	3-1-0	70	20	10	100	4
2.	RVE301/ RAS302	Universal Human Values & Professional Ethics/ Environment & Ecology	3-0-0	70	20	10	100	3
3.	RME303	Mechanics of Solids	3-0-0	70	20	10	100	3
4.	RCE301	Building Materials & Construction	3-1-0	70	20	10	100	4
5.	RCE302	Surveying	3-0-0	70	20	10	100	3
6.	RCE303	Fluid Mechanics	3-0-0	70	20	10	100	3
7.	RCE351	Building Materials Lab	0-0-2	50	30	20	100	1
8.	RCE352	Surveying Lab	0-0-2	50	30	20	100	1
9.	RCE353	Fluid Mechanics Lab	0-0-2	50	30	20	100	1
10.	RCE354	Computer Based Statistical & Numerical Techniques Lab	0-0-2	50	30	20	100	1
11.	RME101*	Elements of Mechanical Engineering*	3-1-0	70	20	10	100*	--
12.	RCE151*	Computer Aided Engineering Graphics*	0-0-3	50	30	20	100*	--
Total							1000	24

CT: Class Test

TA: Teacher Assessment

L/T/P: Lecture/ Tutorial/ Practical

**\*B.Tech. II<sup>nd</sup> year lateral entry students belonging to B.Sc. Stream, shall clear the subjects RCE151/RCE251 and RME101/201 of the first year Engineering Programme along with the second year subjects.**

**Science Based Open Electives:**

- a. ROE030/ROE040 Manufacturing Process
- b. ROE031/ROE041 Introduction to soft computing
- c. ROE032/ROE042 Nano Science
- d. ROE033/ROE043 Laser System and Application
- e. ROE034/ROE044 Space Science
- f. ROE035/ROE045 Polymer Science & Technology
- g. ROE036/ROE046 Nuclear Science
- h. ROE037/ROE047 Material Science
- i. ROE038/ROE048 Discrete Mathematics
- j. ROE039/ROE049 Applied Linear Algebra

  
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**2<sup>nd</sup> Year IV-SEMESTER**

S. No.	Subject Code	Subject Name	L-T-P	ESE Marks	Sessional		Total	Credit
					CT	TA		
1.	RAS401/ ROE040 to 049	Mathematics-III/ Science Based Open Elective	3-1-0	70	20	10	100	4
2.	RAS402/ RVE401	Environment & Ecology/ Universal Human Values & Professional Ethics	3-0-0	70	20	10	100	3
3.	RCS405	Data Structures	3-0-0	70	20	10	100	3
4.	RCE401	Hydraulics & Hydraulic Machines	3-0-0	70	20	10	100	3
5.	RCE402	Geoinformatics	3-0-0	70	20	10	100	3
6.	RCE403	Structural Analysis	3-1-0	70	20	10	100	4
7.	RCE452	Geoinformatics Lab	0-0-2	50	30	20	100	1
8.	RCE453	Structural Analysis Lab	0-0-2	50	30	20	100	1
9.	RCE454	Building Planning & Drawing Lab	0-0-2	50	30	20	100	1
10.	RCE455	Hydraulics & Machine Lab	0-0-2	50	30	20	100	1
11.	RME201*	Elements of Mechanical Engineering*	3-1-0	70	20	10	100*	--
12.	RCE251*	Computer Aided Engineering Graphics*	0-0-3	50	30	20	100*	--
Total							1000	24

CT: Class Test

TA: Teacher Assessment

L/T/P: Lecture/ Tutorial/ Practical

**\*B.Tech. II<sup>nd</sup> year lateral entry students belonging to B.Sc. Stream, shall clear the subjects RCE151/RCE251 and RME101/201 of the first year Engineering Programme along with the second year subjects.**

**Industrial Training:**

Students will go for Industrial Training of 8-10 weeks in total in two parts (Industrial Training-1 & Industrial Training-2) which is to be evaluated in VII semester after submission of separate training report for each part.

**Industrial Training-1:** Students will go to Industrial Training-1 of 4 weeks after IV semester which will be evaluated in VII semester.

**Science Based Open Electives:**

- ROE030/ROE040 Manufacturing Process
- ROE031/ROE041 Introduction to soft computing
- ROE032/ROE042 Nano Science
- ROE033/ROE043 Laser System and Application
- ROE034/ROE044 Space Science
- ROE035/ROE045 Polymer Science & Technology
- ROE036/ROE046 Nuclear Science
- ROE037/ROE047 Material Science
- ROE038/ROE048 Discrete Mathematics
- ROE039/ROE049 Applied Linear Algebra

  
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**U. P. TECHNICAL UNIVERSITY,  
IET CAMPUS, SITAPUR ROAD, LUCKNOW- 226 021**



**COURSE STRUCTURE AND SYLLABUS  
(EFFECTIVE FROM Session: 2015-16)**

**B.Tech. (Civil Engineering)**

**Third Year (5th & 6th Semester)**

JULY 10, 2015

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U.P. TECHNICAL UNIVERSITY, LUCKNOW  
STUDY & EVALUATION SCHEME  
B. Tech. Civil Engineering  
(Effective from the session – 2015-16)

Third Year, 5th Semester

S.No	Course Code	Subject	Period			Evaluation Scheme				Subject Total	Credit
						Sessional Exam			ESE		
			L	T	P	CT	TA	Total			
<b>THEORY SUBJECTS</b>											
1	NHU 501	Engineering Economics	2	0	0	15	10	25	50	75	2
2	NCE 501	Geotechnical Engineering	3	1	0	30	20	50	100	150	4
3	NCE 502	Transportation Engineering-1	3	1	0	30	20	50	100	150	4
4	NCE 503	Environmental Engineering-1	2	1	0	15	10	25	50	75	3
5	NCE 504	Structural Analysis-2	3	1	0	30	20	50	100	150	4
6	NCE 505	Design of Concrete Structure-1	3	1	0	30	20	50	100	150	4
<b>PRACTICAL/DRAWING/DESIGN</b>											
7	NCE 551	Geotechnical Engineering Lab	-	-	3	10	10	20	30	50	1
8	NCE 552	Transportation Engineering Lab	-	-	3	10	10	20	30	50	1
9	NCE 553	CAD Lab-1	-	-	3	10	10	20	30	50	1
10	NCE 554	Estimation Costing & Valuation			3	10	10	20	30	50	1
11	NGP 501	General Proficiency	-	-	-	-	-	50	-	50	
		<b>TOTAL</b>	<b>16</b>	<b>5</b>	<b>12</b>					<b>1000</b>	<b>25</b>

U.P. TECHNICAL UNIVERSITY, LUCKNOW  
STUDY & EVALUATION SCHEME  
B. Tech. Civil Engineering  
(Effective from the session – 2015-16)

Third Year, 6th Semester

S. No	Course Code	Subject	Period			Evaluation Scheme				Subject Total	Credit
						Sessional Exam			ESE		
			L	T	P	CT	TA	Total			
<b>THEORY SUBJECTS</b>											
1	NHU 601	Industrial Management	2	0	0	15	10	25	50	75	2
2	NCE 601	Design of Concrete Structure-2	3	1	0	30	20	50	100	150	4
3	NCE 602	Environmental Engineering-2	3	1	0	30	20	50	100	150	4
4	NCE 603	Construction Technology & Management	3	1	0	30	20	50	100	150	4
5	NCE 011 -014	Departmental Elective-1	3	1	0	30	20	50	100	150	4
6	NCE 021-024	Departmental Elective-2	2	1	0	15	10	25	50	75	3
<b>PRACTICAL/DRAWING/DESIGN</b>											
7	NCE 651	Structural Detailing Lab	0	0	3	10	10	20	30	50	1
8	NCE 652	Environmental Engineering Lab	0	0	3	10	10	20	30	50	1
9	NCE 653	CAD Lab-2	0	0	3	10	10	20	30	50	1
10	NCE 654	Survey Camp*	0	0	0	0	0	50		50	1
11	NGP 601	General Proficiency	0	0	0	0	0	50	-	50	
		<b>TOTAL</b>	<b>16</b>	<b>5</b>	<b>9</b>					<b>1000</b>	<b>25</b>

Note: \*The teaching load of survey camp will be counted as equivalent to 0-0-3.

Departmental Elective -1 (Full Unit Course with Credit: 4)

Sl.No.	Code and Course
5 (A)	NCE 011 – Advanced Foundation Design
5 (B)	NCE 012 – Matrix Analysis of Structures
5 (C)	NCE 013 – Environmental Management for Industries
5 (D)	NCE 014 – Principals of Town Planning and Architecture

Departmental Elective – 2 (Half Unit Course with Credit: 3)

Sl.No.	Code and Course
6 (A)	NCE 021 – Advanced Concrete Design
6 (B)	NCE 022 – Earth and Earth Retaining Structure
6 (C)	NCE 023 – Transportation System and Planning
6 (D)	NCE 024 – Rural Water supply and Sanitation



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LUCKNOW**



**Syllabus**

**4<sup>th</sup> Year**

**[Effective from session 2016-17]**

**B. Tech. Civil Engineering**

*Prakash*  
Director  
IMS Engineering College  
Ghaziabad

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

Study & Evaluation Scheme

B Tech Civil Engineering

Effective from session 2016-17

Final Year, VII Semester

S No	Course Code	SUBJECT	PERIODS			Evaluation Scheme			Subject Total	Credit	
			L	T	P	Sessional Exam		ESE			
						CT	TA				Total
THEORY SUBJECT											
1	NOE071- NOE074	Open Elective – I	3	1	0	30	20	50	100	150	4
2	NCE031- NCE035	Department Elective-III	3	1	0	30	20	50	100	150	4
3	NCE041- NCE044	Department Elective-IV	3	1	0	30	20	50	100	150	4
4	NCE701	Design of Steel Structures	3	1	0	30	20	50	100	150	4
5	NCE702	Water Resources Engg	3	1	0	30	20	50	100	150	4
PRACTICAL / DESIGN / DRAWING											
6	NCE751	Seminar	0	0	4		-	50	-	50	1
7	NCE752	Industrial Training**					-	50	-	50	1
8	NCE753	Project#	0	0	4		-	100	-	100	3
9	NGP 701	General Proficiency	-	-	-	-	-	50	-	50	1
		Total	15	5	8					1000	26

\*\* 4 weeks Industrial Training after VI semester to be evaluated in VII semester.

# Project should be initiated in VII semester beginning and should be completed by the end of VIII semester.

Departmental Elective-3 (Full Unit Course with Credit: 4)

S. No.	Code and Course
2 (A)	NCE 031 - Bridge Engineering
2 (B)	NCE 032 - Finite Element Methods
2(C)	NCE 033 - Environmental Geo-technology
2(D)	NCE 034 - Industrial Pollution Control & Env. Audit
2 (E)	NCE 035 – Engineering Hydrology

Departmental Elective-4 (Full Unit Course with Credit: 4)

S. No.	Code and Course
3 (A)	NCE 041 - Precast and Modular Construction Practices
3 (B)	NCE 042 - Plastic Analysis of Structures
3 (C)	NCE 043 - Open Channel Flow
3 (D)	NCE 044 – Tunnel Engineering

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Study & Evaluation Scheme

B Tech Civil Engineering

Effective from session 2016-17

Final Year, VIII Semester

S No	Course Code	SUBJECT	PERIODS			Evaluation Scheme			Subject Total	Credit	
			L	T	P	Sessional Exam		ESE			
						CT	TA				Total
THEORY SUBJECT											
1	NOE081- NOE084	Open Elective – II	3	1	0	30	20	50	100	150	4
2	NCE051- NCE054	Departmental Elective-V	3	1	0	30	20	50	100	150	4
3	NCE061- NCE064	Departmental Elective-VI	3	1	0	30	20	50	100	150	4
4	NCE801	Transportation Engineering -II	3	1	0	30	20	50	100	150	3
PRACTICAL / DESIGN / DRAWING											
5	NCE851	Project	0	0	12		100	100	250	350	8
6	NGP 801	General Proficiency	-	-	-	-	-	50	-	50	1
		Total	12	4	12					1000	24

Departmental Elective-5 (Full Unit Course with Credit: 4)

S. No.	Code and Course
2 (A)	NCE 051 - Computer Aided Design
2 (B)	NCE 052 - Analysis and Design of Hydraulic Structures
2 (C)	NCE 053 - Water Resources Systems
2 (D)	NCE 054 - Machine Foundation Design

Departmental Elective-6 (Full Unit Course with Credit: 4)

S. No.	Code and Course
3 (A)	NCE061 - Ground Improvement Techniques
3 (B)	NCE 062 - River Engineering
3 (C)	NCE 063 – Groundwater Management
3 (D)	NCE 064 - Earthquake Resistant Design of Structures

  
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## List of Open Electives for B. Tech. Courses

### OPEN ELECTIVE-I

NOE -071	Entrepreneurship Development
NOE-072	Quality Management
NOE-073	Operations Research
NOE-074	Introduction to Biotechnology

### OPEN ELECTIVE-II

NOE-081	Non Conventional Energy Resources
NOE-082	Nonlinear Dynamic Systems
NOE-083	Product Development
NOE-084	Automation & Robotics

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**Syllabus for**

**B.Tech. Biotechnology  
of  
Fourth Year**

**(Effective from the Session: 2016-17)**

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

## LUCKNOW

### Study and Evaluation Scheme B.TECH. BIO-TECHNOLOGY (Effective from the session: 2016-17)

4<sup>th</sup> Year, Semester-VII

S. No.	Subject Code	Name of Subject	Periods			Evaluation Scheme			Subject Total	Credit	
			L	T	P	Sessional Assessment					ESE
						CT	TA	Total			
<b>THEORY SUBJECT</b>											
1		Open Elective-I	3	1	0	30	20	50	100	150	4
2	NBT701	Bioseperation & DSP	3	1	0	30	20	50	100	150	4
3	NBT702	Bioethics, Biosafety & IPR	3	1	0	30	20	50	100	150	4
4	NBT031 to 033	Departmental Elective-III	3	1	0	30	20	50	100	150	4
5	NBT041 to 043	Departmental Elective-IV	2	1	0	15	10	25	50	75	2
<b>PRACTICAL/DESIGN/DRAWING</b>											
6	NBT751	Bioseperation & DSP Lab	0	0	2	10	10	20	30	50	1
7	NBT752	Industrial Training	0	0	3		75	75		75	2
8	NBT753	Project	0	0	8		50	50	100	150	4
9	NGP701	GP						50		50	
		<b>TOTAL</b>	<b>14</b>	<b>4</b>	<b>13</b>					<b>1000</b>	<b>25</b>

L: Lecture T: Tutorial P: Practical/Project CT: Class Test TA: Teacher's Assessment, ESE: End Semester Examination

TA = 10 (5 for teachers assessment plus 5 for attendance)

TA = 20 (10 for teachers assessment plus 10 for attendance)

ESE (Practical) = 30 (10 marks for practical exam. 10 marks viva. 4 marks for lab records and 6 marks for quiz)

*Prasad*  
Director  
IMS Engineering College  
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# DR. A.P.J. ABDUL KALAM TECHNICAL UNIVERSITY LUCKNOW

## Study and Evaluation Scheme B.TECH. BIO-TECHNOLOGY (Effective from the session: 2016-17)

4<sup>th</sup> Year, Semester-VIII

S. No.	Subject Code	Name of Subject	Periods			Evaluation Scheme			Subject Total	Credit	
			L	T	P	Sessional Assessment					ESE
						CT	TA	Total			
<b>THEORY SUBJECT</b>											
1		Open Elective-II	3	1	0	30	20	50	100	150	4
2	NBT801	Animal Biotechnology	3	1	0	30	20	50	100	150	4
3	NBT051 to 053	Departmental Elective-V	3	1	0	30	20	50	100	150	4
4	NBT061 to 063	Departmental Elective-VI	3	1	0	30	20	50	100	150	4
<b>PRACTICAL/DESIGN/DRAWING</b>											
5	NBT851	Seminar	0	0	3		100	100		100	2
6	NBT852	Project			12		100	100	150	250	7
7	NGP801	GP						50		50	
		<b>TOTAL</b>	<b>12</b>	<b>4</b>	<b>15</b>					<b>1000</b>	<b>25</b>

L: Lecture T: Tutorial P: Practical/Project CT: Class Test TA: Teacher's Assessment, ESE: End Semester Examination

TA = 10 (5 for teachers assessment plus 5 for attendance)

TA = 20 (10 for teachers assessment plus 10 for attendance)

ESE (Practical) = 30 (10 marks for practical exam. 10 marks viva. 4 marks for lab records and 6 marks for quiz)

\* Human Values & Professional Ethics will be offered as compulsory Audit Course for which passing marks are 40% in theory & 50% in aggregate. Student will be required to audit it within the period of their study. There will not be carry over facility for this course and a failed student will be required to repeat this course.

  
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## DEPARTMENTAL ELECTIVES

### Elective-III:

NBT031: Food Biotechnology

NBT032: Structural Biology

NBT033: Waste Treatment & Management

### Elective-IV:

NBT041: Agriculture Biotechnology

NBT042: Applications of Natural Products

NBT043: Forensic Diagnosis

### Elective-V:

NBT051: Fundamentals of Steam Cell Technology

NBT052: Biomedical Instrumentation

NBT053: Industrial Biotechnology

### Elective-VI:

NBT061: Entrepreneurship in Biotechnology

NBT062: Biomaterials

NBT063: Metabolic Engineering

  
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**Study & Evaluation Scheme with Syllabus  
for  
B.Tech. Second Year  
Biotechnology  
On  
Choice Based Credit System  
(Effective from the Session: 2017-18)**

*P. S. Chandra*  
Director  
IMS Engineering College  
Ghaziabad

**2<sup>nd</sup> Year III-SEMESTER**

S. No.	Subject Code	Subject Name	L-T-P	FSE Marks	Sessional		Total	Credit
					CT	TA		
1.	ROE030 to 039/ RAS303	Science Based Open Elective/ Elementary Mathematics-III	3-1-0	70	20	10	100	4
2.	RVE301/ RAS302	Universal Human Values & Professional Ethics/ Environment & Ecology	3-0-0	70	20	10	100	3
3.	RCE309	Fluid Mechanics for Biotechnology	3-0-0	70	20	10	100	3
4.	RBT301	Analytical Techniques in Biotechnology	3-0-0	70	20	10	100	3
5.	RBT302	Microbiology	3-0-0	70	20	10	100	3
6.	RBT303	Biochemistry	3-1-0	70	20	10	100	4
7.	RCE359	Fluid Mechanics for Biotechnology Lab	0-0-2	50	30	20	100	1
8.	RBT351	Analytical Techniques in Biotechnology Lab	0-0-2	50	30	20	100	1
9.	RBT352	Microbiology Lab	0-0-2	50	30	20	100	1
10.	RBT353	Biochemistry Lab	0-0-2	50	30	20	100	1
11.	RME101*	Elements of Mechanical Engineering*	3-1-0	70	20	10	100*	--
12.	RCE151*	Computer Aided Engineering Graphics*	0-0-3	50	30	20	100*	--
Total							1000	24

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

**\*B.Tech. II<sup>nd</sup> year lateral entry students belonging to B.Sc. Stream, shall clear the subjects RCE151/RCE251 and RME101/201 of the first year Engineering Programme along with the second year subjects.**

**Science Based Open Electives:**

- a. ROE030/ROE040 Manufacturing Process
- b. ROE031/ROE041 Introduction to soft computing
- c. ROE032/ROE042 Nano Science
- d. ROE033/ROE043 Laser System and Application
- e. ROE034/ROE044 Space Science
- f. ROE035/ROE045 Polymer Science & Technology
- g. ROE036/ROE046 Nuclear Science
- h. ROE037/ROE047 Material Science
- i. ROE038/ROE048 Discrete Mathematics
- j. ROE039/ROE049 Applied Linear Algebra

  
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**2<sup>nd</sup> Year IV-SEMESTER**

S. No.	Subject Code	Subject Name	L-T-P	ESE Marks	Sessional		Total	Credit
					CT	TA		
1.	RAS403/ ROE040 to 049	Elementary Mathematics-III/ Science Based Open Elective	3-1-0	70	20	10	100	4
2.	RAS402/ RVE401	Environment & Ecology/ Universal Human Values & Professional Ethics	3-0-0	70	20	10	100	3
3.	RCH406	Heat & Mass Transfer	3-0-0	70	20	10	100	3
4.	RBT401	Genetics & Molecular Biology	3-0-0	70	20	10	100	3
5.	RBT402	Immunology	3-0-0	70	20	10	100	3
6.	RBT403	Enzyme Engineering	3-1-0	70	20	10	100	4
7.	RCH454	Heat & Mass Transfer Lab	0-0-2	50	30	20	100	1
8.	RBT451	Genetics & Molecular Biology Lab	0-0-2	50	30	20	100	1
9.	RBT452	Immunology Lab	0-0-2	50	30	20	100	1
10.	RBT453	Enzyme Engineering Lab	0-0-2	50	30	20	100	1
11.	RME201*	Elements of Mechanical Engineering*	3-1-0	70	20	10	100*	--
12.	RCE251*	Computer Aided Engineering Graphics*	0-0-3	50	30	20	100*	--
Total							1000	24

CT: Class Test

TA: Teacher Assessment

L/T/P: Lecture/ Tutorial/ Practical

**\*B.Tech. II<sup>nd</sup> year lateral entry students belonging to B.Sc. Stream, shall clear the subjects RCE151/RCE251 and RME101/201 of the first year Engineering Programme along with the second year subjects.**

**Science Based Open Electives:**

- ROE030/ROE040 Manufacturing Process
- ROE031/ROE041 Introduction to soft computing
- ROE032/ROE042 Nano Science
- ROE033/ROE043 Laser System and Application
- ROE034/ROE044 Space Science
- ROE035/ROE045 Polymer Science & Technology
- ROE036/ROE046 Nuclear Science
- ROE037/ROE047 Material Science
- ROE038/ROE048 Discrete Mathematics
- ROE039/ROE049 Applied Linear Algebra

  
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**UTTAR PRADESH TECHNICAL UNIVERSITY**

**LUCKNOW**



**Syllabus**

**for**

**B.Tech. Biotechnology  
of  
Third Year**

**(Effective from the Session: 2015-16)**

*P. Prakash*  
Director  
IMS Engineering College  
Ghaziabad

# U.P. TECHNICAL UNIVERSITY, LUCKNOW

## Study and Evaluation Scheme B.TECH. BIOTECHNOLOGY (Effective from the session: 2015-16)

3<sup>rd</sup> Year, Semester-V

S. No.	Subject Code	Name of Subject	Periods			Evaluation Scheme			Subject Total	Credit	
			L	T	P	Sessional Assessment		ESE			
						CT	TA				Total
<b>THEORY SUBJECT</b>											
1	NBT-501	Genetic Engineering	3	1	0	30	20	50	100	150	4
2	NBT-502	Bioinformatics-I	3	1	0	30	20	50	100	150	4
3	NBT-503	Bioprocess Engineering	3	1	0	30	20	50	100	150	4
4	NBT-504	Plant Biotechnology	3	1	0	30	20	50	100	150	4
5	NBT-505	Modern Analytical Techniques	2	1	0	15	10	25	50	75	3
6	NHU-501	Engineering Economics	2	0	0	15	10	25	50	75	2
<b>PRACTICAL/DESIGN/DRAWING</b>											
7	NBT-551	Genetic Engineering Lab	0	0	3	10	10	20	30	50	1
8	NBT-552	Bioinformatics-I Lab	0	0	2	10	10	20	30	50	1
9	NBT-553	Bioprocess Engineering Lab	0	0	3	10	10	20	30	50	1
10	NBT-554	Plant Biotechnology Lab	0	0	2	10	10	20	30	50	1
11	NGP-501	GP						50		50	
		<b>TOTAL</b>	<b>16</b>	<b>5</b>	<b>10</b>					<b>1000</b>	<b>25</b>

L: Lecture T: Tutorial P: Practical/Project CT: Class Test TA: Teacher's Assessment, ESE: End Semester Examination

TA = 10 (5 for teachers assessment plus 5 for attendance)

TA = 20 (10 for teachers assessment plus 10 for attendance)

ESE (Practical) = 30 (10 marks for practical exam, 10 marks viva, 4 marks for lab records and 6 marks for quiz)

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# U.P. TECHNICAL UNIVERSITY, LUCKNOW

## Study and Evaluation Scheme B.TECH. BIOTECHNOLOGY

(Effective from the session: 2015-16)

3<sup>rd</sup> Year, Semester-VI.

S. No.	Subject Code	Name of Subject	Periods			Evaluation Scheme			Subject Total	Credit	
			L	T	P	Sessional Assessment		ESE			
						CT	TA				Total
<b>THEORY SUBJECT</b>											
1	NBT-601	Fermentation Biotechnology	3	1	0	30	20	50	100	150	4
2	NBT-602	Environmental Biotechnology	3	1	0	30	20	50	100	150	4
3	NBT-603	Bioinformatics-II	3	1	0	30	20	50	100	150	4
4	NBT-011/NBT-012/NBT-013	Departmental Elective-I	3	1	0	30	20	50	100	150	4
5	NBT-021/NBT-022/NBT-023	Departmental Elective-II	2	1	0	15	10	25	50	75	3
6	NHU-601	Industrial Management	2	0	0	15	10	25	50	75	2
<b>PRACTICAL/DESIGN/DRAWING</b>											
7	NBT-651	Fermentation Biotechnology Lab	0	0	3	10	10	20	30	50	1
8	NBT-652	Environmental Biotechnology Lab	0	0	2	10	10	20	30	50	1
9	NBT-653	Bioinformatics-II Lab	0	0	2	10	10	20	30	50	1
10	NBT-654	Seminar	0	0	3		50	50		50	1
11	NGP-601	GP						50		50	
		<b>TOTAL</b>	<b>16</b>	<b>5</b>	<b>10</b>					<b>1000</b>	<b>25</b>

L: Lecture T: Tutorial P: Practical/Project CT: Class Test TA: Teacher's Assessment, ESE: End Semester Examination

TA = 10 (5 for teachers assessment plus 5 for attendance)

TA = 20 (10 for teachers assessment plus 10 for attendance)

ESE (Practical) = 30 (10 marks for practical exam. 10 marks viva. 4 marks for lab records and 6 marks for quiz)

2/24

  
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**Dr.A.P.J.Abdulkalam Technical University, UttarPardesh,Lucknow**  
 (Formerly Uttar Pradesh Technical University)  
**STUDY EVALUATION SCHEME**  
**B. TECH. COMPUTER SCIENCE & ENGINEERING**  
**YEAR forth, SEMESTER –VII**  
 (Effective from the session: 2016-17)

S.No.	Subject Code	Subject	Period	Evaluation Scheme				Total	Credit
				Sessional			Exam		
				CT	TA	Total			
1		Open Elective I	3-1-0	30	20	50	100	150	4
2	NCS-701	Distributed System	3-1-0	30	20	50	100	150	4
3	NCS-702	Artificial Intelligence	3-1-0	30	20	50	100	150	4
4		Departmental Elective III	3-1-0	30	20	50	100	150	4
5		Departmental Elective IV	3-1-0	30	20	50	100	150	4
<b>Practical / Training /Projects</b>									
6	NCS-751	Distributed System *	0-0-2	-	20	20	30	50	1
7	NCS-752	Project	0-0-6	-	100	100	-	100	3
8	NCS-753	Industrial Training	0-0-2	-	50	50	-	50	1
9	GP-701	General Proficiency	-	-	-	-	-	50	
		Total	15-5-10					1000	25

1. Practical Training done after 6<sup>th</sup> Semester would be evaluated in 7<sup>th</sup> semester through Report and Viva-voce
2. Project has to be initiated in 7<sup>th</sup> semester beginning and completed by the end of 8<sup>th</sup> semester with proper report and demonstration.

\* At least 10 problems are to be considered based on corresponding theory course.

  
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 Ghaziabad

**Dr.A.P.J.Abdul kalam Technical University, Uttar Pradesh, Lucknow**  
 (Formerly Uttar Pradesh Technical University)  
**STUDY EVALUATION SCHEME**  
**B. TECH. COMPUTER SCIENCE & ENGINEERING**  
**YEAR forth, SEMESTER –VIII**  
 (Effective from the session: 2016-17)

SNo	Subject Code	Subject	Period	Evaluation Scheme				Total	Credit
				Sessional			Exam		
				CT	TA	Total			
1		Open Elective II	3-1-0	30	20	50	100	150	4
2	NCS-801	Digital Image Processing	3-1-0	30	20	50	100	150	4
3		Departmental Elective V	3-1-0	30	20	50	100	150	4
4		Departmental Elective VI	3-1-0	30	20	50	100	150	4
<b>Practical's / Training /Projects</b>									
5	NCS-851	Seminar	0-0-3	-	50	50	-	50	2
6	NCS-852	Project	0-0-12	-	100	100	200	300	7
7	GP-801	General Proficiency	-	-	-	-	-	50	
		<b>Total</b>	<b>12-4-15</b>					<b>1000</b>	<b>25</b>

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### Open Elective I

1. NOE-071 Entrepreneurship Development
2. NOE-072 Quality Management
3. NOE-073 Operations Research
4. NOE-074 Introduction to Bio Technology
5. NOE-075 Mobile Application Development
6. NOE-076 Ethical Hacking and Prevention
7. NOE-077 Software Project Management

### Open Elective II

1. NOE-081 Non Conventional Energy Resources
2. NOE-082 Non Linear Dynamics Systems
3. NOE-083 Product Development
4. NOE-084 Automation and Robotics

### Departmental Elective III

1. NCS-071 Software Testing and Audit
2. NCS-072 Neural Network
3. NCS-073 Computer Vision

### Departmental Elective IV

1. NCS-074 High Speed Network
2. NCS-075 Android Operating System
3. NCS-076 Service Oriented Architecture
4. NIT-701 Cryptographic & Network Security

### Departmental Elective V

1. NCS-080 Pattern Recognition
2. NCS-081 High Performance Computing
3. NCS-082 Real Time System
4. NCS-083 Cluster Computing
5. NCS-084 Grid Computing

### Departmental Elective VI

1. NCS-085 Data Compression
2. NCS-086 Quantum Computing
3. NCS-087 Embedded Systems
4. NCS-088 Semantic Web and Web Services

  
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2017-18

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**Evaluation Scheme & Syllabus**

**for**

**MBA First Year**

**On**

**Choice Based Credit System**

**(Effective from the Session: 2016-17)**

  
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**Dr. APJ Abdul Kalam Technical University, Lucknow**  
**Study and Evaluation Scheme**

**MBA Evaluation Scheme For Session 2016-17**

**Semester I**

S. No.	Course Title	Credit	Evaluation Scheme					
			Sessional Exams			ESE	Total	
			CT	TA	Total			
1	RMB101	Management Concepts and Applications	3	20	10	30	70	100
2	RMB102	Managerial Economics	3	20	10	30	70	100
3	RMB103	Financial Accounting for Managers	4	20	10	30	70	100
4	RMB104	Business Statistics	4	20	10	30	70	100
5	RMB105	Organisational Behaviour	3	20	10	30	70	100
6	RMB106	Marketing Management	4	20	10	30	70	100
7	RMB107	Business Communication	3	20	10	30	70	100
8	RMB108	Computer Application & Management Information System	3	20	10	30	70	100
		<b>TOTAL</b>	<b>27</b>					<b>800</b>

\* Non credit but qualifying

**Semester II**

S. No.	Course Title	Credit	Evaluation Scheme					
			Sessional Exams			ESE	Total	
			CT	TA	Total			
1	RMB201	Business Environment	3	20	10	30	70	100
2	RMB202	Human Resource Management	3	20	10	30	70	100
3	RMB203	Business Research Methods	3	20	10	30	70	100
4	RMB204	Financial Management	3	20	10	30	70	100
5	RMB205	Management Accounting & Control	3	20	10	30	70	100
6	RMB206	Production Operation & Supply Chain Management	3	20	10	30	70	100
7	RMB207	Quantitative Techniques for Managers	4	20	10	30	70	100
8	RMB208	Legal Aspects for Business	3	20	10	30	70	100
9	RMB209	Comprehensive Viva	2					100
		<b>TOTAL</b>	<b>27</b>					<b>900</b>

  
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# Evaluation Scheme & Syllabus for

## MBA Second Year

On

### Choice Based Credit System

(Effective from the Session: 2017-18)



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**MBA Evaluation Scheme for Session 2017 - 2018**  
**Semester III**

S. No.	Subject Code	Subject Title	Periods			Evaluation Scheme					Credit
			L	T	P	Sessional			ESE	Total	
						CT	TA	Total			
1	RMB301	Strategic Management	3	0	0	20	10	30	70	100	3
2	RMB302	International Business Management	3	0	0	20	10	30	70	100	3
3		Major Specialization Group Elective 1	3	0	0	20	10	30	70	100	3
4		Major Specialization Group Elective 2	3	0	0	20	10	30	70	100	3
5		Major Specialization Group Elective 3	3	0	0	20	10	30	70	100	3
6		Minor Specialization Group Elective 1	3	0	0	20	10	30	70	100	3
7		Minor Specialization Group Elective 2	3	0	0	20	10	30	70	100	3
8	RVE301	Universal Human Values and Professional Ethics	3	0	0	20	10	30	70	100	3
9	RMB351	Summer Training Project Report & Viva Voce	0	0	6		30	30	70	100	3
<b>TOTAL</b>										<b>900</b>	<b>27</b>

ESE- End Semester Examination  
CA - Class Test  
TA - Teacher Assessment

  
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### Electives for MBA III Semester (2017-18)

For major specialization, student will select all three (03) elective subjects from that group and for minor specialization, student will select any two (02) elective subjects from that group.

#### Specialization Group: Human Resource

S. No.	Subject Code	Subject Title
1	RMBHR01	Talent Management
2	RMBHR02	Performance and Reward Management
3	RMBHR03	Industrial Relations and Labour Laws

#### Specialization Group: Marketing

S. No.	Subject Code	Subject Title
1	RMBMK01	Sales & Distribution Management
2	RMBMK02	Consumer Behaviour
3	RMBMK03	Digital Marketing

#### Specialization Group: Finance

S. No.	Subject Code	Subject Title
1	RMBFM01	Security Analysis & Portfolio Management
2	RMBFM02	Tax Planning & Management
3	RMBFM03	Financial Market & Commercial Banking

#### Specialization Group: International Business


S. No.	Subject Code	Subject Title
1	RMBIB01	International Marketing
2	RMBIB02	International Logistics
3	RMBIB03	Export Import Documentation

#### Specialization Group: Information Technology

S. No.	Subject Code	Subject Title
1	RMBIT01	Enterprise Resource Planning
2	RMBIT02	Web Technology & E- Commerce
3	RMBIT03	Cloud Computing for Business

#### Specialization Group: Operations

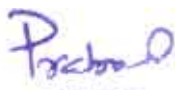
S. No.	Subject Code	Subject Title
1	RMBOP01	Supply Chain Management
2	RMBOP02	Materials Management
3	RMBOP03	Production Planning & Control

  
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Semester IV

S. No.	Subject Code	Course Title	Periods			Evaluation Scheme					Credit
						Sessional			ESE	Total	
			L	T	P	CT	TA	Total			
1	RMB401	Corporate Governance : Values and Ethics	4	0	0	20	10	30	70	100	4
2	RMB402	Entrepreneurship Development	4	0	0	20	10	30	70	100	4
3		Major Specialization Group Elective 4	3	0	0	20	10	30	70	100	3
4		Major Specialization Group Elective 5	3	0	0	20	10	30	70	100	3
5		Minor Specialization Group Elective 3	3	0	0	20	10	30	70	100	3
6	RCA405	Cyber Security	3	0	0	20	10	30	70	100	3
7	RMB 451	Research Project Report and Viva Voce	0	0	12		60	60	140	200	7
<b>TOTAL</b>										<b>800</b>	<b>27</b>

ESE- End Semester Examination  
 CA - Class Test  
 TA - Teacher Assessment

  
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### Electives for MBA IV Semester (2017-18)

For major specialization, student will select all two (02) elective subjects from that group and for minor specialization, student will select any one (01) elective subjects from that group.

#### Specialization Group: Human Resource

S. No.	Subject Code	Subject Title
1	RMBHR04	Training & Development
2	RMBHR05	Negotiation & Conflict Management

#### Specialization Group: Marketing

S. No.	Subject Code	Subject Title
1	RMBMK04	Marketing of Services
2	RMBMK05	Integrated Marketing Communication

#### Specialization Group: Finance

S. No.	Subject Code	Subject Title
1	RMBFM04	Working Capital Management
2	RMBFM05	Financial Derivatives

#### Specialization Group: International Business

S. No.	Subject Code	Subject Title
1	RMBIB04	Trading Blocks & Foreign Trade Frame Work
2	RMBIB05	Cross Cultural Management

#### Specialization Group: Information Technology

S. No.	Subject Code	Subject Title
1	RMBIT04	Database Management System
2	RMBIT05	System Analysis & Design

#### Specialization Group: Operations

S. No.	Subject Code	Subject Title
1	RMBOP04	World Class Manufacturing & Maintenance Management
2	RMBOP05	Contract and Project Management

  
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**Syllabus**

**For**

**M.Tech. (Biotechnology)**

**(Effective from the Session: 2016-17)**

2017-18  
2018-19  
2019-20

  
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**Study and Evaluation Scheme  
M.TECH. BIO-TECHNOLOGY  
(Effective from the session: 2016-17)**

1<sup>st</sup> Year, 1<sup>st</sup> Semester

S No.	Subject Code	Name of the Subject	Periods			Credit	Theory			Practical		Subject Total
			L	T	P		CT	TA	ESE	TA	ESE	
1	MTBT101	Applied Biochemistry & Molecular Biology	3	0	0	3	20	10	70	--	--	100
2	MTBT102	Bioprocess Engineering & Technology	3	0	0	3	20	10	70	--	--	100
3	MTBT01?	Departmental Elective - I	3	0	0	3	20	10	70	--	--	100
4	MTBT02?	Departmental Elective - II	3	0	0	3	20	10	70	--	--	100
5		Research Process & Methodology	3	0	0	3	20	10	70	--	--	100
6	MTBT151	Applied Biochemistry & Molecular Biology Lab	--	--	3	2	--	--	--	20	30	50
7	MTBT152	Bioprocess Engineering & Technology Lab	--	--	2	1	--	--	--	20	30	50
		<b>Total</b>				<b>18</b>						<b>600</b>

**L: Lecture T: Tutorial P: Practical/Project CT: Class Test TA: Teacher's Assessment, ESE: End Semester Examination**

**Departmental Elective-I**

1. MTBT011: Immunology & Vaccine Technology
2. MTBT012: Quality Control in Biotechnology
3. MTBT013: Applied Clinical Research

**Departmental Elective-II**

1. MTBT021: Biological Treatment of Waste Water
2. MTBT022: Nano Biotechnology & Toxicology
3. MTBT023: Industrial Biotechnological Products

  
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**Study and Evaluation Scheme  
M.TECH. BIO-TECHNOLOGY  
(Effective from the session: 2016-17)**

1<sup>st</sup> Year, II<sup>nd</sup> Semester

S No.	Subject Code	Name of the Subject	Periods			Credit	Theory			Practical		Subject Total
			L	T	P		CT	TA	ESE	TA	ESE	
1	MTBT201	Bioinformatics	3	0	0	3	20	10	70	--	--	100
2	MTBT202	Entrepreneurship, IPR & Biosafety	3	0	0	3	20	10	70	--	--	100
3	MTBT03?	Departmental Elective - III	3	0	0	3	20	10	70	--	--	100
4	MTBT04?	Departmental Elective - IV	3	0	0	3	20	10	70	--	--	100
5	MTBT05?	Departmental Elective - V	3	0	0	3	20	10	70	--	--	100
6	MTBT251	Bioinformatics Lab	--	--	3	2	--	--	--	20	30	50
7	MTBT252	Seminar-I	--	--	2	1	--	--	--	50	--	50
		<b>Total</b>				<b>18</b>						<b>600</b>

L: Lecture T: Tutorial P: Practical/Project CT: Class Test TA: Teacher's Assessment, ESE: End Semester Examination

**Departmental Elective-III**

1. MTBT031: Genetic Engineering
2. MTBT032: Applied Food Biotechnology
3. MTBT033: Molecular Modelling & Industrial Application

**Departmental Elective-IV**

1. MTBT041: Bioreactor Analysis & Design
2. MTBT041: Enzyme Technology & Industrial Application
3. MTBT043: Applied Bioenergy

**Departmental Elective-V**

1. MTBT051: Tissue Culture Techniques
2. MTBT052: Diagnostic Techniques in Biotechnology
3. MTBT053: Fundamentals of Stem Cell Technology

  
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**Study and Evaluation Scheme  
M.TECH. BIO-TECHNOLOGY  
(Effective from the session: 2017-18)**

2<sup>nd</sup> Year, III<sup>rd</sup> Semester

S No.	Subject Code	Name of the Subject	Periods			Credit	Theory			Practical		Subject Total
			L	T	P		CT	TA	ESE	TA	ESE	
1	MTBT351	Seminar-II	0	0	6	3	--	--	--	100	--	100
2	MTBT352	Dissertation	0	0	30	15	--	--	--	200	300	500
		<b>Total</b>				<b>18</b>						<b>600</b>

2<sup>nd</sup> Year, IV<sup>th</sup> Semester

S No.	Subject Code	Name of the Subject	Periods			Credit	Theory			Practical		Subject Total
			L	T	P		CT	TA	ESE	TA	ESE	
1	MTBT451	Dissertation (Final)	0	0	3	3	--	--	--	200	400	600
		<b>Total</b>				<b>18</b>						<b>600</b>

L: Lecture T: Tutorial P: Practical/Project CT: Class Test TA: Teacher's Assessment, ESE: End Semester Examination

  
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**DR. A.P.J. ABDUL KALAM TECHNICAL UNIVERSITY,  
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**Syllabus**

**For**

**M.Tech. (Computer Science & Engineering)**

**(Effective from the Session: 2016-17)**

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

**SEMESTER –I**

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

**SEMESTER –II**

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

  
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### SEMESTER –III

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

### SEMESTER –IV

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

#### Departmental Elective I

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

#### Departmental Elective II

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

#### Departmental Elective III-

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

  
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#### **Departmental Elective IV**

1. MTCS041: Distributed Databases
2. MTCS042: Software Project Planning & Management
3. MTCS043: Network Management
4. MTCS044: Robotics
5. MTCS045: Data Centre Management
6. MTCS046: Digital Forensics

#### **Departmental Elective V**

1. MTCS051: Optimization Techniques
2. MTCS052: Digital Image Processing
3. MTCS053: Professional Aspects in Software Engineering
4. MTCS054: Storage Area Network
5. MTCS055: Optical Networks
6. MTCS056: Advanced Data Modeling

  
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**DR. A.P.J. ABDUL KALAM TECHNICAL UNIVERSITY,  
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**Syllabus**

**For**

**M.Tech. (Mechanical Engineering)**

**(Effective from the Session: 2016-17)**

1

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

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

Semester -I

S. No.	Subject Code	Name of the Subject	Periods			Credit	Evaluation Scheme					Subject Total
			L	T	P		Theory			Practical		
							CT	TA	ESE	TA	ESE	
1	MTME 101	Simulation, Modelling & Analysis	3	0	0	3	20	10	70	--	--	100
2	MTME 102	Operations Research	3	0	0	3	20	10	70	--	--	100
3	MTME 01?	Departmental Elective-I	3	0	0	3	20	10	70	--	--	100
4		Departmental Elective-II	3	0	0	3	20	10	70	--	--	100
5		Research Process & Methodology	3	0	0	3	20	10	70	--	--	100
6	MTME 151	Simulation Modeling & Analysis Lab	-	-	3	2	--	--	--	20	30	50
7	MTME 152	Operations Research Lab	-	-	2	1	--	--	--	20	30	50
		<b>Total</b>				18						600

<b>Departmental Elective-I</b>	MTME 011	CAD/CAM
	MTME 012	Advanced Heat & Mass Transfer
	MTME 013	Renewable Energy System
	MTME 014	Reliability, Maintenance Management & Safety

<b>Departmental Elective-II</b>	MTTE 021	Turbo Machines
	MTME 021	Advanced Mechanical Vibrations
	MITTE 023	Advanced I.C. Engines
	MTME 022	Fracture Mechanics

**Semester –II**

S. No.	Subject Code	Name of the Subject	Periods			Credit	Evaluation Scheme					Subject Total
			L	T	P		Theory			Practical		
							CT	TA	ESE	TA	ESE	
	MTME 201	Computer Integrated Manufacturing (CIM)	3	0	0	3	20	10	70	--	--	100
1	MTME 202	Advanced Mechanics Of Solids	3	0	0	3	20	10	70	--	--	100
3		Departmental Elective-III	3	0	0	3	20	10	70	--	--	100
4	MTME 04?	Departmental Elective-IV	3	0	0	3	20	10	70	--	--	100
5	MTME 05?	Elective -V	3	0	0	3	20	10	70	--	--	100
6	MTME 251	Computer Integrated Manufacturing (CIM) Lab	-	-	3	2	--	--	--	20	30	50
7	MTME 252	Seminar-I	-	-	-	1	--	--	--	50	--	50
		<b>Total</b>				18						<b>600</b>

<b>Departmental Elective – III</b>	MTME 031	Advanced Finite Element Analysis
	MTME 032	Industrial Automation And Robotics
	MTME 033	Advanced Welding Technology
	MTTE 202	Computational Fluid Dynamics

<b>Departmental Elective – IV</b>	MTME 041	Optimization Techniques & Design Of Experiments
	MTME 042	Total Quality Management
	MTME 043	Advanced Mechanical Design
	MTME 044	Management Information System

<b>Elective – V</b>	MTME 051	Flexible Manufacturing System
	MTME 052	Machine Vision
	MTME 053	Additive Manufacturing And Tooling
	MTME 054	Modern Manufacturing Process

### Semester – III

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

### Semester – IV

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

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



**Syllabus**

**For**

**M.Tech.**

**VLSI DESIGN**

**(VLSI & EMBEDDED SYSTEM,  
ELECTRONICS DESIGN & TECHNOLOGY,  
ELECTRONICS CIRCUITS & SYSTEM DESIGN)**

**(Effective from the Session: 2016-17)**

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

**Study and Evaluation Scheme M. Tech. in VLSI DESIGN**

(Effective from Session 2016-17)

**First Year, Semester-I**

Sr. No.	Course Code	Subject	Periods			Credit	Evaluation Scheme					Subject Total
			L	T	P		Theory			Practical		
							CT	TA	ESE	TA	ESE	
1.	MTVL101	Low Power VLSI Design	3	0	0	3	20	10	70	-	-	100
2.	MTVL102	FPGA Architecture & Applications	3	0	0	3	20	10	70	-	-	100
3.	MTVL01?	Departmental Elective I	3	0	0	3	20	10	70	-	-	100
4.	MTVL02?	Departmental Elective II	3	0	0	3	20	10	70	-	-	100
5.		Research Process & Methodology	3	0	0	3	20	10	70	-	-	100
6.	MTVL151	VLSI Circuit Design Lab	0	0	3	2	-	-	-	20	30	50
7.	MTVL152	FPGA Design Lab	0	0	3	1	-	-	-	20	30	50
		<b>Total</b>	<b>15</b>	<b>0</b>	<b>6</b>	<b>18</b>						<b>600</b>

**First Year, Semester-II**

Sr. No.	Course Code	Subject	Periods			Credit	Evaluation Scheme					Subject Total
			L	T	P		Theory			Practical		
							CT	TA	ESE	TA	ESE	
1.	MTVL201	Hardware Description Languages	3	0	0	3	20	10	70	-	-	100
2.	MTVL202	VLSI DSP Architectures	3	0	0	3	20	10	70	-	-	100
3.	MTVL03?	Departmental Elective III	3	0	0	3	20	10	70	-	-	100
4.	MTVL04?	Departmental Elective IV	3	0	0	3	20	10	70	-	-	100
5.	MTVL05?	Departmental Elective V	3	0	0	3	20	10	70	-	-	100
6.	MTVL251	Advanced VLSI Design Lab	0	0	3	2	-	-	-	20	30	50
7.	MTVL252	Seminar I	0	0	3	1	-	-	-	50		50
		<b>Total</b>	<b>15</b>		<b>6</b>	<b>18</b>						<b>600</b>

  
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Second Year, Semester-III

Sr. No.	Course Code	Subject	Periods			Credit	Evaluation Scheme					Subject Total
			L	T	P		Theory			Practical		
							CT	TA	ESE	TA	ESE	
1.	MTVL351	Seminar II	0	0	6	3	-	-	-	100	-	100
2.	MTVL352	Dissertation	0	0	30	15	-	-	-	200	300	500
		Total			36	18						600

Second Year, Semester-IV

S. No.	Course Code	Subject	Periods			Credit	Evaluation Scheme					Subject Total
			L	T	P		Theory			Practical		
							CT	TA	ESE	TA	ESE	
1.	MTVL451	Dissertation	0	0	36	18	-	-	-	200	400	600
		Total			36	18						600

**Departmental Elective I**

- MTVL 011: SOC Design
- MTVL 012: Designing with ASICS
- MTVL 013: Analog VLSI Design

**Departmental Elective II**

- MTVL 021: Advanced Embedded Systems
- MTVL 022: Testing of VLSI Circuits
- MTVL 023: Digital IC Design

**Departmental Elective III**

- MTVL 031: Advanced Microcontroller & Systems
- MTVL 032: VLSI based SignalProcessing Architectures
- MTVL 033: Analog IC Design

**Departmental Elective IV**

- MTVL 041: Real Time Operating Systems
- MTVL 042: VLSI Testing & Testability
- MTVL 043: Memory Technologies

**Departmental Elective V**

- MTVL 051: Algorithms for VLSI Design Automation
- MTVL 052: MEMS & Micro Sensor Design
- MTVL 053: Embedded System for Wireless Communication

  
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2016-17

**DR. A.P.J. ABDUL KALAM TECHNICAL UNIVERSITY  
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**Evaluation Scheme & Syllabus**

**for**

**B.Tech. First Year**

(Civil/Computer/Chemical/Electrical/Electronics/Mechanical/Textile/Carpet/)

**On**

**Choice Based Credit System**

(Effective from the Session: 2016-17)

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**B. TECH. FIRST SEMESTER**

Sl No.	Subject Code	Subject Name	L-T-P	Th/Lab Marks	Sessional		Total	Credit
					Test	Assig/Att.		
1	RAS103	Engineering Maths-I	3---1---0	70	20	10	100	4
2	RAS101	Engineering Physics-I	3---1---0	70	20	10	100	4
3	REE101/ RME101	Basic Electrical Engg/ Elements of Mechanical Engg	3---1---0	70	20	10	100	4
4	RAS 104/ RCS101	Professional Communication/ Computer System & Programming in	3---0---0	70	20	10	100	3
5	REC101/ RAS102	Basic Electronics/ Engineering Chemistry	3---1---0	70	20	10	100	4
6	RAS151/ RAS152	Engg. Physics Lab/ Engg. Chemistry Lab	0---0---2	50		50	100	1
7	REE151/ RME151	Basic Electrical Engg Lab/ Elements of Mechanical Engg Lab	0---0---2	50		50	100	1
8	RAS 154/ RCS151	Professional Communication Lab/ Computer Prog. Lab	0---0---2	50		50	100	1
9	RME152/ RCE151	Workshop Practice/ Computer Aided Engg. Graphics	0---0---3	50		50	100	2
	<b>TOTAL</b>						<b>900</b>	<b>24</b>

  
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## B. TECH. SECOND SEMESTER

Sl No.	Subject Code	Subject Name	L-T-P	Th/Lab Marks	Sessional		Total	Credit
					Test	Assig/Att.		
1	RAS203	Engineering Maths-II	3---1---0	70	20	10	100	4
2	RAS201	Engineering Physics-II	3---1---0	70	20	10	100	4
3	RME201/ REE201	Elements of Mechanical Engg/ Basic Electrical Engg	3---1---0	70	20	10	100	4
4	RCS201/ RAS 204	Computer System & Programming in C/ Professional Communication	3---0---0	70	20	10	100	3
5	RAS202/ REC201	Engineering Chemistry/ Basic Electronics	3---1---0	70	20	10	100	4
6	RAS252/ RAS251	Engg. Chemistry Lab/ Engg. Physics Lab	0---0---2	50		50	100	1
7	RME251/ REE251	Elements of Mechanical Engg Lab/ Basic Electrical Engg Lab	0---0---2	50		50	100	1
8	RCS251/ RAS 254	Computer Progm. Lab/ Professional Communication Lab	0---0---2	50		50	100	1
9	RCE251/ RME252	Computer Aided Engg. Graphics/ Workshop Practice	0---0---3	50		50	100	2
	<b>TOTAL</b>						<b>900</b>	<b>24</b>

  
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**Evaluation Scheme & Syllabus**

**for**

**B.Tech. First Year**

**(Bio-Technology)**

**On**

**Choice Based Credit System**

**(Effective from the Session: 2016-17)**

  
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**B. Tech. in Biotechnology**  
**First Semester**

S. No.	Subject Code	Subject Name	L-T-P	Th/Lab Marks	Sessional		Total	Credit
					Test	Assig/Att.		
1	RBT-103/RBT-102	Elementary Maths-I/ Remedial Biology-I	3-1-0	70	20	10	100	4
2	RAS-101	Engineering Physics-I	3-1-0	70	20	10	100	4
3	REE-101	Basic Electrical Engineering	3-1-0	70	20	10	100	4
4	RAS-104	Professional Communication	3-0-0	70	20	10	100	3
5	REC-101	Basic Electronics	3-1-0	70	20	10	100	4
6	RAS-151	Engineering Physics Lab	0-0-2	50		50	100	1
7	REE-151	Basic Electrical Engineering Lab	0-0-2	50		50	100	1
8	RAS-154	Professional Communication Lab	0-0-2	50		50	100	1
9	RME-151	Workshop Practice	0-0-3	50		50	100	2
	<b>Total</b>						<b>900</b>	<b>24</b>

  
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**B. Tech. in Biotechnology**  
**Second Semester**

S. No.	Subject Code	Subject Name	L-T-P	Th/Lab Marks	Sessional		Total	Credit
					Test	Assig/Att.		
1	RBT-203/RBT-202	Elementary Maths-II/ Remedial Biology-II	3-1-0	70	20	10	100	4
2	RAS-201	Engineering Physics-II	3-1-0	70	20	10	100	4
3	RME-201	Elements of Mechanical Engg.	3-1-0	70	20	10	100	4
4	RCS-201	Computer System & Programming in C	3-0-0	70	20	10	100	3
5	RAS-202	Engineering Chemistry	3-1-0	70	20	10	100	4
6	RAS-252	Engineering Chemistry Lab	0-0-2	50		50	100	1
7	RME-251	Mechanical Engineering Lab	0-0-2	50		50	100	1
8	RCS-251	Computer Progm. Lab	0-0-2	50		50	100	1
9	RCE-251	Computer Aided Engg. Graphics	0-0-3	50		50	100	2
	<b>Total</b>						<b>900</b>	<b>24</b>

  
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**UTTAR PRADESH TECHNICAL UNIVERSITY  
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**Syllabus  
for  
B.TECH. COMPUTER SCIENCE AND ENGINEERING  
of  
Second Year**

**(Effective from the Session: 2014-15)**

*Prabhu*  
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IMS Engineering College  
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**B.TECH COMPUTER SCIENCE AND ENGINEERING**  
**STUDY & EVALUATION SCHEME**

2<sup>nd</sup> Year

SEMESTER III

S. No.	Course Code	Subject	Periods			Evaluation Scheme				Subject Total	Credit
			L	T	P	Sessional Exam			ESE		
						CT	TA	Total			
<b>THEORY SUBJECT</b>											
1	NAS-301/ NOE-031 to NOE-039	Mathematics III/Science Based Open Elective	3	1	0	30	20	50	100	150	4
2	NEC 309	Digital Logic Design	3	1	0	30	20	50	100	150	4
3	NCS 301	Data Structures Using C	3	1	0	30	20	50	100	150	4
4	NCS 302	Discrete Structures And Graph Theory	3	1	0	30	20	50	100	150	4
5	NHU301/ NHU302	Industrial Psychology/ Industrial Sociology	2	0	0	15	10	25	50	75	2
6	NCS 303	Computer Based Numerical And Statistical Techniques	2	1	0	15	10	25	50	75	3
	AUC-001/ AUC-002	Human Values & Professional Ethics/ Cyber Security	2	0	0	15	10	25	50	75*	
<b>PRACTICAL/DESIGN/DRAWING</b>											
7	NEC 359	Digital Logic Design Lab	0	0	3	10	10	20	30	50	1
8	NCS 351	Data Structures Using C Lab	0	0	3	10	10	20	30	50	1
9	NCS 353	Numerical Techniques Lab	0	0	2	10	10	20	30	50	1
10	NCS 355	Advance Programming Lab	0	0	2	10	10	20	30	50	1
11	NGP 301	GP						50		50	
		<b>TOTAL</b>	<b>18</b>	<b>5</b>	<b>10</b>					<b>1000</b>	<b>25</b>

**Science Based Open Elective:**

- NOE031 Introduction to Soft Computing (Neural Network, Fuzzy Logic and Genetic Algorithm)
- NOE032 Nano Sciences
- NOE033 Laser Systems and Applications
- NOE034 Space Sciences
- NOE035 Polymer Science & Technology
- NOE036 Nuclear Science
- NOE037 Material Science
- NOE038 Discrete Mathematics
- NOE039 Applied Linear Algebra

\*Human values & Professional Ethics /Cyber Security will be offered as a compulsory audit course for which passing marks are 30% in End Semester Examination and 40% in aggregate.

  
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## B.TECH COMPUTER SCIENCE AND ENGINEERING STUDY & EVALUATION SCHEME

2<sup>nd</sup> Year

SEMESTER IV

S. No.	Course Code	Subject	Periods			Evaluation Scheme			Subject Total	Credit	
			L	T	P	Sessional Exam					ESE
						CT	TA	Total			
<b>THEORY SUBJECT</b>											
1	NOE-041 to NOE-049/ NAS-401	Science Based Open Elective/ Mathematics III	3	1	0	30	20	50	100	150	4
2	NHU401/ NHU402	Industrial Psychology /Industrial Sociology	2	0	0	15	10	25	50	75	2
3	NEC-409	Introduction to Microprocessor	3	1	0	30	20	50	100	150	4
4	NCS-401	Operating System	3	1	0	30	20	50	100	150	4
5	NCS-402	Theory Of Automata and Formal Launguage	3	1	0	30	20	50	100	150	4
6	NCS-403	Computer Graphics	2	1	0	15	10	25	50	75	3
7	AUC-002/ AUC-001	Cyber Security/ Human Values & Professional Ethics	2	0	0	15	10	25	50	75*	
<b>PRACTICAL/DESIGN/DRAWING</b>											
7	NEC-459	Microprocessor Lab	0	0	3	10	10	20	30	50	1
8	NCS 451	Operating System Lab	0	0	3	10	10	20	30	50	1
9	NCS 453	Computer Graphics Lab	0	0	2	10	10	20	30	50	1
10	NCS 455	Functional and Logic Programming Lab	0	0	2	10	10	20	30	50	1
11	NGP-401	GP						50		50	
		<b>TOTAL</b>	<b>18</b>	<b>5</b>	<b>10</b>					<b>1000</b>	<b>25</b>

The details of Science Based Electives are to be provided by The Boards of Studies of Science Subjects; these are common to all branches.

Science Based Open Elective:

- NOE-041 Introduction to Soft Computing (Neural Network, Fuzzy Logic and Genetic Algorithm)
- NOE-042 Nano Sciences
- NOE-043 Laser Systems and Applications
- NoE-044 Space Sciences
- NOE-045 Polymer Science & Technology
- NOE-046 Nuclear Science
- NOE-047 Material Science
- NOE-048 Discrete Mathematics
- NOE-049 Applied Linear Algebra

\*Human values & Professional Ethics /Cyber Security will be offered as a compulsory audit course for which passing marks are 30% in End Semester Examination and 40% in aggregate.

  
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# UTTAR PRADESH TECHNICAL UNIVERSITY LUCKNOW



## SYLLABUS

Bachelor of Computer Science & Engineering  
&  
Bachelor of Computer Science & Information  
Technology

3<sup>rd</sup> Year (V & VI Semester)

(Effective from Session: 2015-2016)

  
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U.P. TECHNICAL UNIVERSITY, LUCKNOW

STUDY EVALUATION SCHEME

B. TECH. COMPUTER SCIENCE & ENGINEERING

&

B. TECH. COMPUTER SCIENCE AND INFORMATION TECHNOLOGY

YEAR THIRD, SEMESTER –V

(Effective from the session: 2015-16)

S. No	Course Code	Subject	Periods			Evaluation Scheme				Subject Total	Credit
			L	T	P	Sessional Exam			ESE		
						CT	TA	Total			
<b>THEORY SUBJECT</b>											
1	NCS 501	Design and Analysis of Algorithm	3	1	0	30	20	50	100	150	4
2	NCS 502	Database Management System	3	1	0	30	20	50	100	150	4
3	NCS 503	Principle of Programming Language	3	1	0	30	20	50	100	150	4
4	NCS 504	Web Technology	3	1	0	30	20	50	100	150	4
5	NCS 505	Computer Architecture	2	1	0	15	10	25	50	75	3
6	NHU5 01	Engineering Economics	2	0	0	15	10	25	50	75	2
<b>PRACTICAL/DESIGN/DRAWING</b>											
7	NCS 551	Design and Analysis of Algorithm Lab	0	0	3	10	10	20	30	50	1
8	NCS 552	DBMS Lab	0	0	3	10	10	20	30	50	1
9	NCS 553	Principle of Programming Language	0	0	2	10	10	20	30	50	1
10	NCS 554	Web Technology Lab	0	0	2	10	10	20	30	50	1
11	NGP 501	GP						50		50	
		<b>TOTAL</b>	<b>16</b>	<b>5</b>	<b>10</b>					<b>1000</b>	<b>25</b>

  
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# STUDY EVALUATION SCHEME

## B. TECH. COMPUTER SCIENCE & ENGINEERING & B. TECH. COMPUTER SCIENCE AND INFORMATION TECHNOLOGY

YEAR THIRD, SEMESTER –VI

(Effective from the session : 2015-16)

S. No	Course Code	Subject	Periods			Evaluation Scheme				Subject Total	Credit
			L	T	P	Sessional Exam			ESE		
						CT	TA	Total			
<b>THEORY SUBJECT</b>											
1	NCS 601	Computer Networks	3	1	0	30	20	50	100	150	4
2	NCS 602	Software Engineering	3	1	0	30	20	50	100	150	4
3	NCS 603	Compiler Design	3	1	0	30	20	50	100	150	4
4		Departmental Elective-I	3	1	0	30	20	50	100	150	4
5		Departmental Elective-II	2	1	0	15	10	25	50	75	3
6	NHU 601	Industrial Management	2	0	0	15	10	25	50	75	2
<b>PRACTICAL/DESIGN/DRAWING</b>											
7	NCS 651	Computer Networks Lab	0	0	3	10	10	20	30	50	1
8	NCS 652	Software Engineering Lab	0	0	3	10	10	20	30	50	1
9	NCS 653	Compiler Design Lab	0	0	2	10	10	20	30	50	1
10	NCS 654	SEMINAR	0	0	2		50	50		50	1
11	NGP 601	GP						50		50	
		<b>TOTAL</b>	<b>16</b>	<b>5</b>	<b>10</b>					<b>1000</b>	<b>25</b>

### Departmental Elective-I

1. NCS 061: Computational Geometry
2. NCS 062: Complexity Theory
3. NCS 063: Parallel Algorithm
4. NCS 064: Approximation & Randomized Algorithm
5. NCS 065: Concurrent System

### Departmental Elective-II

1. NCS 066: Data Warehousing & Data Mining
2. NCS 067: Distributed Database
3. NCS 068: E-Commerce
4. NCS 069: Advance DBMS
5. NCS 070: Human Computer Interface

  
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**Dr.A.P.J.Abdulkalam Technical University, UttarPardesh,Lucknow**  
(Formerly Uttar Pradesh Technical University)

**STUDY EVALUATION SCHEME**  
**B. TECH. COMPUTER SCIENCE & ENGINEERING**  
**YEAR forth, SEMESTER –VII**  
**(Effective from the session: 2016-17)**

S.No.	Subject Code	Subject	Period	Evaluation Scheme				Total	Credit
				Sessional			Exam		
				CT	TA	Total			
1		Open Elective I	3-1-0	30	20	50	100	150	4
2	NCS-701	Distributed System	3-1-0	30	20	50	100	150	4
3	NCS-702	Artificial Intelligence	3-1-0	30	20	50	100	150	4
4		Departmental Elective III	3-1-0	30	20	50	100	150	4
5		Departmental Elective IV	3-1-0	30	20	50	100	150	4
Practical / Training /Projects									
6	NCS-751	Distributed System *	0-0-2	-	20	20	30	50	1
7	NCS-752	Project	0-0-6	-	100	100	-	100	3
8	NCS-753	Industrial Training	0-0-2	-	50	50	-	50	1
9	GP-701	General Proficiency	-	-	-	-	-	50	
		Total	15-5-10					1000	25

1. Practical Training done after 6<sup>th</sup> Semester would be evaluated in 7<sup>th</sup> semester through Report and Viva-voce.
2. Project has to be initiated in 7<sup>th</sup> semester beginning and completed by the end of 8<sup>th</sup> semester with proper report and demonstration.

\* At least 10 problems are to be considered based on corresponding theory course.

  
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**Dr.A.P.J.Abdul kalam Technical University,UttarPardesh,Lucknow**  
 (Formerly Uttar Pradesh Technical University)  
**STUDY EVALUATION SCHEME**  
**B. TECH. COMPUTER SCIENCE & ENGINEERING**  
**YEAR forth, SEMESTER –VIII**  
**(Effective from the session: 2016-17)**

SNo	Subject Code	Subject	Period	Evaluation Scheme				Total	Credit
				Sessional			Exam		
				CT	TA	Total			
1		<b>Open Elective II</b>	3-1-0	30	20	50	100	150	4
2	NCS-801	Digital Image Processing	3-1-0	30	20	50	100	150	4
3		<b>Departmental Elective V</b>	3-1-0	30	20	50	100	150	4
4		<b>Departmental Elective VI</b>	3-1-0	30	20	50	100	150	4
<b>Practical's / Training /Projects</b>									
5	NCS-851	Seminar	0-0-3	-	50	50	-	50	2
6	NCS-852	Project	0-0-12	-	100	100	200	300	7
7	GP-801	General Proficiency	-	-	-	-	-	50	
		<b>Total</b>	<b>12-4-15</b>					<b>1000</b>	<b>25</b>

  
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### **Open Elective I**

1. NOE-071 Entrepreneurship Development
2. NOE-072 Quality Management
3. NOE-073 Operations Research
4. NOE-074 Introduction to Bio Technology
5. NOE-075 Mobile Application Development
6. NOE-076 Ethical Hacking and Prevention
7. NOE-077 Software Project Management

### **Open Elective II**

1. NOE-081 Non Conventional Energy Resources
2. NOE-082 Non Linear Dynamics Systems
3. NOE-083 Product Development
4. NOE-084 Automation and Robotics

### **Departmental Elective III**

1. NCS-071 Software Testing and Audit
2. NCS-072 Neural Network
3. NCS-073 Computer Vision

### **Departmental Elective IV**

1. NCS-074 High Speed Network
2. NCS-075 Android Operating System
3. NCS-076 Service Oriented Architecture
4. NIT-701 Cryptographic & Network Security

### **Departmental Elective V**

1. NCS-080 Pattern Recognition
2. NCS-081 High Performance Computing
3. NCS-082 Real Time System
4. NCS-083 Cluster Computing
5. NCS-084 Grid Computing

### **Departmental Elective VI**

1. NCS-085 Data Compression
2. NCS-086 Quantum Computing
3. NCS-087 Embedded Systems
4. NCS-088 Semantic Web and Web Services

  
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**UTTAR PRADESH TECHNICAL UNIVERSITY  
LUCKNOW**



**Syllabus  
for  
B.TECH. INFORMATION TECHNOLOGY  
of  
Second Year**

**(Effective from the Session: 2014-15)**

*Prabhu*  
Director  
IMS Engineering College  
Ghaziabad

## B.TECH INFORMATION TECHNOLOGY STUDY & EVALUATION SCHEME

2<sup>nd</sup> Year

SEMESTER III

S. No.	Course Code	Subject	Periods			Evaluation Scheme				Subject Total	Credit
			L	T	P	Sessional Exam			ESE		
						CT	TA	Total			
<b>THEORY SUBJECT</b>											
1	NAS-301/ NOE-031 to NOE-039	Mathematics III/Science Based Open Elective	3	1	0	30	20	50	100	150	4
2	NEC-309	Digital Logic Design	3	1	0	30	20	50	100	150	4
3	NCS-301	Data Structures Using C	3	1	0	30	20	50	100	150	4
4	NCS-302	Discrete Structures And Graph Theory	3	1	0	30	20	50	100	150	4
5	NHU-301/ NHU-302	Industrial Psychology/ Industrial Sociology	2	0	0	15	10	25	50	75	2
6	NCS-303	Computer Based Numerical And Statistical Techniques	2	1	0	15	10	25	50	75	3
	AUC-001/ AUC-002	Human Values & Professional Ethics/ Cyber Security	2	0	0	15	10	25	50	75*	
<b>PRACTICAL/DESIGN/DRAWING</b>											
7	NEC 359	Digital Logic Design Lab	0	0	3	10	10	20	30	50	1
8	NCS 351	Data Structures Using C Lab	0	0	3	10	10	20	30	50	1
9	NCS 353	Numerical Techniques Lab	0	0	2	10	10	20	30	50	1
10	NCS 355	Advance Programming Lab	0	0	2	10	10	20	30	50	1
11	NGP 301	GP						50		50	
		<b>TOTAL</b>	<b>18</b>	<b>5</b>	<b>10</b>					<b>1000</b>	<b>25</b>

**Science Based Open Elective:**

- NOE031 Introduction to Soft Computing (Neural Network, Fuzzy Logic and Genetic Algorithm)
- NOE032 Nano Sciences
- NOE033 Laser Systems and Applications
- NOE034 Space Sciences
- NOE035 Polymer Science & Technology
- NOE036 Nuclear Science
- NOE037 Material Science
- NOE038 Discrete Mathematics
- NOE039 Applied Linear Algebra

\*Human values & Professional Ethics /Cyber Security will be offered as a compulsory audit course for which passing marks are 30% in End Semester Examination and 40% in aggregate.

  
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## B.TECH INFORMATION TECHNOLOGY STUDY & EVALUATION SCHEME

2<sup>nd</sup> Year

SEMESTER IV

S. No.	Course Code	Subject	Periods			Evaluation Scheme				Subject Total	Credit
			L	T	P	Sessional Exam			ESE		
						CT	TA	Total			
<b>THEORY SUBJECT</b>											
1	NOE-041 to NOE-049/ NAS-401	Science Based Open Elective/ Mathematics III	3	1	0	30	20	50	100	150	4
2	EHU-402/ EHU -401	Industrial Sociology/ Industrial Psychology	2	0	0	15	10	25	50	75	2
3	NEC-408	Information Theory and Coding	3	1	0	30	20	50	100	150	4
4	NCS- 401	Operating System	3	1	0	30	20	50	100	150	4
5	NCS- 402	Theory Of Automata and Formal Launguage	3	1	0	30	20	50	100	150	4
6	NIT-401	Multimedia and Animation	2	1	0	15	10	25	50	75	3
7	AUC-002/ AUC-001	Cyber Security / Human Values & Professional Ethics	2	0	0	15	10	25	50	75*	
<b>PRACTICAL/DESIGN/DRAWING</b>											
7	NCS-451	Operating System Lab	0	0	3	10	10	20	30	50	1
8	NIT-451	Multimedia and Animation Lab	0	0	3	10	10	20	30	50	1
9	NCS-455	Functional and Logic Programming Lab	0	0	3	10	10	20	30	50	1
10	NIT-456	Colloquium	0	0	3	10	10	20	30	50	1
11	NGP-401	GP						50		50	
<b>TOTAL</b>			18	5	10					1000	25

**Science Based Open Elective:**

- NOE-041 Introduction to Soft Computing (Neural Network, Fuzzy Logic and Genetic Algorithm)
- NOE-042 Nano Sciences
- NOE-043 Laser Systems and Applications
- NoE-044 Space Sciences
- NOE-045 Polymer Science & Technology
- NOE-046 Nuclear Science
- NOE-047 Material Science
- NOE-048 Discrete Mathematics
- NOE-049 Applied Linear Algebra

\*Human values & Professional Ethics /Cyber Security will be offered as a compulsory audit course for which passing marks are 30% in End Semester Examination and 40% in aggregate.

  
 Director  
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 Ghaziabad

# UTTAR PRADESH TECHNICAL UNIVERSITY LUCKNOW



## SYLLABUS

### Bachelor of Information Technology

rd  
3 Year (V & VI Semester)

(Effective from Session 2015-2016)

*Prabhu*  
Director  
IMS Engineering College  
Ghaziabad

**U.P. TECHNICAL UNIVERSITY, LUCKNOW**  
**STUDY EVALUATION SCHEME**  
**B. TECH. INFORMATION TECHNOLOGY**  
**YEAR THIRD, SEMESTER -V**  
**(Effective from the session : 2015-16)**

S. No	Course Code	Subject	Periods			Evaluation Scheme				Subject Total	Credit
			L	T	P	Sessional Exam			ESE		
						CT	TA	Total			
<b>THEORY SUBJECT</b>											
1	NCS 501	Design and Analysis of Algorithm	3	1	0	30	20	50	100	150	4
2	NCS 502	Database Management System	3	1	0	30	20	50	100	150	4
3	NCS 503	Principle of Programming Language	3	1	0	30	20	50	100	150	4
4	NCS 504	Web Technology	3	1	0	30	20	50	100	150	4
5	NIT 501	Management Information System	2	1	0	15	10	25	50	75	3
6	NHU 501	Engineering Economics	2	0	0	15	10	25	50	75	2
<b>PRACTICAL/DESIGN/DRAWING</b>											
7	NCS 551	Design and Analysis of Algorithm Lab	0	0	3	10	10	20	30	50	1
8	NCS 552	DBMS Lab	0	0	3	10	10	20	30	50	1
9	NCS 553	Principle of Programming Language Lab	0	0	2	10	10	20	30	50	1
10	NCS 554	Web Technology Lab	0	0	2	10	10	20	30	50	1
11	NGP 501	GP						50		50	
		<b>TOTAL</b>	<b>16</b>	<b>5</b>	<b>10</b>					<b>1000</b>	<b>25</b>

  
**Director**  
**IMS Engineering College**  
**Ghaziabad**

**U.P. TECHNICAL UNIVERSITY, LUCKNOW**  
**STUDY EVALUATION SCHEME**  
**B. TECH. INFORMATION TECHNOLOGY**  
**YEAR THIRD, SEMESTER -VI**  
(Effective from the session : 2015-16)

S No	Course Code	Subject	Periods			Evaluation Scheme				Subject Total	Credit
			L	T	P	Sessional Exam			ESE		
						CT	TA	Total			
<b>THEORY SUBJECT</b>											
1	NCS 601	Computer Networks	3	1	0	30	20	50	100	150	4
2	NCS 602	Software Engineering	3	1	0	30	20	50	100	150	4
3	NCS 603	Compiler Design	3	1	0	30	20	50	100	150	4
4		Departmental Elective-I	3	1	0	30	20	50	100	150	4
5		Departmental Elective-II	2	1	0	15	10	25	50	75	3
6	NHU 601	Industrial Management	2	0	0	15	10	25	50	75	2
<b>PRACTICAL/DESIGN/DRAWING</b>											
7	NCS 651	Computer Networks Lab	0	0	3	10	10	20	30	50	1
8	NCS 652	Software Engineering Lab	0	0	3	10	10	20	30	50	1
9	NCS 653	Compiler Design Lab	0	0	2	10	10	20	30	50	1
10	NIT 654	SEMINAR	0	0	2		50	50		50	1
11	NGP 601	GP						50		50	
		<b>TOTAL</b>	<b>16</b>	<b>5</b>	<b>10</b>					<b>1000</b>	<b>25</b>

**Departmental Elective-I**

1. NIT 061: Information Retrieval and Management
2. NIT 062: Modeling & Simulation
3. NIT 063: Bioinformatics
4. NIT 064: Knowledge based & decision Support System
5. NIT 065: Geographic Information System

**Departmental Elective-II**

1. NCS 066: Data Warehousing & Data Mining
2. NCS 070: Human Computer Interface
3. NIT 066: E-Business Strategies
4. NCS 067: Distributed Database
5. NIT 067: Big Data

  
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**Dr.A.P.J.Abdul**  
**kalam Technical University,UttarPardesh,Lucknow**  
 (Formerly Uttar Pradesh Technical University)  
**STUDY EVALUATION SCHEME**  
**INFORMATION TECHNOLOGY**  
**YEAR forth, SEMESTER –VII**  
**(Effective from the session: 2016-17)**

S.No.	Subject Code	Subject	Period	Evaluation Scheme				Total	Credit
				Sessional			Exam		
				CT	TA	Total			
1		<u>Open Elective I</u>	3-1-0	30	20	50	100	150	4
2	NIT-701	Cryptography & Network Security	3-1-0	30	20	50	100	150	4
3	NCS-702	Artificial Intelligence	3-1-0	30	20	50	100	150	4
4		<u>Departmental Elective III</u>	3-1-0	30	20	50	100	150	4
5		<u>Departmental Elective IV</u>	3-1-0	30	20	50	100	150	4
<b><u>Practical / Training /Projects</u></b>									
6	NIT-751	Cryptography & Network Security*	0-0-2	-	20	20	30	50	1
7	NCS-752	Project	0-0-6	-	100	100	-	100	3
8	NCS-753	Industrial Training	0-0-2	-	50	50	-	50	1
9	GP-701	General Proficiency	-	-	-	-	-	50	
		<b>Total</b>	<b>15-5-10</b>					<b>1000</b>	<b>25</b>

1. Practical Training done after 6<sup>th</sup> Semester would be evaluated in 7<sup>th</sup> semester through Report and Viva-voce.
2. Project has to be initiated in 7<sup>th</sup> semester beginning and completed by the end of 8<sup>th</sup> semester with proper report and demonstration.

\* At least 10 problems are to be considered based on corresponding theory course.

  
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**Dr.A.P.J.Abdulkalam Technical University, Uttar Pradesh, Lucknow**  
 (Formerly Uttar Pradesh Technical University)  
**STUDY EVALUATION SCHEME**  
**INFORMATION TECHNOLOGY**  
**YEAR forth, SEMESTER –VIII**  
 (Effective from the session: 2016-17)

SNo	Subject Code	Subject	Period	Evaluation Scheme				Total	Credit
				Sessional			Exam		
				CT	TA	Total			
1		<u>Open Elective II</u>	3-1-0	30	20	50	100	150	4
2	NIT-801	Mobile Computing	3-1-0	30	20	50	100	150	4
3		<u>Departmental Elective V</u>	3-1-0	30	20	50	100	150	4
4		<u>Departmental Elective VI</u>	3-1-0	30	20	50	100	150	4
<b>Practicals / Training /Projects</b>									
5	NIT-851	Seminar	0-0-3	-	50	50	-	50	2
6	NCS-852	Project	0-0-12	-	100	100	200	300	7
7	GP-801	General Proficiency	-	-	-	-	-	50	
		<b>Total</b>	<b>12-4-15</b>					<b>1000</b>	<b>25</b>

\* At least 10 problems are to be considered based on corresponding theory course.

*Prabodh*  
 Director  
 IMS Engineering College  
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### **Open Elective I**

- NOE-071 Entrepreneurship Development
- NOE-072 Quality Management
- NOE-073 Operations Research
- NOE-074 Introduction to Bio Technology
- NOE-075 Mobile Application Development
- NOE-076 Ethical Hacking and Prevention
- NOE-077 Software Project Management

### **Open Elective II**

1. NOE-081 Non Conventional Energy Resources
2. NOE-082 Non Linear Dynamics Systems
3. NOE-083 Product Development
4. NOE-084 Automation and Robotics

### **Departmental Elective III**

1. NCS-071 Software Testing and Audit
2. NCS-072 Neural Network
3. NIT-071 IT in Forensic Science

### **Departmental Elective IV**

1. NCS-074 High Speed Network
2. NCS-075 Android Operating System
3. NCS-076 Service Oriented Architecture
4. NCS-701 Distributed System
5. NCS-073 Computer Vision

### **Departmental Elective V**

1. NCS-080 Pattern Recognition
2. NCS-082 Real Time System
3. NCS-084 Grid Computing
4. NCS-801 Digital Image Processing
5. NIT-080 Natural Language Processing

### **Departmental Elective VI**

1. NCS-085 Data Compression
2. NCS-087 Embedded Systems
3. NCS-088 Semantic Web and Web Services
4. NIT-081 Software Quality Engineering
5. NIT-082 Software Reliability

  
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**UTTAR PRADESH TECHNICAL UNIVERSITY  
LUCKNOW**



**Syllabus**

**for**

**B. Tech. Electrical Engineering**

**B.Tech. Electrical & Electronics Engg.**

**of**

**Second Year**

**(Effective from the Session: 2014-15)**

*Prabhat*  
Director  
IMS Engineering College  
Ghaziabad



STUDY AND EVALUATION SCHEME											
B-Tech. Electrical Engg./Electrical & Electronics Engineering											
									YEAR: 2 <sup>nd</sup> SEMESTER-III		
Sl. No.	COURSE NO	SUBJECT	PERIOD			EVALUATION SCHEME			EXAM ESE	SUBJECT TOTAL	CREDIT
						SESSIONAL EVALUATION					
			L	T	P	CT	TA	TOTAL			
<b>THEORY SUBJECTS</b>											
1	NAS-301/- NOE 031-039	Mathematics III/Science Based Open Elective	3	1	0	30	20	50	100	150	4
2	NME-309	Thermal & Hydraulic Machines	3	1	0	30	20	50	100	150	4
3	NEE-301	Electro-Mechanical Energy Conversion-I	3	1	0	30	20	50	100	150	4
4	NEE-302	Electrical Measurement & Measuring Instruments	3	1	0	30	20	50	100	150	4
5	NEE-303	Basic System Analysis	2	1	0	15	10	25	50	75	3
6	NHU301/ NHU302	Industrial Psychology/ Industrial Sociology	2	0	0	15	10	25	50	75	2
7	AUC-001/ AUC-002	Human Values & Professional Ethics/ Cyber Security	2	0	0	15	10	25	50	75*	
<b>PRACTICAL / DESIGN / DRAWING</b>											
8	NME-359	Thermal & Hydraulic Machines Lab	0	0	3	10	10	20	30	50	1
9	NEE-351	Electromechanical Energy Conversion- I Lab	0	0	3	10	10	20	30	50	1
10	NEE-352	Electrical Measurement Lab	0	0	2	10	10	20	30	50	1
11	NEE-353	Numerical Technique Lab	0	0	2	10	10	20	30	50	1
12	NGP-301	General Proficiency Lab	-	-	-	-	-	50	-	50	
		<b>Total</b>	<b>17</b>	<b>5</b>	<b>7</b>					<b>1000</b>	<b>25</b>

The details of Science Based Electives are to be provided by The Boards of Studies of Science Subjects; these are common to all branches.

\*Human values & Professional Ethics /Cyber Security will be offered as a compulsory audit course for which passing marks are 30% in End Semester Examination and 40% in aggregate.

**Note:** Numbers of departmental subjects/labs in any semester may vary as per requirement keeping subject total and credit total unchanged.

  
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STUDY AND EVALUATION SCHEME											
B-Tech. Electrical Engg./Electrical & Electronics Engineering											
						YEAR: 2 <sup>nd</sup> SEMESTER-IV					
Sl. No.	COURSE NO	SUBJECT	PERIOD			EVALUATION SCHEME			EXAM ESE	SUBJECT TOTAL	CREDIT
						SESSIONAL EVALUATION					
			L	T	P	CT	TA	TOTAL			
<b>THEORY SUBJECTS</b>											
1	NOE 041-049/ NAS-401	Science Based Open Elective/ Mathematics III	3	1	0	30	20	50	100	150	4
2	NEC-409	Analog & Digital Electronics	3	1	0	30	20	50	100	150	4
3	NEE-401	Electro-Mechanical Energy Conversion-II	3	1	0	30	20	50	100	150	4
4	NEE-402	Network Analysis and Synthesis	3	1	0	30	20	50	100	150	4
5	NEE-403	Instrumentation & Process Control	2	1	0	15	10	25	50	75	3
6	NHU401/ NHU402	Industrial Psychology /Industrial Sociology	2	0	0	15	10	25	50	75	2
7	AUC-002/ AUC-001	Cyber Security/ Human Values & Professional Ethics	2	0	0	15	10	25	50	75*	-
<b>PRACTICAL / DESIGN / DRAWING</b>											
8	NEC-459	Electronics Lab	0	0	3	10	10	20	30	50	1
9	NEE-451	Electro-Mechanical Energy Conversion - II Laboratory	0	0	3	10	10	20	30	50	1
10	NEE-452	Network Lab	0	0	2	10	10	20	30	50	1
11	NEE-453	Electrical Instrumentation Lab	0	0	2	10	10	20	30	50	1
12	NGP-401	General Proficiency	-	-	-			50	-	50	
		<b>Total</b>	<b>16</b>	<b>5</b>	<b>10</b>					<b>1000</b>	<b>25</b>

The details of Science Based Electives are to be provided by The Boards of Studies of Science Subjects; these are common to all branches.

\*Human values & Professional Ethics /Cyber Security will be offered as a compulsory audit course for which passing marks are 30% in End Semester Examination and 40% in aggregate.

  
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 Ghaziabad

# UTTAR PRADESH TECHNICAL UNIVERSITY LUCKNOW



## SYLLABUS

### Bachelor of Electrical and Electronics Engineering

3<sup>rd</sup> Year (V & VI Semester)

(Effective from Session 2015-2016)

*P. S. Chandra*  
Director  
IMS Engineering College  
Ghaziabad

# STUDY AND EVALUATION SCHEME OF ELECTRICAL & ELECTRONICS ENGINEERING

Third Year

Semester-V

S. No	Subject Code	Name of the Subject	Periods			Evaluation Scheme				Subject Total	Credit
			L	T	P	Sessional Assessment			ESE		
						C	T	Tot			
<b>THEORY SUBJECT</b>											
1	NEE-501	Elements Of Power System	3	1	0	30	20	50	100	150	4
2	NEE 502	Power Electronics	3	1	0	30	20	50	100	150	4
3	NEE-503	Control System	3	1	0	30	20	50	100	150	4
4	NEE-504	Microprocessor & Its Applications	3	1	0	30	20	50	100	150	4
5	NEC-508	Fundamentals of E.M. Theory	2	1	0	15	10	25	50	75	3
6	NHU-501	Engineering Economics	2	0	0	15	10	25	50	75	2
<b>PRACTICAL/DESIGN/DRAWING</b>											
7	NEE-551	Power Electronics Lab	0	0	3	10	10	20	30	50	1
8	NEE 552	Control System Lab	0	0	3	10	10	20	30	50	1
9	NEE-553	Microprocessor Lab	0	0	2	10	10	20	30	50	1
10	NEE 554	Simulation Based Minor Project	0	0	2	10	10	20	30	50	1
11	NGP 501	GP						50		50	1
		<b>TOTAL</b>	<b>16</b>	<b>5</b>	<b>10</b>					<b>1000</b>	<b>26</b>

*Prishad*

Director  
IMS Engineering College  
Ghaziabad

**STUDY AND EVALUATION SCHEME OF ELECTRICAL & ELECTRONICS ENGINEERING**

**Third Year**

**Semester-VI**

S. No	Subject Code	Name of the Subject	Periods			Evaluation Scheme				Subject Total	Credit
			L	T	P	Sessional Assessment			ESE		
						C	T	Tot			
<b>THEORY SUBJECT</b>											
1	NEE-601	Power System Analysis	3	1	0	30	20	50	100	150	4
2	NEE 602	Switchgear & Protection	3	1	0	30	20	50	100	150	4
3	NEN-603/ NEC 501	Integrated Circuits	3	1	0	30	20	50	100	150	4
4	NEN-011-NEN-014	Departmental Elective-I	3	1	0	30	20	50	100	150	4
5	NEN-021-NEN-024	Departmental Elective-II	2	1	0	15	10	25	50	75	3
6	NHU-601	Industrial Management	2	0	0	15	10	25	50	75	2
<b>PRACTICAL/DESIGN/DRAWING</b>											
7	NEC-651	IC Lab	0	0	2	10	10	20	30	50	1
8	NEN-652	Electrical & Electronics CAD Lab	0	0	3	10	10	20	30	50	1
9	NEN-653	Minor Project	0	0	2	10	10	20	30	50	1
10	NEN- 654	Seminar	0	0	3		50	50		50	1
11	NGP-601	GP						50		50	1
		<b>TOTAL</b>	<b>16</b>	<b>5</b>	<b>10</b>					<b>1000</b>	<b>26</b>

  
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**Dr. APJ ABDUL KALAM TECHNICAL UNIVERSITY, UTTAR PRADESH,  
LUCKNOW**

**STUDY AND EVALUATION SCHEME OF ELECTRICAL &  
ELECTRONICS ENGINEERING**

Fourth Year

Semester-VII

S.NO.	SUBJECT CODE	NAME OF THE SUBJECT	PERIODS			EVALUATION SCHEME			SUBJECT TOTAL	CREDIT	
			L	T	P	SESSIONAL ASSESMENT		ESE			
						CT	TA				TOTAL
<b>THEORY SUBJECT</b>											
1	NEN701	ELECTRIC DRIVES	3	1	0	30	20	50	100	150	4
2	NEN702	POWER STATION PRACTICE	3	1	0	30	20	50	100	150	4
3	NEC702A	ANALOG & DIGITAL COMMUNICATION	3	1	0	30	20	50	100	150	4
4	NEN031 to 033, NCS039	DEPARTMENTAL ELECTIVE-III	3	1	0	30	20	50	100	150	4
5	NOE071 to 074	OPEN ELECTIVE-1	3	1	0	30	20	50	100	150	4
<b>PRACTICAL/DESIGN/DRAWING</b>											
6	NEN751	POWER SYSTEM LAB	0	0	3	10	10	20	30	50	1
7	NEC752B	ADC LAB	0	0	3	10	10	20	30	50	1
8	NEN753	INDUSTRIAL TRAINING	0	0	2	30	20	50	--	50	1
9	NEN754	PROJECT	0	0	2	30	20	50	--	50	1
10	NGP701	GP					50	50		50	1
		<b>TOTAL</b>	<b>16</b>	<b>5</b>	<b>10</b>					<b>1000</b>	<b>24</b>

**LIST OF DEPARTMENTAL ELECTIVE-III**

- NEN-031 POWER SYSTEM OPERATION AND CONTROL
- NEN-032 ADVANCED MICROPROCESSORS AND MICROCONTROLLERS
- NEN-033 FLEXIBLE AC TRANSMISSION SYSTEMS
- NCS-039 OBJECT ORIENTED SYSTEMS AND C++

**LIST OF OPEN ELECTIVE-I**

- NOE-071 ENTREPRENEURSHIP DEVELOPMENT
- NOE-072 QUALITY MANAGEMENT
- NOE-073 OPERATIONS RESEARCH
- NOE-074 INTRODUCTION TO BIO TECHNOLOGY

*P. S. Chandra*  
Director  
IMS Engineering College  
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## PROPOSED STUDY AND EVALUATION SCHEME OF ELECTRICAL & ELECTRONICS ENGINEERING

Fourth Year

Semester-VIII

S. NO.	SUBJECT CODE	NAME OF THE SUBJECT	PERIODS			EVALUATION SCHEME			SUBJECT TOTAL	CREDIT	
			L	T	P	SESSIONAL ASSESMENT		ESE			
						CT	TA				TOTAL
<b>THEORY SUBJECT</b>											
1	NEE801	ELECTRICAL & ELECTRONICS ENGINEERING MATERIALS	3	1	0	30	20	50	100	150	3
2	NEC802	EMBEDDED SYSTEM	3	1	0	30	20	50	100	150	4
3	NEE041 to 042; NEN043 to 044	DEPARTMENTAL ELECTIVE-IV	3	1	0	30	20	50	100	150	4
4	NOE081 to 082; NOE084 to 085	OPEN ELECTIVE-2	3	1	0	30	20	50	100	150	4
<b>PRACTICAL/DESIGN/DRAWING</b>											
5	NEN851	PROJECT	0	0	12	0	100	100	250	350	8
6	NGP801	GP					50	50		50	1
		<b>TOTAL</b>	<b>14</b>	<b>5</b>	<b>12</b>		<b>180</b>	<b>350</b>	<b>650</b>	<b>1000</b>	<b>24</b>

**LIST OF DEPARTMENTAL ELECTIVE IV**

NEE041 EHVAC&DC TRANSMISSION  
 NEE042 POWER QUALITY  
 NEN043 IMAGE PROCESSING  
 NEN044 SATELLITE COMMUNICATION

**LIST OF OPEN ELECTIVE 2**

NOE081 NON-CONVENTIONAL ENERGY RESOURCES  
 NOE082 NON LINEAR DYNAMIC SYSTEMS  
 NOE084 AUTOMATION & ROBOTICS  
 NOE085 DATABASE MANAGEMENT SYSTEM AND DATA MINING AND WAREHOUSING

  
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**UTTAR PRADESH TECHNICAL UNIVERSITY  
LUCKNOW**



**SYLLABUS  
2<sup>nd</sup> Year**

**[Effective from Session 2014-15]**

- 1. B.Tech. Electronics Engineering**
- 2. B.Tech. Electronics & Communication Engineering**
- 3. B.Tech. Electronics & Telecommunication Engineering**
- 4. B.Tech. Electronics & Instrumentation Engineering**
- 5. B.Tech. Instrumentation & Control Engineering**
- 6. B. Tech. Applied Electronics and Control Engineering**
- 7. B. Tech. Biomedical Engineering**

  
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## STUDY AND EVALUATION SCHEME

B.Tech. Electronics Engineering, B.Tech. Electronics & Communication Engineering, B.Tech. Electronics & Telecommunication Engineering, B.Tech. Electronics & Instrumentation Engineering, B.Tech. Instrumentation & Control Engineering, B. Tech. Applied Electronics and Control Engineering, B. Tech. Biomedical Engineering  
[Effective from Session 2014-15]

YEAR 2<sup>ND</sup>

SEMESTER-III

S.No.	Subject Code	Name of Subject	Periods			Evaluation Scheme				Subject Total	Credit
			L	T	P	CT	TA	Total	ESC		
1.	NAS-301/ NOE-031- NOE-039	Engg. Mathematics- III/Science based Electives*	3	1	0	30	20	50	100	150	4
2.	NEC-301	Network Analysis & Synthesis	3	1	0	30	20	50	100	150	4
3.	NEC-302	Fundamental of Electronic Devices	3	1	0	30	20	50	100	150	4
4.	NEC-303	Signals and Systems	3	1	0	30	20	50	100	150	4
5.	NHU-301/ NHU-302	Industrial Psychology/Industrial Sociology	2	0	0	15	10	25	50	75	2
6.	NEC-304	Switching Theory & Logic Design	2	1	0	15	10	25	50	75	3
	AUC-001/ AUC-002	Human Values & Professional Ethics/Cyber Security	2	0	0	15	10	25	50	75**	--
<b>PRACTICAL/DESIGN/DRAWING</b>											
7.	NEC-351	Network Analysis & Synthesis Lab.	0	0	3	10	10	20	30	50	1
8.	NEC-352	Electronics Workshop & PCB Design	0	0	3	10	10	20	30	50	1
9.	NEC-353	Logic Design Lab.	0	0	2	10	10	20	30	50	1
10.	NEC-354	Electronic Device Lab.	0	0	2	10	10	20	30	50	1
11.	NGP-301	NGP						50		50	--
		<b>Total</b>	<b>18</b>	<b>5</b>	<b>10</b>					<b>1000</b>	<b>25</b>

### Science Based Open Elective:

NOE031	Introduction to Soft Computing (Neural Network, Fuzzy Logic and Genetic Algorithm)
NOE032	Nano Sciences
NOE033	Laser Systems and Applications
NOE034	Space Sciences
NOE035	Polymer Science & Technology
NOE036	Nuclear Science
NOE037	Material Science
NOE038	Discrete Mathematics
NOE039	Applied Linear Algebra

\*Human values & Professional Ethics /Cyber Security will be offered as a compulsory audit course for which passing marks are 30% in End Semester Examination and 40% in aggregate.

  
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## STUDY AND EVALUATION SCHEME

B.Tech. Electronics Engineering, B.Tech. Electronics & Communication Engineering, B.Tech. Electronics & Telecommunication Engineering, B.Tech. Electronics & Instrumentation Engineering, B.Tech. Instrumentation & Control Engineering, B. Tech. Applied Electronics and Control Engineering, B. Tech. Biomedical Engineering  
[Effective from Session 2014-15]

YEAR 2<sup>ND</sup>

SEMESTER-IV

S.No.	Subject Code	Name of Subject	Periods			Evaluation Scheme				Subject Total	Credit
			L	T	P	CT	TA	Total	ESC		
1.	NOE-041- NOE-049/ NAS-401	Science based Elective/Engg. Mathematics-III	3	1	0	30	20	50	100	150	4
2.	NEC-401	Data Structure	3	1	0	30	20	50	100	150	4
3.	NEC-402	Electronic Circuits	3	1	0	30	20	50	100	150	4
4.	NEC-408	Electronic Measurements & Instrumentation	3	1	0	30	20	50	100	150	4
5.	NHU-401/ NHU-402	Industrial Sociology/ Industrial Psychology	2	0	0	15	10	25	50	75	2
6.	NEC-404	Electromagnetic Field Theory (EMFT)	2	1	0	15	10	25	50	75	3
7.	AUC-002/ AUC-001	Cyber Security/ Human Values & Professional Ethics	2	0	0	15	10	25	50	75**	--
<b>PRACTICAL/DESIGN/DRAWING</b>											
8.	NEC-451	Data Structure Lab.	0	0	3	10	10	20	30	50	1
9.	NEC-452	Electronic Circuits Lab.	0	0	3	10	10	20	30	50	1
10.	NEC-453	Digital Electronics Lab.	0	0	2	10	10	20	30	50	1
11.	NEC-454	Electronics Measurement Lab.	0	0	2	10	10	20	30	50	1
12.	NGP-401	NGP						50		50	--
		<b>Total</b>				<b>40</b>				<b>1000</b>	<b>25</b>

### Science Based Open Elective:

- NOE-041 Introduction to Soft Computing (Neural Network, Fuzzy Logic and Genetic Algorithm)
- NOE-042 Nano Sciences
- NOE-043 Laser Systems and Applications
- NOE-044 Space Sciences
- NOE-045 Polymer Science & Technology
- NOE-046 Nuclear Science
- NOE-047 Material Science
- NOE-048 Discrete Mathematics
- NOE-049 Applied Linear Algebra

\*Human values & Professional Ethics /Cyber Security will be offered as a compulsory audit course for which passing marks are 30% in End Semester Examination and 40% in aggregate.

  
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## **Syllabus**

**3<sup>rd</sup> Year**

**[Effective from Session 2016-17]**

- 1. B.Tech. Electronics Engineering**
- 2. B.Tech. Electronics & Communication Engineering**
- 3. B.Tech. Electronics & Telecommunication Engineering**

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## SEMESTER-V

No.	Subject Code	Name of the Subject	Periods			Evaluation Scheme			Subject Total	Credit	
			L	T	P	Sessional Assessment					ESE
						CT	TA	Total			
<b>THEORY SUBJECTS</b>											
1	NEC 501R	Integrated Circuits	3	1	0	30	20	50	100	150	4
2	NEC 502	Principles of Communication	3	1	0	30	20	50	100	150	4
3	NEC 503	Microprocessors	3	1	0	30	20	50	100	150	4
4	NIC 501	Control System - I	3	1	0	30	20	50	100	150	4
5	NEC 504	Antenna and Wave Propagation	2	1	0	15	10	25	50	75	3
6	NHU501	Engineering Economics	2	0	0	15	10	25	50	75	2
<b>PRACTICAL/ DESIGN/ DRAWING</b>											
7	NEC 551R	Integrated Circuits Lab	0	0	2	10	10	20	30	50	1
8	NIC 551	Control System Lab	0	0	2	10	10	20	30	50	1
9	NEC 552	Communication Lab - I	0	0	2	10	10	20	30	50	1
10	NEC 553	Microprocessors Lab	0	0	2	10	10	20	30	50	1
11	NGP 501	GP						50		50	
		<b>TOTAL</b>	16	5	8					1000	25

**CT** Class Test

**ESE** End Semester Examination

**L/T/P** Lecture/ Tutorial/ Practical

**AT** Attendance

**TA** Tutorial Assignment

  
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## SEMESTER-VI

No.	Subject Code	Name of the Subject	Periods			Evaluation Scheme			Subject Total	Credit	
			L	T	P	Sessional Assessment					ESE
						CT	TA	Total			
<b>THEORY SUBJECTS</b>											
1	NEC 601	Microwave Engineering	3	1	0	30	20	50	100	150	4
2	NEC 602	Digital Communication	3	1	0	30	20	50	100	150	4
3	NEC 603	Integrated Circuit Technology	3	1	0	30	20	50	100	150	4
4	NEC 0	Departmental Elective -I	3	1	0	30	20	50	100	150	4
5	NEC 0	Departmental Elective - II	2	1	0	15	10	25	50	75	3
6	NHU601	Industrial Management	2	0	0	15	10	25	50	75	2
<b>PRACTICAL/ DESIGN/ DRAWING</b>											
7	NEC 651	Antenna and Microwave Lab	0	0	2	10	10	20	30	50	1
8	NEC 652	Communication Lab - II	0	0	2	10	10	20	30	50	1
9	NEC 653	CAD of Electronics Lab	0	0	2	10	10	20	30	50	1
10	NEC 654R	Seminar	0	0	1	10	10	20	-	20	1
11	NEC 655	Microcontrollers for Embedded Systems Lab	0	0	1	6	6	12	18	30	1
12	NGP 601	GP						50		50	
		<b>TOTAL</b>	16	5	8					1000	26

### Departmental Elective –I

- |    |         |  |
|----|---------|--|
| 1. | NEC011  | Digital Signal Processing              |
| 2. | NEC 012 | Computer Architecture and Organization |
| 3. | NEC 013 | Artificial Neural Network              |
| 4. | NEC 014 | Advance Semiconductor Devices          |
| 5. | NEC013R | Real Time Systems                      |

### Departmental Elective - II

- |    |          |                                      |
|----|----------|--------------------------------------|
| 1. | NEC 021  | Industrial Electronics               |
| 2. | NEC 022R | Microcontroller for Embedded Systems |
| 3. | NEC 023  | Analog Signal Processing             |
| 4. | NEC 024R | Advance Digital Design using Verilog |

  
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**AKTU, LUCKNOW, U.P**  
**Study and Evaluation Scheme B. Tech. in Electronics Engg/Electronics & Communication**  
**Engg/Electronics & Telecommunication Engg**  
**[Effective from the session 2016-17]**

YEAR 4<sup>th</sup>, SEMESTER-VII

S. No	Course Code	SUBJECT	PERIODS			Evaluation Scheme				Subject Total	Credit
						SESSIONAL EXAM.			ESE		
			L	T	P	CT	TA	Total			
<b>THEORY SUBJECTS</b>											
1.	NOE 07*	Open Elective-I**	3	1	0	30	20	50	100	150	4
2.	NEC 03*	Departmental Elective-III	3	1	0	30	20	50	100	150	4
3.	NEC 701	Optical Communication	3	1	0	30	20	50	100	150	4
4.	NEC 702B	Data Communication Networks	3	1	0	30	20	50	100	150	4
5.	NEC 703	VLSI Design	3	1	0	30	20	50	100	150	4
6.	AUC 001	*Human Values & Professional Ethics	2	0	0	15	10	25	50	75	-
<b>PRACTICAL/DESIGN/DRAWING</b>											
7.	NEC 751	Optical Communication & Networking Lab	0	0	2	-	20	20	30	50	1
8.	NEC 752A	Electronics Circuit Design	0	0	3	-	20	20	30	50	2
9.	NEC 753	Industrial Training Viva-Voce	0	0	2	-	50	50	-	50	1
10.	NEC 754	Project	0	0	2	-	50	50	-	50	1
11.	NGP 701	General Proficiency	-	-	-	-	-	50	-	50	1
		<b>Total</b>	<b>15</b>	<b>5</b>	<b>9</b>	<b>150</b>	<b>240</b>	<b>440</b>	<b>560</b>	<b>1000</b>	<b>26</b>

**\*\* Open Electives-I**

- NOE-071 Entrepreneurship Development
- NOE-072 Quality Management
- NOE-073 Operation Research
- NOE-074 Introduction to Biotechnology
- NOE-075 Micro and smart systems

  
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AKTU, LUCKNOW, U.P  
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 [Effective from the session 2016-17]

YEAR 4<sup>th</sup>, SEMESTER-VIII

S. No.	Course Code	SUBJECT	PERIODS			Evaluation Scheme				Subject Total	Credit
						SESSIONAL EXAM.			ESE		
			L	T	P	CT	TA	Total			
<b>THEORY SUBJECTS</b>											
1.	NOE 08*	Open Elective-II**	3	1	0	30	20	50	100	150	4
2.	NEC 04*	Departmental Elective-IV	3	1	0	30	20	50	100	150	4
3.	NEC 801	Wireless & Mobile Communication	3	1	0	30	20	50	100	150	4
4.	NEC 802	Optical Network	3	1	0	30	20	50	100	150	3
5.	AUC 001	*Human Values & Professional Ethics	2	0	0	15	10	25	50	75	-
<b>PRACTICAL/DESIGN/DRAWING</b>											
6.	NEC 851	Project	0	0	12	-	100	100	250	350	8
7.	NGP 801	General Proficiency	-	-	-	-	-	50	-	50	1
		<b>Total</b>	<b>12</b>	<b>4</b>	<b>12</b>	<b>120</b>	<b>180</b>	<b>350</b>	<b>650</b>	<b>1000</b>	<b>24</b>

**\*\* Open Electives-II**

NOE-081 Non Conventional Energy Resources  
 NOE-082 Nonlinear Dynamic system  
 NOE-083 Product Development  
 NOE-084 Automation and Robotics

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## LIST OF ELECTIVES:

### Elective – III NEC 03\* Departmental Elective III

1. NEC 031 Information Theory & Coding
2. NEC 032 Digital Image Processing
3. NEC 033 Voice Over IP
4. NEC 034 Filter Design
5. NEC 035 Applied Fuzzy Electronic Systems

### Elective – IV NEC 04\* Departmental Elective IV

1. NEC 041 Electronic Switching
2. NEC 042 Digital System Design using VHDL
3. NEC 043 Speech Processing
4. NEC 044 Advanced Display Technologies & Systems
5. NEC 045 Satellite & RADAR systems



# UTTAR PRADESH TECHNICAL UNIVERSITY LUCKNOW



## SYLLABUS

### B. Tech. (2<sup>nd</sup> Year)

1. Mechanical Engineering
2. Production Engineering
3. Industrial & Production Engineering
4. Mechanical & Industrial Engineering
5. Manufacturing Technology
6. Automobile Engineering
7. Aeronautical Engineering

[Effective Form session 2014-15]

  
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**STUDY & EVALUATION SCHEME**  
**B. Tech. Mechanical Engineering / Production Engineering / Industrial & Production Engineering / Mechanical**  
**& Industrial Engineering / Manufacturing Technology / Automobile Engineering / Aeronautical Engineering**  
**[Effective Form session 2014-15]**

**YEAR II, SEMESTER-III**

S. No.	Subject Code	Name of the Subject	Periods			Evaluation Scheme				Subject Total	Credits
			L	T	P	Sessional Assessment			ESE		
						CT	TA	Total			
<b>THEORY SUBJECT</b>											
1	NAS-301/ NOE-031 to NOE-039	Engg Mathematics-III/ Science Based Elective	3	1	0	30	20	50	100	150	4
2	NCE-301	Fluid Mechanics	3	1	0	30	20	50	100	150	4
3	NME-301	Material Science	3	1	0	30	20	50	100	150	4
4	NME-302	Mechanics of Solids	3	1	0	30	20	50	100	150	4
5	NHU-301/ NHU-302	Industrial Psychology/ Industrial Sociology	2	0	0	15	10	25	50	75	2
6	NME-303	Thermodynamics	2	1	0	15	10	25	50	75	3
7	AUC-001/ AUC-002	Human Value & Professional Ethics/Cyber Security	2	0	0	15	10	25	50	75*	
<b>PRACTICAL/DESIGN/DRAWING SUBJECTS</b>											
8	NCE-351	Fluid Mechanics Lab.	0	0	3	10	10	20	30	50	1
9	NME-351	Material Science & Testing Lab.	0	0	2	10	10	20	30	50	1
10	NME-352	Machine Drawing I	0	0	3	10	10	20	30	50	1
11	NME-353	Thermodynamics Lab.	0	0	2	10	10	20	30	50	1
12	NGP-301	GP						50		50	
		<b>TOTAL</b>	18	5	10					1000	25

*NOTE: Up to IV semesters – common to Mechanical and related branches (such as Production, Industrial, Manufacturing, Automobile, Aeronautical etc.).*

The details of Science Based Electives are to be provided by The Boards of Studies of Science Subjects; these are common to all branches.

\*Human values & Professional Ethics /Cyber Security will be offered as a compulsory audit course for which passing marks are 30% in End Semester Examination and 40% in aggregate.

  
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**Ghaziabad**

**STUDY & EVALUATION SCHEME**

**B. Tech. Mechanical Engineering / Production Engineering / Industrial & Production Engineering / Mechanical & Industrial Engineering / Manufacturing Technology / Automobile Engineering / Aeronautical Engineering**  
[Effective Form session 2014-15]

**YEAR II, SEMESTER-IV**

S. No.	Subject Code	Name of the Subject	Periods			Evaluation Scheme				Subject Total	Credits
			L	T	P	Sessional Assessment			ESE		
						CT	TA	Total			
<b>THEORY SUBJECT</b>											
1	NOE-041 to NOE-049/ NAS-401	Science Based Elective/ Engg Mathematics-III	3	1	0	30	20	50	100	150	4
2	NEE-409	Electrical Machines & Controls	3	1	0	30	20	50	100	150	4
3	NME-401	Applied Thermodynamics	3	1	0	30	20	50	100	150	4
4	NME-402	Manufacturing Science & Technology I	3	1	0	30	20	50	100	150	4
5	NHU-402/ NHU-401	Industrial Sociology/Industrial Psychology	2	0	0	15	10	25	50	75	2
6	NME-403	Measurement and Metrology	2	1	0	15	10	25	50	75	3
7	AUC-002/ AUC-001	<i>Cyber Security/Human Value &amp; Professional Ethics</i>	2	0	0	15	10	25	50	75*	
<b>PRACTICAL/DESIGN/DRAWING SUBJECT</b>											
8	NEE-459	Electrical Machines & Controls Lab.	0	0	3	10	10	20	30	50	1
9	NME-451	Machine Drawing II	0	0	3	10	10	20	30	50	1
10	NME-452	Manufacturing Technology I Lab.	0	0	2	10	10	20	30	50	1
11	NME-453	Measurement and Metrology Lab.	0	0	2	10	10	20	30	50	1
12	NGP-401	GP						50		50	
		<b>TOTAL</b>	<b>18</b>	<b>5</b>	<b>10</b>					<b>1000</b>	<b>25</b>
		<b>Industrial Training-I of 4 weeks after IV semester or Minor fabrication project involving work for nearly 4 weeks , which will be evaluated in VII semester</b>									

**NOTE:** Practical summer training-I of 4-weeks after IV –semester or Minor fabrication project will be evaluated in VII semester

The details of Science Based Electives are to be provided by The Boards of Studies of Science Subjects; these are common to all branches.

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# U.P. TECHNICAL UNIVERSITY, LUCKNOW



## Syllabus

3<sup>rd</sup> Year

[Effective from session 2015-16]

1. B. Tech. Mechanical Engineering
2. B. Tech. Production Engineering
3. B. Tech. Industrial & Production Engineering
4. B. Tech. Mechanical & Industrial Engineering

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**U.P. TECHNICAL UNIVERSITY, LUCKNOW**  
**STUDY & EVALUATION SCHEME**  
**B. Tech. Mechanical Engineering**  
**[Effective from Session 20015-16]**  
**YEAR III, SEMESTER-V**

S. No.	Subject Code	Name of the Subject	Periods			Evaluation Scheme				Subject Total	Credit
			L	T	P	Sessional Assessment			ESE		
						CT	TA	Total			
<b>THEORY SUBJECT</b>											
1	NME-501	Machine Design-I	2	1	0	15	10	25	50	75	3
2	NME-502	Kinematics of Machines	3	1	0	30	20	50	100	150	4
3	NME-503	Manufacturing Science & Technology-II	3	1	0	30	20	50	100	150	4
4	NME-504	Heat & Mass Transfer	3	1	0	30	20	50	100	150	4
5	NME-505	I.C. Engines & Compressors	3	1	0	30	20	50	100	150	4
6	NHU-501	Engineering Economics	2	0	0	15	10	25	50	75	2
<b>PRACTICAL/DESIGN/DRAWING</b>											
7	NME-551	Machine Design-I Lab	0	0	2	10	10	20	30	50	1
8	NME-552	Seminar	0	0	2	--	--	50	--	50	1
9	NME-553	Manufacturing Technology-II Lab	0	0	3	10	10	20	30	50	1
10	NME-554	Heat & Mass Transfer Lab	0	0	3	10	10	20	30	50	1
11	NGP-501	General Proficiency	--	--	--	--	--	50	--	50	
		<b>TOTAL</b>	<b>16</b>	<b>5</b>	<b>10</b>					<b>1000</b>	<b>25</b>

**U.P. TECHNICAL UNIVERSITY, LUCKNOW**  
**STUDY & EVALUATION SCHEME**  
**B. Tech. Mechanical Engineering**  
**[Effective from Session 20015-16]**  
**YEAR III, SEMESTER-VI**

S. No.	Subject Code	Name of the Subject	Periods			Evaluation Scheme				Subject Total	Credit
			L	T	P	Sessional Assessment			ESE		
						CT	TA	Total			
<b>THEORY SUBJECT</b>											
1	NME-602	Machine Design-II	3	1	0	30	20	50	100	150	4
2	NME-603	Dynamics of Machines	3	1	0	30	20	50	100	150	4
3	NME-604	Refrigeration & Air-conditioning	3	1	0	30	20	50	100	150	4
4	NME-011 to NME-014	Departmental Elective - I	3	1	0	30	20	50	100	150	4
5	NME-021 to NME-024	Departmental Elective - II	2	1	0	15	10	25	50	75	3
6	NHU-601	Industrial Management	2	0	0	15	10	25	50	75	2
<b>PRACTICAL/DESIGN/DRAWING</b>											
7	NME-651	Fluid Machinery Lab	0	0	3	10	10	20	30	50	1
8	NME-652	Machine Design-II Lab	0	0	2	10	10	20	30	50	1
9	NME-653	Theory of Machines Lab	0	0	2	10	10	20	30	50	1
10	NME-654	Refrigeration & Air Conditioning Lab	0	0	3	10	10	20	30	50	1
11	NGP-601	General Proficiency	--	--	--	--	--	50	--	50	
		<b>TOTAL</b>	<b>16</b>	<b>5</b>	<b>10</b>					<b>1000</b>	<b>25</b>

Note- 4 to 6 Weeks Industrial Training-II after VI semester also to be evaluated in VII semester

**Departmental Electives:**

**Department Elective - I**

1. NME-011 Engineering Optimization
2. NME-012 Finite Element Methods
3. NME-013 Mechanical Vibrations
4. NME-014 Mechatronics

**Department Elective - II**

1. NME-021 Fluid Machinery
2. NME-022 Product Design & Development
3. NME-023 Reliability Engineering
4. NME-024 Unconventional Manufacturing Processes



**U.P. TECHNICAL UNIVERSITY, LUCKNOW**  
**STUDY & EVALUATION SCHEME**

**B. Tech. Mechanical Engineering / Production Engineering / Industrial & Production Engineering / Mechanical & Industrial Engineering**  
**[Effective from Session 20016-17]**

**YEAR IV, SEMESTER-VII**

S. No.	Subject Code	Name of the Subject	Periods			Evaluation Scheme				Subject Total	Credit
			L	T	P	Sessional Assessment			ESE		
						CT	TA	Total			
<b>THEORY SUBJECT</b>											
1	NOE-071 to 074	Open Elective -I	3	1	0	30	20	50	100	150	4
2	NME-701	CAD	3	1	0	30	20	50	100	150	4
3	NME-702	Automobile Engineering	3	1	0	30	20	50	100	150	4
4	NME-031 to NME-034	Departmental Elective – III	3	1	0	30	20	50	100	150	4
5	NME-041 to NME-044	Departmental Elective – IV	3	1	0	30	20	50	100	150	4
<b>PRACTICAL/DESIGN/DRAWING</b>											
5	NME-751	CAD/CAM Lab	0	0	2	10	10	20	30	50	1
6	NME-752	I. C. Engine and Automobile Lab.	0	0	2	10	10	20	30	50	1
7	NME-753	INDUSTRIAL TRG.	0	0	2	-	50	50	-	50	1
8	NME-754	PROJECT	0	0	3	-	50	50	-	50	2
	GP-701	GP	-	-	-	-	-	50	-	50	-
		<b>TOTAL</b>	<b>15</b>	<b>5</b>	<b>9</b>					<b>1000</b>	<b>25</b>

**Note-** Practical Training-1 & 2 (4-weeks each) done after 4<sup>th</sup> & 6<sup>th</sup> Semesters would be evaluated in 7<sup>th</sup> semester through report and viva voce etc.  
Project should be initiated in 7<sup>th</sup> semester beginning (End Semester Examination to be conducted for evaluation for 7<sup>th</sup> sem), and should be complete by the end of 8<sup>th</sup> semester with good Report and power-point Presentation etc.

**Open Electives – I**

- NOE-071 Entrepreneurship Development
- NOE-072 Quality Management
- NOE-073 Operations Research
- NOE-074 Introduction to Biotechnology

**Departmental Elective III**

- NME-031 Computer Aided Manufacturing
- NME-032 Project Management
- NME-033 Computational Fluid Dynamics
- NME-034 Composite materials

**Departmental Elective IV**

- NME-041 Total Quality Management
- NME-042 Thermal Turbo Machines
- NME-043 Mechanical System Design
- NME-044 Automation and Robotics

  
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**U.P. TECHNICAL UNIVERSITY, LUCKNOW**  
**STUDY & EVALUATION SCHEME**

B. Tech. Production Engineering / Industrial & Production Engineering / Mechanical & Industrial Engineering  
[Effective from Session 20016-17]

YEAR IV, SEMESTER-VIII

S. No.	Subject Code	Name of the Subject	Periods			Evaluation Scheme			Subject Total	Credit	
			L	T	P	Sessional Assessment					ESE
						CT	TA	Total			
<b>THEORY SUBJECT</b>											
1	NOE-081 to 084	Open Elective -II	3	1	0	30	20	50	100	150	4
2	NPI-801	Quality Control	3	1	0	30	20	50	100	150	4
3	NME-051 to NME-055	Departmental Elective -V	3	1	0	30	20	50	100	150	4
4	NME-061 to NME-065	Departmental Elective -VI	3	1	0	30	20	50	100	150	4
<b>PRACTICAL/DESIGN/DRAWING</b>											
5	NME-851	SEMINAR	0	0	3	-	50	50	-	50	2
6	NME-852	PROJECT	0	0	12	-	100	100	200	300	7
7	GP-801	GP	-	-	-	-	-	50	-	50	-
		<b>TOTAL</b>	<b>12</b>	<b>4</b>	<b>15</b>					<b>1000</b>	<b>25</b>

**Open Electives – II**

NOE-081 Non Conventional Energy Resources  
NOE-082 Nonlinear Dynamic Systems  
NOE-083 Product Development  
NOE-084 Automation and Robotics

**Departmental Elective V**

NME-051 Operations Research  
NME-052 Design of Thermal Systems  
NME-053 Advance Synthesis of machines  
NME-054 Industrial Automation  
NME-055 Advance Welding Technology

**Departmental Elective VI**

NME-061 Experimental Stress Analysis  
NME-062 Plant Layout and Material Handling  
NME-063 Additive Manufacturing  
NME-064 Computer Aided Process Planning  
NME-065 Non Destructive Testing

  
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**U.P. TECHNICAL UNIVERSITY, LUCKNOW**  
**STUDY & EVALUATION SCHEME**

B. Tech. Mechanical Engineering  
[Effective from Session 2016-17]

YEAR IV, SEMESTER-VIII

S. No.	Subject Code	Name of the Subject	Periods			Evaluation Scheme			Subject Total	Credit	
			L	T	P	Sessional Assessment		ESE			
						CT	TA				Total
<b>THEORY SUBJECT</b>											
1	NOE-081 to 084	Open Elective -II	3	1	0	30	20	50	100	150	4
2	NME-801	Power Plant Engineering	3	1	0	30	20	50	100	150	4
3	NME-051 to NME-055	Departmental Elective -V	3	1	0	30	20	50	100	150	4
4	NME-061 to NME-065	Departmental Elective -VI	3	1	0	30	20	50	100	150	4
<b>PRACTICAL/DESIGN/DRAWING</b>											
5	NME-851	SEMINAR	0	0	3	-	50	50	-	50	2
6	NME-852	PROJECT	0	0	12	-	100	100	200	300	7
7	GP-801	GP	-	-	-	-	-	50	-	50	-
		<b>TOTAL</b>	<b>12</b>	<b>4</b>	<b>15</b>					<b>1000</b>	<b>25</b>

**Open Electives – II**

NOE-081 Non Conventional Energy Resources  
NOE-082 Nonlinear Dynamic Systems  
NOE-083 Product Development  
NOE-084 Automation and Robotics

**Departmental Elective V**

NME-051 Operations Research  
NME-052 Design of Thermal Systems  
NME-053 Advance Synthesis of machines  
NME-054 Industrial Automation  
NME-055 Advance Welding Technology

**Departmental Elective VI**

NME-061 Experimental Stress Analysis  
NME-062 Plant Layout and Material Handling  
NME-063 Additive Manufacturing  
NME-064 Computer Aided Process Planning  
NME-065 Non Destructive Testing.

  
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# UTTAR PRADESH TECHNICAL UNIVERSITY LUCKNOW

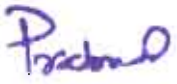


## SYLLABUS

of

**B. Tech. Civil Engineering  
(2<sup>nd</sup> Year)**

[Effective Form session 2014-15]

  
Director  
IMS Engineering College  
Ghaziabad

**STUDY & EVALUATION SCHEME**  
**B. Tech. Civil Engineering**  
**[Effective Form session 2014-15]**

**YEAR II, SEMESTER-III**

S. No.	Subject Code	Name of the Subject	Periods			Evaluation Scheme				Subject Total	Credits
			L	T	P	Sessional Assessment			ESE		
						CT	TA	Total			
<b>THEORY SUBJECT</b>											
1	NAS-301/ NOE-031 to NOE-039	Engg Mathematics-III/ Science Based Elective	3	1	0	30	20	50	100	150	4
2	NCE-301	Fluid Mechanics	3	1	0	30	20	50	100	150	4
3	NCE-302	Building Materials & Construction	3	1	0	30	20	50	100	150	4
4	NME-302	Mechanics of Solids	3	1	0	30	20	50	100	150	4
5	NHU-301/ NHU-302	Industrial Psychology/ Industrial Sociology	2	0	0	15	10	25	50	75	2
6	NCE-303	Surveying-I	2	1	0	15	10	25	50	75	3
	AUC-001/ AUC-002	<i>Human Value &amp; Professional Ethics/Cyber Security</i>	2	0	0	15	10	25	50	75*	
<b>PRACTICAL/DESIGN/DRAWING SUBJECTS</b>											
7	NCE-351	Fluid Mechanics Lab.	0	0	3	10	10	20	30	50	1
8	NCE-352	Building Materials Lab	0	0	2	10	10	20	30	50	1
9	NCE-353	Surveying Lab	0	0	3	10	10	20	30	50	1
10	NCE-354	Building Planning & Drawing	0	0	2	10	10	20	30	50	1
11	NGP-301	NGP						50		50	
		<b>TOTAL</b>	18	5	10					1000	25

*NOTE: Up to IV semesters – common to Mechanical and related branches (such as Production, Industrial, Manufacturing, Automobile, Aeronautical etc.).*

**Science Based Open Elective:**

- NOE031 Introduction to Soft Computing (Neural Network, Fuzzy Logic and Genetic Algorithm)
- NOE032 Nano Sciences
- NOE033 Laser Systems and Applications
- NOE034 Space Sciences
- NOE035 Polymer Science & Technology
- NOE036 Nuclear Science
- NOE037 Material Science
- NOE038 Discrete Mathematics
- NOE039 Applied Linear Algebra

\*Human values & Professional Ethics /Cyber Security will be offered as a compulsory audit course for which passing marks are 30% in End Semester Examination and 40% in aggregate.

*P. K. Singh*  
 Director  
 IMS Engineering College  
 Ghaziabad

**STUDY & EVALUATION SCHEME**  
**B. Tech. Civil Engineering**  
**[Effective Form session 2014-15]**

**YEAR II, SEMESTER-IV**

S. No.	Subject Code	Name of the Subject	Periods			Evaluation Scheme			Subject Total	Credits	
			L	T	P	Sessional Assessment					ESE
						CT	TA	Total			
<b>THEORY SUBJECT</b>											
1	NOE-041 to NOE-049/ NAS-401	Science Based Elective/ Engg Mathematics-III	3	1	0	30	20	50	100	150	4
2	NCE-401	Structural Analysis-I	3	1	0	30	20	50	100	150	4
3	NCE-402	Geo-informatics	3	1	0	30	20	50	100	150	4
4	NCE-403	Hydraulics & Hydraulic Machines	3	1	0	30	20	50	100	150	4
5	NHU-402/ NHU-401	Industrial Sociology/Industrial Psychology	2	0	0	15	10	25	50	75	2
6	NCE-404	Engineering Geology	2	1	0	15	10	25	50	75	3
	AUC-002/ AUC-001	Cyber Security/Human Value & Professional Ethics	2	0	0	15	10	25	50	75*	
<b>PRACTICAL/DESIGN/DRAWING SUBJECT</b>											
7	NCE-451	Structural Analysis Lab	0	0	3	10	10	20	30	50	1
8	NCE-452	Geo-informatics Lab	0	0	3	10	10	20	30	50	1
9	NCE-453	Hydraulics & Machine Lab	0	0	2	10	10	20	30	50	1
10	NCE-455	CBSNT Lab	0	0	2	10	10	20	30	50	1
11	NGP-401	NGP						50		50	
		<b>TOTAL</b>	<b>18</b>	<b>5</b>	<b>10</b>					<b>1000</b>	<b>25</b>
		<b>Industrial Training-I of 4 weeks after IV semester or Minor fabrication project involving work for nearly 4 weeks, which will be evaluated in VII semester</b>									

**NOTE:** Practical summer training-I of 4-weeks after IV –semester or Minor fabrication project will be evaluated in VII semester

**Science Based Open Elective:**

- NOE-041 Introduction to Soft Computing (Neural Network, Fuzzy Logic and Genetic Algorithm)  
 NOE-042 Nano Sciences  
 NOE-043 Laser Systems and Applications  
 NoE-044 Space Sciences  
 NOE-045 Polymer Science & Technology  
 NOE-046 Nuclear Science  
 NOE-047 Material Science  
 NOE-048 Discrete Mathematics  
 NOE-049 Applied Linear Algebra

\*Human values & Professional Ethics /Cyber Security will be offered as a compulsory audit course for which passing marks are 30% in End Semester Examination and 40% in aggregate.

*Prabhu*  
 Director  
 IMS Engineering College  
 Ghaziabad

**U. P. TECHNICAL UNIVERSITY,  
IET CAMPUS, SITAPUR ROAD, LUCKNOW- 226 021**



**COURSE STRUCTURE AND SYLLABUS  
(EFFECTIVE FROM Session: 2015-16)**

**B.Tech. (Civil Engineering)**

**Third Year (5th & 6th Semester)**

JULY 10, 2015

1

  
Director  
IMS Engineering College  
Ghaziabad

U.P. TECHNICAL UNIVERSITY, LUCKNOW  
STUDY & EVALUATION SCHEME  
B. Tech. Civil Engineering  
(Effective from the session – 2015-16)

Third Year, 5th Semester

S No	Course Code	Subject	Period			Evaluation Scheme				Subject Total	Credit
			L	T	P	Sessional Exam			ESE		
						CT	TA	Total			
<b>THEORY SUBJECTS</b>											
1	NHU 501	Engineering Economics	2	0	0	15	10	25	50	75	2
2	NCE 501	Geotechnical Engineering	3	1	0	30	20	50	100	150	4
3	NCE 502	Transportation Engineering-1	3	1	0	30	20	50	100	150	4
4	NCE 503	Environmental Engineering-1	2	1	0	15	10	25	50	75	3
5	NCE 504	Structural Analysis-2	3	1	0	30	20	50	100	150	4
6	NCE 505	Design of Concrete Structure-1	3	1	0	30	20	50	100	150	4
<b>PRACTICAL/DRAWING/DESIGN</b>											
7	NCE 551	Geotechnical Engineering Lab	-	-	3	10	10	20	30	50	1
8	NCE 552	Transportation Engineering Lab	-	-	3	10	10	20	30	50	1
9	NCE 553	CAD Lab-1	-	-	3	10	10	20	30	50	1
10	NCE 554	Estimation Costing & Valuation			3	10	10	20	30	50	1
11	NGP 501	General Proficiency	-	-	-	-	-	50	-	50	
		<b>TOTAL</b>	<b>16</b>	<b>5</b>	<b>12</b>					<b>1000</b>	<b>25</b>

U.P. TECHNICAL UNIVERSITY, LUCKNOW  
STUDY & EVALUATION SCHEME  
B. Tech. Civil Engineering  
(Effective from the session – 2015-16)

Third Year, 6th Semester

S. No	Course Code	Subject	Period			Evaluation Scheme				Subject Total	Credit
			L	T	P	Sessional Exam			ESE		
						CT	TA	Total			
<b>THEORY SUBJECTS</b>											
1	NHU 601	Industrial Management	2	0	0	15	10	25	50	75	2
2	NCE 601	Design of Concrete Structure-2	3	1	0	30	20	50	100	150	4
3	NCE 602	Environmental Engineering-2	3	1	0	30	20	50	100	150	4
4	NCE 603	Construction Technology & Management	3	1	0	30	20	50	100	150	4
5	NCE 011-014	Departmental Elective-1	3	1	0	30	20	50	100	150	4
6	NCE 021-024	Departmental Elective-2	2	1	0	15	10	25	50	75	3
<b>PRACTICAL/DRAWING/DESIGN</b>											
7	NCE 651	Structural Detailing Lab	0	0	3	10	10	20	30	50	1
8	NCE 652	Environmental Engineering Lab	0	0	3	10	10	20	30	50	1
9	NCE 653	CAD Lab-2	0	0	3	10	10	20	30	50	1
10	NCE 654	Survey Camp*	0	0	0	0	0	50		50	1
11	NGP 601	General Proficiency	0	0	0	0	0	50	-	50	
		<b>TOTAL</b>	<b>16</b>	<b>5</b>	<b>9</b>					<b>1000</b>	<b>25</b>

Note: \*The teaching load of survey camp will be counted as equivalent to 0-0-3

Departmental Elective -1 (Full Unit Course with Credit: 4)

Sl.No.	Code and Course
5 (A)	NCE 011 – Advanced Foundation Design
5 (B)	NCE 012 – Matrix Analysis of Structures
5 (C)	NCE 013 – Environmental Management for Industries
5 (D)	NCE 014 – Principals of Town Planning and Architecture

Departmental Elective – 2 (Half Unit Course with Credit: 3)

Sl.No.	Code and Course
6 (A)	NCE 021 – Advanced Concrete Design
6 (B)	NCE 022 – Earth and Earth Retaining Structure
6 (C)	NCE 023 – Transportation System and Planning
6 (D)	NCE 024 – Rural Water supply and Sanitation

**Dr. A.P. J. ABDUL KALAM TECHNICAL UNIVERSITY,  
LUCKNOW**



**Syllabus**

**4<sup>th</sup> Year**

**[Effective from session 2016-17]**

**B. Tech. Civil Engineering**

*Prabhat*

Director  
IMS Engineering College  
Ghaziabad



**Dr. A.P.J. ABDUL KALAM TECHNICAL UNIVERSITY, LUCKNOW**

**Study & Evaluation Scheme**

B Tech Civil Engineering

Effective from session 2016-17

Final Year, VII Semester

S No	Course Code	SUBJECT	PERIODS			Evaluation Scheme			Subject Total	Credit	
			L	T	P	Sessional Exam		ESE			
						CT	TA				Total
<b>THEORY SUBJECT</b>											
1	NOE071- NOE074	Open Elective – I	3	1	0	30	20	50	100	150	4
2	NCE031- NCE035	Department Elective-III	3	1	0	30	20	50	100	150	4
3	NCE041- NCE044	Department Elective-IV	3	1	0	30	20	50	100	150	4
4	NCE701	Design of Steel Structures	3	1	0	30	20	50	100	150	4
5	NCE702	Water Resources Engg	3	1	0	30	20	50	100	150	4
<b>PRACTICAL / DESIGN / DRAWING</b>											
6	NCE751	Seminar	0	0	4		-	50	-	50	1
7	NCE752	Industrial Training**					-	50	-	50	1
8	NCE753	Project#	0	0	4		-	100	-	100	3
9	NGP 701	General Proficiency	-	-	-	-	-	50	-	50	1
		<b>Total</b>	<b>15</b>	<b>5</b>	<b>8</b>					<b>1000</b>	<b>26</b>

\*\* 4 weeks Industrial Training after VI semester to be evaluated in VII semester.

# Project should be initiated in VII semester beginning and should be completed by the end of VIII semester.

Departmental Elective-3 (Full Unit Course with Credit: 4)

S. No.	Code and Course
2 (A)	NCE 031 - Bridge Engineering
2 (B)	NCE 032 - Finite Element Methods
2(C)	NCE 033 - Environmental Geo-technology
2(D)	NCE 034 - Industrial Pollution Control & Env. Audit
2 (E)	NCE 035 – Engineering Hydrology

Departmental Elective-4 (Full Unit Course with Credit: 4)

S. No.	Code and Course
3 (A)	NCE 041 - Precast and Modular Construction Practices
3 (B)	NCE 042 - Plastic Analysis of Structures
3 (C)	NCE 043 - Open Channel Flow
3 (D)	NCE 044 – Tunnel Engineering

  
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**Dr. A.P.J. ABDUL KALAM TECHNICAL UNIVERSITY, LUCKNOW**

**Study & Evaluation Scheme**

B Tech Civil Engineering

Effective from session 2016-17

Final Year, VIII Semester

S No	Course Code	SUBJECT	PERIODS			Evaluation Scheme			Subject Total	Credit	
			L	T	P	Sessional Exam		ESE			
						CT	TA				Total
THEORY SUBJECT											
1	NOE081- NOE084	Open Elective – II	3	1	0	30	20	50	100	150	4
2	NCE051- NCE054	Departmental Elective-V	3	1	0	30	20	50	100	150	4
3	NCE061- NCE064	Departmental Elective-VI	3	1	0	30	20	50	100	150	4
4	NCE801	Transportation Engineering -II	3	1	0	30	20	50	100	150	3
PRACTICAL / DESIGN / DRAWING											
5	NCE851	Project	0	0	12		100	100	250	350	8
6	NGP 801	General Proficiency	-	-	-	-	-	50	-	50	1
		Total	12	4	12					1000	24

Departmental Elective-5 (Full Unit Course with Credit: 4)

S. No.	Code and Course
2 (A)	NCE 051 - Computer Aided Design
2 (B)	NCE 052 - Analysis and Design of Hydraulic Structures
2 (C)	NCE 053 - Water Resources Systems
2 (D)	NCE 054 - Machine Foundation Design

Departmental Elective-6 (Full Unit Course with Credit: 4)

S. No.	Code and Course
3 (A)	NCE061 - Ground Improvement Techniques
3 (B)	NCE 062 - River Engineering
3 (C)	NCE 063 – Groundwater Management
3 (D)	NCE 064 - Earthquake Resistant Design of Structures

  
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## List of Open Electives for B. Tech. Courses

### OPEN ELECTIVE-I

NOE -071	Entrepreneurship Development
NOE-072	Quality Management
NOE-073	Operations Research
NOE-074	Introduction to Biotechnology

### OPEN ELECTIVE-II

NOE-081	Non Conventional Energy Resources
NOE-082	Nonlinear Dynamic Systems
NOE-083	Product Development
NOE-084	Automation & Robotics

**UTTAR PRADESH TECHNICAL UNIVERSITY**

**LUCKNOW**



**Syllabus**

**for**

**B.Tech. Biotechnology  
of  
Second Year**

**(Effective from the Session: 2014-15)**

*Prabhat*  
Director  
IMS Engineering College  
Ghaziabad

**STUDY AND EVALUATION SCHEME**  
**B.TECH. BIO-TECHNOLOGY**  
(Effective from the session: 2014-15)

2<sup>nd</sup> Year, Semester-III

S. No.	Subject Code	Name of Subject	Periods			Evaluation Scheme			Subject Total	Credit	
			L	T	P	Sessional Assessment		ESE			
						CT	TA				Total
<b>THEORY SUBJECT</b>											
1	NBT-301/ NOE-031- 039	Elementary Mathematics-III/ Science based Elective	3	1	0	30	20	50	100	150	4
2	NBT-302	Fluid Flow and Solid Handling	3	1	0	30	20	50	100	150	4
3	NBT-303	Biochemistry	3	1	0	30	20	50	100	150	4
4	NBT-304	Microbiology & Cell Biology	3	1	0	30	20	50	100	150	4
5	NHU- 301/NHU- 302	Industrial Psychology/ Industrial Sociology	2	0	0	15	10	25	50	75	2
6	NBT-305	Genetics & Molecular Biology	2	1	0	15	10	25	50	75	3
7	AUC-001/ AUC-002	<i>Human Values &amp; Professional Ethics/Cyber Security</i>	2	0	0	15	10	25	50	75*	
<b>PRACTICAL/DESIGN/DRAWING</b>											
7	NBT-351	Fluid Flow and Solid Handling Lab	0	0	3	10	10	20	30	50	1
8	NBT-352	Biochemistry Lab	0	0	3	10	10	20	30	50	1
9	NBT-353	Microbiology & Cell Biology Lab	0	0	2	10	10	20	30	50	1
10	NBT-354	Genetics & Molecular Biology Lab	0	0	2	10	10	20	30	50	1
11	NGP-301	NGP						50		50	
		<b>TOTAL</b>	<b>18</b>	<b>5</b>	<b>10</b>					<b>1000</b>	<b>25</b>

L: Lecture T: Tutorial P: Practical/Project CT: Class Test TA: Teacher's Assessment, ESE: End Semester Examination

TA = 10 (5 for teachers assessment plus 5 for attendance)

TA = 20 (10 for teachers assessment plus 10 for attendance)

ESE (Practical) = 30 (10 marks for practical exam. 10 marks viva. 4 marks for lab records and 6 marks for quiz)

**Science Based Open Elective:**

NOE031 Introduction to Soft Computing (Neural Network, Fuzzy Logic and Genetic Algorithm)

NOE032 Nano Sciences

NOE033 Laser Systems and Applications

NOE034 Space Sciences

NOE035 Polymer Science & Technology

NOE036 Nuclear Science

NOE037 Material Science

NOE038 Discrete Mathematics

NOE039 Applied Linear Algebra

\* Human Values & Professional Ethics will be offered as compulsory Audit Course for which passing marks are 40% in theory & 50% in aggregate. Student will be required to audit it within the period of their study.

There will not be carry over facility for this course and a failed student will be required to repeat this course.

  
Director  
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Ghaziabad

**STUDY AND EVALUATION SCHEME**  
**B.TECH. BIO-TECHNOLOGY**  
(Effective from the session: 2014-15)

2<sup>nd</sup> Year, Semester-IV

S. No.	Subject Code	Name of Subject	Periods			Evaluation Scheme			Subject Total	Credit	
			L	T	P	Sessional Assessment		ESE			
						CT	TA				Total
<b>THEORY SUBJECT</b>											
1	NOE-041-049/ NBT-401	Science based Elective/ Elementary Mathematics-III	3	1	0	30	20	50	100	150	4
2	NBT-402	Heat & Mass Transfer	3	1	0	30	20	50	100	150	4
3	NBT-403	Enzyme Engineering	3	1	0	30	20	50	100	150	4
4	NBT-404	Immunology	3	1	0	30	20	50	100	150	4
5	NHU-402/ NHU-401	Industrial Sociology/ Industrial Psychology	2	0	0	15	10	25	50	75	2
6	NBT-405	Molecular Dynamics & Bioenergetics	2	1	0	15	10	25	50	75	3
	AUC-002/ AUC-001	<i>Cyber Security/ Human Values &amp; Professional Ethics</i>	2	0	0	15	10	25	50	75*	
<b>PRACTICAL/DESIGN/DRAWING</b>											
7	NBT-452	Heat & Mass Transfer Lab	0	0	3	10	10	20	30	50	1
8	NBT-453	Enzyme Engineering Lab	0	0	3	10	10	20	30	50	1
9	NBT-454	Immunology Lab	0	0	2	10	10	20	30	50	1
10	NBT-455	Molecular Dynamics & Bioenergetics Lab	0	0	2	10	10	20	30	50	1
11	NGP-401	GP						50		50	
		<b>TOTAL</b>	<b>18</b>	<b>5</b>	<b>10</b>					<b>1000</b>	<b>25</b>

L: Lecture T: Tutorial P: Practical/Project CT: Class Test TA: Teacher's Assessment, ESE: End Semester Examination

TA = 10 (5 for teachers assessment plus 5 for attendance)

TA = 20 (10 for teachers assessment plus 10 for attendance)

ESE (Practical) = 30 (10 marks for practical exam. 10 marks viva. 4 marks for lab records and 6 marks for quiz)

**Science Based Open Elective:**

NOE-041 Introduction to Soft Computing (Neural Network, Fuzzy Logic and Genetic Algorithm)

NOE-042 Nano Sciences

NOE-043 Laser Systems and Applications

NOE-044 Space Sciences

NOE-045 Polymer Science & Technology

NOE-046 Nuclear Science

NOE-047 Material Science

NOE-048 Discrete Mathematics

NOE-049 Applied Linear Algebra

\* Human Values & Professional Ethics will be offered as compulsory Audit Course for which passing marks are 40% in theory & 50% in aggregate. Student will be required to audit it within the period of their study. There will not be carry over facility for this course and a failed student will be required to repeat this course.

  
Director  
IMS Engineering College  
Ghaziabad

**UTTAR PRADESH TECHNICAL UNIVERSITY**

**LUCKNOW**



**Syllabus**

**for**

**B.Tech. Biotechnology  
of  
Third Year**

**(Effective from the Session: 2015-16)**

  
Director  
IMS Engineering College  
Ghaziabad



**U.P. TECHNICAL UNIVERSITY, LUCKNOW**

Study and Evaluation Scheme

**B.TECH. BIOTECHNOLOGY**

(Effective from the session: 2015-16)

3<sup>rd</sup> Year, Semester-V

S. No.	Subject Code	Name of Subject	Periods			Evaluation Scheme			Subject Total	Credit	
			L	T	P	Sessional Assessment		ESE			
						CT	TA				Total
<b>THEORY SUBJECT</b>											
1	NBT-501	Genetic Engineering	3	1	0	30	20	50	100	150	4
2	NBT-502	Bioinformatics-I	3	1	0	30	20	50	100	150	4
3	NBT-503	Bioprocess Engineering	3	1	0	30	20	50	100	150	4
4	NBT-504	Plant Biotechnology	3	1	0	30	20	50	100	150	4
5	NBT-505	Modern Analytical Techniques	2	1	0	15	10	25	50	75	3
6	NHU-501	Engineering Economics	2	0	0	15	10	25	50	75	2
<b>PRACTICAL/DESIGN/DRAWING</b>											
7	NBT-551	Genetic Engineering Lab	0	0	3	10	10	20	30	50	1
8	NBT-552	Bioinformatics-I Lab	0	0	2	10	10	20	30	50	1
9	NBT-553	Bioprocess Engineering Lab	0	0	3	10	10	20	30	50	1
10	NBT-554	Plant Biotechnology Lab	0	0	2	10	10	20	30	50	1
11	NGP-501	GP						50		50	
		<b>TOTAL</b>	<b>16</b>	<b>5</b>	<b>10</b>					<b>1000</b>	<b>25</b>

L: Lecture T: Tutorial P: Practical/Project CT: Class Test TA: Teacher's Assessment, ESE: End Semester Examination

TA = 10 (5 for teachers assessment plus 5 for attendance)

TA = 20 (10 for teachers assessment plus 10 for attendance)

ESE (Practical) = 30 (10 marks for practical exam. 10 marks viva. 4 marks for lab records and 6 marks for quiz)



# U.P. TECHNICAL UNIVERSITY, LUCKNOW

## Study and Evaluation Scheme B.TECH. BIOTECHNOLOGY

(Effective from the session: 2015-16)

3<sup>rd</sup> Year, Semester-VI

S. No.	Subject Code	Name of Subject	Periods			Evaluation Scheme			Subject Total	Credit	
			L	T	P	Sessional Assessment		ESE			
						CT	TA				Total
<b>THEORY SUBJECT</b>											
1	NBT-601	Fermentation Biotechnology	3	1	0	30	20	50	100	150	4
2	NBT-602	Environmental Biotechnology	3	1	0	30	20	50	100	150	4
3	NBT-603	Bioinformatics-II	3	1	0	30	20	50	100	150	4
4	NBT-011/NBT-012/NBT-013	Departmental Elective-I	3	1	0	30	20	50	100	150	4
5	NBT-021/NBT-022/NBT-023	Departmental Elective-II	2	1	0	15	10	25	50	75	3
6	NHU-601	Industrial Management	2	0	0	15	10	25	50	75	2
<b>PRACTICAL/DESIGN/DRAWING</b>											
7	NBT-651	Fermentation Biotechnology Lab	0	0	3	10	10	20	30	50	1
8	NBT-652	Environmental Biotechnology Lab	0	0	2	10	10	20	30	50	1
9	NBT-653	Bioinformatics-II Lab	0	0	2	10	10	20	30	50	1
10	NBT-654	Seminar	0	0	3		50	50		50	1
11	NGP-601	GP						50		50	
		<b>TOTAL</b>	<b>16</b>	<b>5</b>	<b>10</b>					<b>1000</b>	<b>25</b>

L: Lecture T: Tutorial P: Practical/Project CT: Class Test TA: Teacher's Assessment, ESE: End Semester Examination

TA = 10 (5 for teachers assessment plus 5 for attendance)

TA = 20 (10 for teachers assessment plus 10 for attendance)

ESE (Practical) = 30 (10 marks for practical exam. 10 marks viva. 4 marks for lab records and 6 marks for quiz)

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

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**Syllabus for**

**B.Tech. Biotechnology  
of  
Fourth Year**

**(Effective from the Session: 2016-17)**

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

## LUCKNOW

### Study and Evaluation Scheme B.TECH. BIO-TECHNOLOGY (Effective from the session: 2016-17)

4<sup>th</sup> Year, Semester-VII

S. No.	Subject Code	Name of Subject	Periods			Evaluation Scheme			Subject Total	Credit	
			L	T	P	Sessional Assessment					ESE
						CT	TA	Total			
<b>THEORY SUBJECT</b>											
1		Open Elective-I	3	1	0	30	20	50	100	150	4
2	NBT701	Bioseparation & DSP	3	1	0	30	20	50	100	150	4
3	NBT702	Bioethics, Biosafety & IPR	3	1	0	30	20	50	100	150	4
4	NBT031 to 033	Departmental Elective-III	3	1	0	30	20	50	100	150	4
5	NBT041 to 043	Departmental Elective-IV	2	1	0	15	10	25	50	75	2
<b>PRACTICAL/DESIGN/DRAWING</b>											
6	NBT751	Bioseparation & DSP Lab	0	0	2	10	10	20	30	50	1
7	NBT752	Industrial Training	0	0	3		75	75		75	2
8	NBT753	Project	0	0	8		50	50	100	150	4
9	NGP701	GP						50		50	
		<b>TOTAL</b>	<b>14</b>	<b>4</b>	<b>13</b>					<b>1000</b>	<b>25</b>

L: Lecture T: Tutorial P: Practical/Project CT: Class Test TA: Teacher's Assessment, ESE: End Semester Examination

TA = 10 (5 for teachers assessment plus 5 for attendance)

TA = 20 (10 for teachers assessment plus 10 for attendance)

ESE (Practical) = 30 (10 marks for practical exam. 10 marks viva. 4 marks for lab records and 6 marks for quiz)

*Prabhu*  
Director  
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**Study and Evaluation Scheme  
B.TECH. BIO-TECHNOLOGY  
(Effective from the session: 2016-17)**

4<sup>th</sup> Year, Semester-VIII

S. No.	Subject Code	Name of Subject	Periods			Evaluation Scheme			Subject Total	Credit	
			L	T	P	Sessional Assessment					ESE
						CT	TA	Total			
<b>THEORY SUBJECT</b>											
1		Open Elective-II	3	1	0	30	20	50	100	150	4
2	NBT801	Animal Biotechnology	3	1	0	30	20	50	100	150	4
3	NBT051 to 053	Departmental Elective-V	3	1	0	30	20	50	100	150	4
4	NBT061 to 063	Departmental Elective-VI	3	1	0	30	20	50	100	150	4
<b>PRACTICAL/DESIGN/DRAWING</b>											
5	NBT851	Seminar	0	0	3		100	100		100	2
6	NBT852	Project			12		100	100	150	250	7
7	NGP801	GP						50		50	
		<b>TOTAL</b>	<b>12</b>	<b>4</b>	<b>15</b>					<b>1000</b>	<b>25</b>

L: Lecture T: Tutorial P: Practical/Project CT: Class Test TA: Teacher's Assessment, ESE: End Semester Examination

TA = 10 (5 for teachers assessment plus 5 for attendance)

TA = 20 (10 for teachers assessment plus 10 for attendance)

ESE (Practical) = 30 (10 marks for practical exam. 10 marks viva. 4 marks for lab records and 6 marks for quiz)

\* Human Values & Professional Ethics will be offered as compulsory Audit Course for which passing marks are 40% in theory & 50% in aggregate. Student will be required to audit it within the period of their study. There will not be carry over facility for this course and a failed student will be required to repeat this course.

*Prabhat*  
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## DEPARTMENTAL ELECTIVES

### **Elective-III:**

NBT031: Food Biotechnology

NBT032: Structural Biology

NBT033: Waste Treatment & Management

### **Elective-IV:**

NBT041: Agriculture Biotechnology

NBT042: Applications of Natural Products

NBT043: Forensic Diagnosis

### **Elective-V:**

NBT051: Fundamentals of Stem Cell Technology

NBT052: Biomedical Instrumentation

NBT053: Industrial Biotechnology

### **Elective-VI:**

NBT061: Entrepreneurship in Biotechnology

NBT062: Biomaterials

NBT063: Metabolic Engineering

  
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**Evaluation Scheme & Syllabus**

**for**

**MBA First Year**

**On**

**Choice Based Credit System**

**(Effective from the Session: 2016-17)**

*P. Prasad*  
Director  
IMS Engineering College  
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**Dr. APJ Abdul Kalam Technical University, Lucknow**  
**Study and Evaluation Scheme**

**MBA Evaluation Scheme For Session 2016-17**

**Semester I**

S. No.	Course Title	Credit	Evaluation Scheme					
			Sessional Exams			ESE	Total	
			CT	TA	Total			
1	RMB101	Management Concepts and Applications	3	20	10	30	70	100
2	RMB102	Managerial Economics	3	20	10	30	70	100
3	RMB103	Financial Accounting for Managers	4	20	10	30	70	100
4	RMB104	Business Statistics	4	20	10	30	70	100
5	RMB105	Organisational Behaviour	3	20	10	30	70	100
6	RMB106	Marketing Management	4	20	10	30	70	100
7	RMB107	Business Communication	3	20	10	30	70	100
8	RMB108	Computer Application & Management Information System	3	20	10	30	70	100
		<b>TOTAL</b>	<b>27</b>					<b>800</b>

\* Non credit but qualifying

**Semester II**

S. No.	Course Title	Credit	Evaluation Scheme					
			Sessional Exams			ESE	Total	
			CT	TA	Total			
1	RMB201	Business Environment	3	20	10	30	70	100
2	RMB202	Human Resource Management	3	20	10	30	70	100
3	RMB203	Business Research Methods	3	20	10	30	70	100
4	RMB204	Financial Management	3	20	10	30	70	100
5	RMB205	Management Accounting & Control	3	20	10	30	70	100
6	RMB206	Production Operation & Supply Chain Management	3	20	10	30	70	100
7	RMB207	Quantitative Techniques for Managers	4	20	10	30	70	100
8	RMB208	Legal Aspects for Business	3	20	10	30	70	100
9	RMB209	Comprehaensive Viva	2					100
		<b>TOTAL</b>	<b>27</b>					<b>900</b>

  
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## STUDY AND EVALUATION SCHEME

COURSE: MBA Effective from Session 2013-2014 Year 2 Semester III

S.N.	Course Code	Subject	EVALUATION SCHEME				
			SESSIONAL EXAMS			ESE	Total
			CT	TA	Total		
1.	NMBA 031	Entrepreneurship Development	30	20	50	100	150
2.	NMBA 032	International Business Management	30	20	50	100	150
3.	NMBA 033	Rural Development	30	20	50	100	150
4.	NMBA 034	Project Management	30	20	50	100	150
5.		Specialization Group -1 Elective 1*	30	20	50	100	150
6.		Specialization Group -1 Elective 2*	30	20	50	100	150
7.		Specialization Group -2 Elective 1*	30	20	50	100	150
8.		Specialization Group -2 Elective 2*	30	20	50	100	150
9.	NMBA 035	Summer Training Project Report	-	-	-	-	150
10.	AUC-001/ AUC-002	** Human Value & Professional Ethics/ Cyber Security	15	10	25	50	75
		<b>Total</b>					<b>1350</b>

**\*\* Marks will be not added in TOTAL, it is qualifying paper.**

\*Human values & Professional Ethics /Cyber Security will be offered as a compulsory audit course for which passing marks are 30% in End Semester Examination and 40% in aggregate.

  
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## STUDY AND EVALUATION SCHEME

COURSE: MBA Effective from Session 2013-2014 Year2 Semester IV


S.N.	Course Code	Subject	EVALUATION SCHEME				
			SESSIONAL EXAMS			ESE	Total
			CT	TA	Total		
1.	NMBA 041	Strategic Management	30	20	50	100	150
2.	NMBA 042	Insurance & Risk Management	30	20	50	100	150
3.	NMBA 043	Hospitality & Tourism Management	30	20	50	100	150
4.	NMBA 044	Behavioral Finance	30	20	50	100	150
5.	-	Specialization Group -1 Elective 3*	30	20	50	100	150
6.	-	Specialization Group -2 Elective 3*	30	20	50	100	150
7.	NMBA 045	Research Project Report	30	20	50	100	150
8.	NMBA 046	Comprehensive Viva (CV)	-	-	-	-	100
	AUC-002/ AUC-001	** Cyber Security / Human Value & Professional Ethics	15	10	25	50	75
9.		Total	-	-	-	-	1150
		<b>Grand Total(Sem. 1 to 4)</b>					<b>5000</b>

TA – Teacher Assessment

CT – Cumulative Test

ESE - End Semester Examination.

\*Human values & Professional Ethics /Cyber Security will be offered as a compulsory audit course for which passing marks are 30% in End Semester Examination and 40% in aggregate.

  
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## ELECTIVE PAPERS

### Specialization Group: Human Resource

#### Course Code

1. NMBA HR 01 Leadership & Personality Development..... (III Semester)
2. NMBA HR02 Industrial Relations & Labour Enactments..... (III Semester)
3. NMBA HR 03 Negotiation & Counseling ..... (IV Semester)

### Specialization Group: Marketing

#### Course Code

1. NMBA MK 01 Consumer Behaviour & Customer Loyalty..... (III Semester)
2. NMBA MK 02 Integrated Marketing Communications ..... (III Semester)
3. NMBA MK 03 Retailing & Distribution Management ..... (IV Semester)

### Specialization Group: Financial Management

#### Course Code

1. NMBA FM 01 Security Analysis & Investment Management .....(III Semester).
2. NMBA FM 02 Management of Financial Institutions & Services.... (III Semester).
3. NMBA FM 03 Tax Planning and Management ..... (IV Semester)

### Specialization Group: Information Technology

#### Course Code

1. NMBA IT 01 Database Management System ..... (III Semester)
2. NMBA IT 02 System Analysis & Design..... (III Semester)
3. NMBA IT 03 Data Communication & Network ..... (IV Semester)

### Specialization Group: International Business

#### Course Code

1. NMBA IB01 International Marketing Management ..... (III Semester)
2. NMBA IB02 International Logistics & Documentation ..... (III Semester)
3. NMBA IB03 International Financial Management ..... (IV Semester)

### Specialization Group: Rural Development

#### Course Code

1. NMBA RD0 1 Rural Marketing..... (III Semester)
2. NMBA RD 02 Micro Finance, Small Group Management, and Cooperatives .... (III Semester)
3. NMBA RD03 Food Technology & Processing Management ..... (IV Semester)

*P. S. Chaudhary*

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**Syllabus**

**For**

**M.Tech. (Biotechnology)**

(Effective from the Session: 2016-17)

2017-18

2018-19

2019-20

*Prabhu*  
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IMS Engineering College  
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**Study and Evaluation Scheme  
M.TECH. BIO-TECHNOLOGY  
(Effective from the session: 2016-17)**

S No.	Subject Code	Name of the Subject	Periods			Credit	Theory			Practical		Subject Total
			L	T	P		CT	TA	ESE	TA	ESE	
			1	MTBT101	Applied Biochemistry & Molecular Biology		3	0	0	3	20	
2	MTBT102	Bioprocess Engineering & Technology	3	0	0	3	20	10	70	--	--	100
3	MTBT01?	Departmental Elective - I	3	0	0	3	20	10	70	--	--	100
4	MTBT02?	Departmental Elective - II	3	0	0	3	20	10	70	--	--	100
5		Research Process & Methodology	3	0	0	3	20	10	70	--	--	100
6	MTBT151	Applied Biochemistry & Molecular Biology Lab	--	--	3	2	--	--	--	20	30	50
7	MTBT152	Bioprocess Engineering & Technology Lab	--	--	2	1	--	--	--	20	30	50
		<b>Total</b>				<b>18</b>						<b>600</b>

L: Lecture T: Tutorial P: Practical/Project CT: Class Test TA: Teacher's Assessment, ESE: End Semester Examination

**Departmental Elective-I**

1. MTBT011: Immunology & Vaccine Technology
2. MTBT012: Quality Control in Biotechnology
3. MTBT013: Applied Clinical Research

**Departmental Elective-II**

1. MTBT021: Biological Treatment of Waste Water
2. MTBT022: Nano Biotechnology & Toxicology
3. MTBT023: Industrial Biotechnological Products

  
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**Study and Evaluation Scheme  
M.TECH. BIO-TECHNOLOGY  
(Effective from the session: 2016-17)**

1<sup>st</sup> Year, II<sup>nd</sup> Semester

S No.	Subject Code	Name of the Subject	Periods			Credit	Theory			Practical		Subject Total
			L	T	P		CT	TA	ESE	TA	ESE	
1	MTBT201	Bioinformatics	3	0	0	3	20	10	70	--	--	100
2	MTBT202	Entrepreneurship, IPR & Biosafety	3	0	0	3	20	10	70	--	--	100
3	MTBT03?	Departmental Elective - III	3	0	0	3	20	10	70	--	--	100
4	MTBT04?	Departmental Elective - IV	3	0	0	3	20	10	70	--	--	100
5	MTBT05?	Departmental Elective - V	3	0	0	3	20	10	70	--	--	100
6	MTBT251	Bioinformatics Lab	--	--	3	2	--	--	--	20	30	50
7	MTBT252	Seminar-I	--	--	2	1	--	--	--	50	--	50
		<b>Total</b>				<b>18</b>						<b>600</b>

**L: Lecture T: Tutorial P: Practical/Project CT: Class Test TA: Teacher's Assessment, ESE: End Semester Examination**

**Departmental Elective-III**

1. MTBT031: Genetic Engineering
2. MTBT032: Applied Food Biotechnology
3. MTBT033: Molecular Modelling & Industrial Application

**Departmental Elective-IV**

1. MTBT041: Bioreactor Analysis & Design
2. MTBT041: Enzyme Technology & Industrial Application
3. MTBT043: Applied Bioenergy

**Departmental Elective-V**

1. MTBT051: Tissue Culture Techniques
2. MTBT052: Diagnostic Techniques in Biotechnology
3. MTBT053: Fundamentals of Stem Cell Technology

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**Study and Evaluation Scheme  
M.TECH. BIO-TECHNOLOGY  
(Effective from the session: 2017-18)**

2<sup>nd</sup> Year, III<sup>rd</sup> Semester

S No.	Subject Code	Name of the Subject	Periods			Credit	Theory			Practical		Subject Total
			L	T	P		CT	TA	ESE	TA	ESE	
1	MTBT351	Seminar-II	0	0	6	3	--	--	--	100	--	100
2	MTBT352	Dissertation	0	0	30	15	--	--	--	200	300	500
		<b>Total</b>				<b>18</b>						<b>600</b>

2<sup>nd</sup> Year, IV<sup>th</sup> Semester

S No.	Subject Code	Name of the Subject	Periods			Credit	Theory			Practical		Subject Total
			L	T	P		CT	TA	ESE	TA	ESE	
1	MTBT451	Dissertation (Final)	0	0	3	3	--	--	--	200	400	600
		<b>Total</b>				<b>18</b>						<b>600</b>

L: Lecture T: Tutorial P: Practical/Project CT: Class Test TA: Teacher's Assessment, ESE: End Semester Examination

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



**Syllabus**

**For**

**M.Tech. (Computer Science & Engineering)**

**(Effective from the Session: 2016-17)**

  
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IMS Engineering College  
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**Course structure and evaluation scheme for M.Tech Computer Science & Engineering**  
**(Effective from the Session: 2016-17)**  
**SEMESTER –I**

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

**SEMESTER –II**

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

  
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## SEMESTER –III

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

## SEMESTER –IV

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

### Departmental Elective I

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

### Departmental Elective II

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

### Departmental Elective III-

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

  
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#### Departmental Elective IV

1. MTCS041: Distributed Databases
2. MTCS042: Software Project Planning & Management
3. MTCS043: Network Management
4. MTCS044: Robotics
5. MTCS045: Data Centre Management
6. MTCS046: Digital Forensics

#### Departmental Elective V

1. MTCS051: Optimization Techniques
2. MTCS052: Digital Image Processing
3. MTCS053: Professional Aspects in Software Engineering
4. MTCS054: Storage Area Network
5. MTCS055: Optical Networks
6. MTCS056: Advanced Data Modeling

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



**Syllabus**

**For**

**M.Tech. (Mechanical Engineering)**

**(Effective from the Session: 2016-17)**

1

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

**Semester -I**

S. No.	Subject Code	Name of the Subject	Periods			Credit	Evaluation Scheme					Subject Total
			L	T	P		Theory			Practical		
							CT	TA	ESE	TA	ESE	
1	MTME 101	Simulation, Modelling & Analysis	3	0	0	3	20	10	70	--	--	100
2	MTME 102	Operations Research	3	0	0	3	20	10	70	--	--	100
3	MTME 01?	Departmental Elective-I	3	0	0	3	20	10	70	--	--	100
4		Departmental Elective-II	3	0	0	3	20	10	70	--	--	100
5		Research Process & Methodology	3	0	0	3	20	10	70	--	--	100
6	MTME 151	Simulation Modeling & Analysis Lab	-	-	3	2	--	--	--	20	30	50
7	MTME 152	Operations Research Lab	-	-	2	1	--	--	--	20	30	50
		<b>Total</b>				<b>18</b>						<b>600</b>

<b>Departmental Elective-I</b>	MTME 011	CAD/CAM
	MTME 012	Advanced Heat & Mass Transfer
	MTME 013	Renewable Energy System
	MTME 014	Reliability, Maintenance Management & Safety

<b>Departmental Elective-II</b>	MTTE 021	Turbo Machines
	MTME 021	Advanced Mechanical Vibrations
	MTTE 023	Advanced I.C. Engines
	MTME 022	Fracture Mechanics

**Semester –II**

S. No.	Subject Code	Name of the Subject	Periods			Credit	Evaluation Scheme					Subject Total
			L	T	P		Theory			Practical		
							CT	TA	ESE	TA	ESE	
	MTME 201	Computer Integrated Manufacturing (CIM)	3	0	0	3	20	10	70	--	--	100
I	MTME 202	Advanced Mechanics Of Solids	3	0	0	3	20	10	70	--	--	100
3		Departmental Elective-III	3	0	0	3	20	10	70	--	--	100
4	MTME 04?	Departmental Elective-IV	3	0	0	3	20	10	70	--	--	100
5	MTME 05?	Elective -V	3	0	0	3	20	10	70	--	--	100
6	MTME 251	Computer Integrated Manufacturing (CIM) Lab	-	-	3	2	--	--	--	20	30	50
7	MTME 252	Seminar-I	-	-	-	1	--	--	--	50	--	50
		<b>Total</b>				<b>18</b>						<b>600</b>

<b>Departmental Elective – III</b>	MTME 031	Advanced Finite Element Analysis
	MTME 032	Industrial Automation And Robotics
	MTME 033	Advanced Welding Technology
	MTTE 202	Computational Fluid Dynamics

<b>Departmental Elective – IV</b>	MTME 041	Optimization Techniques & Design Of Experiments
	MTME 042	Total Quality Management
	MTME 043	Advanced Mechanical Design
	MTME 044	Management Information System

<b>Elective – V</b>	MTME 051	Flexible Manufacturing System
	MTME 052	Machine Vision
	MTME 053	Additive Manufacturing And Tooling
	MTME 054	Modern Manufacturing Process

**Semester – III**

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

**Semester – IV**

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

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



**Syllabus**

**For**

**M.Tech.**

**VLSI DESIGN**

**(VLSI & EMBEDDED SYSTEM,  
ELECTRONICS DESIGN & TECHNOLOGY,  
ELECTRONICS CIRCUITS & SYSTEM DESIGN)**

**(Effective from the Session: 2016-17)**

  
Director  
IMS Engineering College  
Ghaziabad

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

**Study and Evaluation Scheme M. Tech. in VLSI DESIGN**

(Effective from Session 2016-17)

**First Year, Semester-I**

Sr. No.	Course Code	Subject	Periods			Credit	Evaluation Scheme					Subject Total
			L	T	P		Theory			Practical		
							CT	TA	ESE	TA	ESE	
1.	MTVL101	Low Power VLSI Design	3	0	0	3	20	10	70	-	-	100
2.	MTVL102	FPGA Architecture & Applications	3	0	0	3	20	10	70	-	-	100
3.	MTVL01?	Departmental Elective I	3	0	0	3	20	10	70	-	-	100
4.	MTVL02?	Departmental Elective II	3	0	0	3	20	10	70	-	-	100
5.		Research Process & Methodology	3	0	0	3	20	10	70	-	-	100
6.	MTVL151	VLSI Circuit Design Lab	0	0	3	2	-	-	-	20	30	50
7.	MTVL152	FPGA Design Lab	0	0	3	1	-	-	-	20	30	50
		<b>Total</b>	<b>15</b>	<b>0</b>	<b>6</b>	<b>18</b>						<b>600</b>

**First Year, Semester-II**

Sr. No.	Course Code	Subject	Periods			Credit	Evaluation Scheme					Subject Total
			L	T	P		Theory			Practical		
							CT	TA	ESE	TA	ESE	
1.	MTVL201	Hardware Description Languages	3	0	0	3	20	10	70	-	-	100
2.	MTVL202	VLSI DSP Architectures	3	0	0	3	20	10	70	-	-	100
3.	MTVL03?	Departmental Elective III	3	0	0	3	20	10	70	-	-	100
4.	MTVL04?	Departmental Elective IV	3	0	0	3	20	10	70	-	-	100
5.	MTVL05?	Departmental Elective V	3	0	0	3	20	10	70	-	-	100
6.	MTVL251	Advanced VLSI Design Lab	0	0	3	2	-	-	-	20	30	50
7.	MTVL252	Seminar I	0	0	3	1	-	-	-	50		50
		<b>Total</b>	<b>15</b>		<b>6</b>	<b>18</b>						<b>600</b>

  
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Second Year, Semester-III

Sr. No.	Course Code	Subject	Periods			Credit	Evaluation Scheme					Subject Total
			L	T	P		Theory			Practical		
							CT	TA	ESE	TA	ESE	
1.	MTVL351	Seminar II	0	0	6	3	-	-	-	100	-	100
2.	MTVL352	Dissertation	0	0	30	15	-	-	-	200	300	500
		Total			36	18						600

Second Year, Semester-IV

S. No.	Course Code	Subject	Periods			Credit	Evaluation Scheme					Subject Total
			L	T	P		Theory			Practical		
							CT	TA	ESE	TA	ESE	
1.	MTVL451	Dissertation	0	0	36	18	-	-	-	200	400	600
		Total			36	18						600

Departmental Elective I

- MTVL 011: SOC Design
- MTVL 012: Designing with ASICS
- MTVL 013: Analog VLSI Design

Departmental Elective II

- MTVL 021: Advanced Embedded Systems
- MTVL 022: Testing of VLSI Circuits
- MTVL 023: Digital IC Design

Departmental Elective III

- MTVL 031: Advanced Microcontroller & Systems
- MTVL 032: VLSI based Signal Processing Architectures
- MTVL 033: Analog IC Design

Departmental Elective IV

- MTVL 041: Real Time Operating Systems
- MTVL 042: VLSI Testing & Testability
- MTVL 043: Memory Technologies

Departmental Elective V

- MTVL 051: Algorithms for VLSI Design Automation
- MTVL 052: MEMS & Micro Sensor Design
- MTVL 053: Embedded System for Wireless Communication

  
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# UTTAR PRADESH TECHNICAL UNIVERSITY, LUCKNOW



## Syllabus

[Effective from Session 2013-14]

(1<sup>st</sup> Year)

**[Common to all B.Tech. Branch except  
Agricultural Engineering]**

B.Tech. First Year (Common to all B.Tech. Courses except B.Tech. Agricultural Engg.)

(Effective from the session 2013-14)

S. No.	Subject Code	Name of the Subject	Semester-I			Evaluation Scheme			Subject Total	Credit	
			Periods			Sessional Assesment					ESE
			L	T	P	CT	TA	Total			
THEORY SUBJECT											
1	NAS 103	Engg. Mathematics-I	3	1	0	30	20	50	100	150	4
2	NEC-101/ NAS-104	Electronics Engg./ Professional Communication	3	1	0	30	20	50	100	150	4
3	NAS102/ NME102	Engg. Chemistry/Engg. Mechanics	3	1	0	30	20	50	100	150	4
4	NEE-101/ NCS 101	Basic Electrical Engg./Computer System and Programming in C	3	1	0	30	20	50	100	150	4
5	NAS-101	Engg. Physics-I	2	1	0	15	10	25	50	75	3
6	NME-101/ NAS-105	Basic Manufacturing Processes/Environment & Ecology	2	0	0	15	10	25	50	75	2
PRACTICAL/DESIGN/DRAWING											
7	NAS-152/ NME-152	Engg. Chemistry Lab/ Engg. Mechanics Lab	0	0	2	10	10	20	30	50	1
8	NEE-151/ NCS-151	Basic Electrical Engg. Lab/ Computer Programming Lab	0	0	2	10	10	20	30	50	1
9	NEW-151/ NCE-151	Workshop Practice/ Computer Aided Engg. Graphics	0	1	3	10	10	20	30	50	2
10	NAS-151/ NAS-154	Engg. Physics Lab/ Professional Communication Lab	0	0	2	10	10	20	30	50	1
11	GP-101	GP						50		50	
		TOTAL	16	6	9					1000	26

L- Lecture

T-Tutorial

P-Practical

CT-Cumulative Test

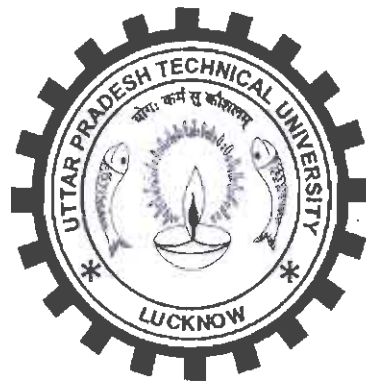
TA-Teacher's Assessment

ESE-End Semester Examination

## Semester-II

S. No.	Subject Code	Name of the Subject	Periods			Evaluation Scheme			Subject Total	Credit	
			L	T	P	Sessional Assesment					ESE
						CT	TA	Total			
THEORY SUBJECT											
1	NAS-203	Engg. Mathematics-II	3	1	0	30	20	50	100	150	4
2	NEC-201/ NAS-204	Electronics Engg./ Professional Communication	3	1	0	30	20	50	100	150	4
3	NAS-202/ NME-202	Engg. Chemistry/ Engg. Mechanics	3	1	0	30	20	50	100	150	4
4	NEE-201/ NCS-201	Basic Electrical Engg./ Computer System and Programming in C	3	1	0	30	20	50	100	150	4
5	NAS-201	Engg. Physics-II	2	1	0	15	10	25	50	75	3
6	NME-201 / NAS-205	Basic Manufacturing Processes / Environment & Ecology	2	0	0	15	10	25	50	75	2
PRACTICAL/DESIGN/DRAWING											
7	NAS-252/ NME-252	Engg. Chemistry Lab/ Engg. Mechanics Lab	0	0	2	10	10	20	30	50	1
8	NEE-251/ NCS-251	Basic Electrical Engg. Lab/ Computer Programming Lab	0	0	2	10	10	20	30	50	1
9	NWS-251/ NCE-251	Workshop Practice / Computer Aided Engg. Graphics	0	1	3	10	10	20	30	50	2
10	NAS-251/ NAS-254	Engg. Physics Lab / Professional Communication Lab	0	0	2	10	10	20	30	50	1
11	GP-201	GP						50		50	
		TOTAL	16	6	9					1000	26

# UTTAR PRADESH TECHNICAL UNIVERSITY, LUCKNOW



## Syllabus

[Effective from Session 2013-14]

(1<sup>st</sup> Year)

**[B.Tech. Biotechnology First Year]**

(Effective from the session 2013-14)

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Semester-I

1

  
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Ghaziabad

S. No.	Subject Code	Name of the Subject	Periods			Evaluation Scheme			Subject Total	Credit	
			L	T	P	Sessional Assessment		ESE			
						CT	TA				Total
THEORY SUBJECT											
1	NAS 103/ NBT-101	Engg. Mathematics-I/ Remedial Biology-I	3	1	0	30	20	50	100	150	4
2	NEC-101/ NAS-104	Electronics Engg./ Professional Communication	3	1	0	30	20	50	100	150	4
3	NAS102/ NME102	Engg. Chemistry/Engg. Mechanics	3	1	0	30	20	50	100	150	4
4	NEE-101/ NCS 101	Basic Electrical Engg./Computer System and Programming in C	3	1	0	30	20	50	100	150	4
5	NAS-101	Engg. Physics-I	2	1	0	15	10	25	50	75	3
6	NME-101/ NAS-105	Basic Manufacturing Processes/Environment & Ecology	2	0	0	15	10	25	50	75	2
PRACTICAL/DESIGN/DRAWING											
7	NAS-152/ NME-152	Engg. Chemistry Lab/ Engg. Mechanics Lab	0	0	2	10	10	20	30	50	1
8	NEE-151/ NCS-151	Basic Electrical Engg. Lab/ Computer Programming Lab	0	0	2	10	10	20	30	50	1
9	NEW-151/ NCE-151	Workshop Practice/ Computer Aided Engg. Graphics	0	1	3	10	10	20	30	50	2
10	NAS-151/ NAS-154	Engg. Physics Lab/ Professional Communication Lab	0	0	2	10	10	20	30	50	1
11	GP-101	GP						50		50	
		TOTAL	16	6	9					1000	26

L- Lecture

T -Tutorial

P-Practical

CT-Cumulative Test

TA-Teacher's Assessment

ESE-End Semester Examination

## Semester-II

S. No.	Subject Code	Name of the Subject	Periods			Evaluation Scheme				Subject Total	Credit
			L	T	P	Sessional Assesment			ESE		
						CT	TA	Total			
<b>THEORY SUBJECT</b>											
1	NAS-203/ NBT-201	Engg. Mathematics-II/ Remedial Biology-II	3	1	0	30	20	50	100	150	4
2	NEC-201/ NAS-204	Electronics Engg./ Professional Communication	3	1	0	30	20	50	100	150	4
3	NAS-202/ NME-202	Engg. Chemistry/ Engg. Mechanics	3	1	0	30	20	50	100	150	4
4	NEE-201/ NCS-201	Basic Electrical Engg./ Computer System and Programming in C	3	1	0	30	20	50	100	150	4
5	NAS-201	Engg. Physics-II	2	1	0	15	10	25	50	75	3
6	NME-201 / NAS-205	Basic Manufacturing Processes / Environment & Ecology	2	0	0	15	10	25	50	75	2
<b>PRACTICAL/DESIGN/DRAWING</b>											
7	NAS-252/ NME-252	Engg. Chemistry Lab/ Engg. Mechanics Lab	0	0	2	10	10	20	30	50	1
8	NEE-251/ NCS-251	Basic Electrical Engg. Lab/ Computer Programming Lab	0	0	2	10	10	20	30	50	1
9	NWS-251/ NCE-251	Workshop Practice / Computer Aided Engg. Graphics	0	1	3	10	10	20	30	50	2
10	NAS-251/ NAS-254	Engg. Physics Lab / Professional Communication Lab	0	0	2	10	10	20	30	50	1
11	GP-201	GP						50		50	
		<b>TOTAL</b>	16	6	9					1000	26

**UTTAR PRADESH TECHNICAL UNIVERSITY  
LUCKNOW**



**Syllabus  
for  
B.TECH. COMPUTER SCIENCE AND ENGINEERING  
of  
Second Year**

(Effective from the Session: 2014-15)

  
Director  
IMS Engineering College  
Ghaziabad



## B.TECH COMPUTER SCIENCE AND ENGINEERING STUDY & EVALUATION SCHEME

2<sup>nd</sup> Year

SEMESTER III

S. No.	Course Code	Subject	Periods			Evaluation Scheme				Subject Total	Credit
			L	T	P	Sessional Exam			ESE		
						CT	TA	Total			
<b>THEORY SUBJECT</b>											
1	NAS-301/ NOE-031 to NOE-039	Mathematics III/Science Based Open Elective	3	1	0	30	20	50	100	150	4
2	NEC 309	Digital Logic Design	3	1	0	30	20	50	100	150	4
3	NCS 301	Data Structures Using C	3	1	0	30	20	50	100	150	4
4	NCS 302	Discrete Structures And Graph Theory	3	1	0	30	20	50	100	150	4
5	NHU301/ NHU302	Industrial Psychology/ Industrial Sociology	2	0	0	15	10	25	50	75	2
6	NCS 303	Computer Based Numerical And Statistical Techniques	2	1	0	15	10	25	50	75	3
	AUC-001/ AUC-002	Human Values & Professional Ethics/ Cyber Security	2	0	0	15	10	25	50	75*	
<b>PRACTICAL/DESIGN/DRAWING</b>											
7	NEC 359	Digital Logic Design Lab	0	0	3	10	10	20	30	50	1
8	NCS 351	Data Structures Using C Lab	0	0	3	10	10	20	30	50	1
9	NCS 353	Numerical Techniques Lab	0	0	2	10	10	20	30	50	1
10	NCS 355	Advance Programming Lab	0	0	2	10	10	20	30	50	1
11	NGP 301	GP						50		50	
		<b>TOTAL</b>	<b>18</b>	<b>5</b>	<b>10</b>					<b>1000</b>	<b>25</b>

### Science Based Open Elective:

- NOE031 Introduction to Soft Computing (Neural Network, Fuzzy Logic and Genetic Algorithm)
- NOE032 Nano Sciences
- NOE033 Laser Systems and Applications
- NOE034 Space Sciences
- NOE035 Polymer Science & Technology
- NOE036 Nuclear Science
- NOE037 Material Science
- NOE038 Discrete Mathematics
- NOE039 Applied Linear Algebra

\*Human values & Professional Ethics /Cyber Security will be offered as a compulsory audit course for which passing marks are 30% in End Semester Examination and 40% in aggregate

  
 Director  
 IMS Engineering College  
 Ghaziabad

**B.TECH COMPUTER SCIENCE AND ENGINEERING  
STUDY & EVALUATION SCHEME**

SEMESTER IV

2<sup>nd</sup> Year

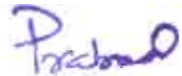
S. No.	Course Code	Subject	Periods			Evaluation Scheme			Subject Total	Credit	
			L	T	P	Sessional Exam					ESE
						CT	TA	Total			
<b>THEORY SUBJECT</b>											
1	NOE-041 to NOE-049/ NAS-401	Science Based Open Elective/ Mathematics III	3	1	0	30	20	50	100	150	4
2	NHU401/ NHU402	Industrial Psychology /Industrial Sociology	2	0	0	15	10	25	50	75	2
3	NEC-409	Introduction to Microprocessor	3	1	0	30	20	50	100	150	4
4	NCS-401	Operating System	3	1	0	30	20	50	100	150	4
5	NCS-402	Theory Of Automata and Formal Launguage	3	1	0	30	20	50	100	150	4
6	NCS-403	Computer Graphics	2	1	0	15	10	25	50	75	3
7	AUC-002/ AUC-001	Cyber Security / Human Values & Professional Ethics	2	0	0	15	10	25	50	75*	
<b>PRACTICAL/DESIGN/DRAWING</b>											
7	NEC-459	Microprocessor Lab	0	0	3	10	10	20	30	50	1
8	NCS 451	Operating System Lab	0	0	3	10	10	20	30	50	1
9	NCS 453	Computer Graphics Lab	0	0	2	10	10	20	30	50	1
10	NCS 455	Functional and Logic Programming Lab	0	0	2	10	10	20	30	50	1
11	NGP-401	GP						50		50	
		<b>TOTAL</b>	<b>18</b>	<b>5</b>	<b>10</b>					<b>1000</b>	<b>25</b>

The details of Science Based Electives are to be provided by The Boards of Studies of Science Subjects; these are common to all branches.

Science Based Open Elective:

- NOE-041 Introduction to Soft Computing (Neural Network, Fuzzy Logic and Genetic Algorithm)
- NOE-042 Nano Sciences
- NOE-043 Laser Systems and Applications
- NOE-044 Space Sciences
- NOE-045 Polymer Science & Technology
- NOE-046 Nuclear Science
- NOE-047 Material Science
- NOE-048 Discrete Mathematics
- NOE-049 Applied Linear Algebra

\*Human values & Professional Ethics /Cyber Security will be offered as a compulsory audit course for which passing marks are 30% in End Semester Examination and 40% in aggregate.

  
 Director  
 IMS Engineering College  
 Ghaziabad

# UTTAR PRADESH TECHNICAL UNIVERSITY LUCKNOW



## SYLLABUS

Bachelor of Computer Science & Engineering  
&  
Bachelor of Computer Science & Information  
Technology

3<sup>rd</sup> Year (V & VI Semester)  
(Effective from Session: 2015-2016)

*P. Prakash*  
Director  
IMS Engineering College  
Ghaziabad

U.P. TECHNICAL UNIVERSITY, LUCKNOW

STUDY EVALUATION SCHEME

B. TECH. COMPUTER SCIENCE & ENGINEERING

&

B. TECH. COMPUTER SCIENCE AND INFORMATION TECHNOLOGY

YEAR THIRD, SEMESTER –V

(Effective from the session: 2015-16)

S. No	Course Code	Subject	Periods			Evaluation Scheme				Subject Total	Credit
			L	T	P	Sessional Exam			ESE		
						CT	TA	Total			
THEORY SUBJECT											
1	NCS 501	Design and Analysis of Algorithm	3	1	0	30	20	50	100	150	4
2	NCS 502	Database Management System	3	1	0	30	20	50	100	150	4
3	NCS 503	Principle of Programming Language	3	1	0	30	20	50	100	150	4
4	NCS 504	Web Technology	3	1	0	30	20	50	100	150	4
5	NCS 505	Computer Architecture	2	1	0	15	10	25	50	75	3
6	NHU5 01	Engineering Economics	2	0	0	15	10	25	50	75	2
PRACTICAL/DESIGN/DRAWING											
7	NCS 551	Design and Analysis of Algorithm Lab	0	0	3	10	10	20	30	50	1
8	NCS 552	DBMS Lab	0	0	3	10	10	20	30	50	1
9	NCS 553	Principle of Programming Language	0	0	2	10	10	20	30	50	1
10	NCS 554	Web Technology Lab	0	0	2	10	10	20	30	50	1
11	NGP 501	GP						50		50	
		TOTAL	16	5	10					1000	25

  
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 Ghaziabad

# STUDY EVALUATION SCHEME

## B. TECH. COMPUTER SCIENCE & ENGINEERING & B. TECH. COMPUTER SCIENCE AND INFORMATION TECHNOLOGY

YEAR THIRD, SEMESTER -VI

(Effective from the session : 2015-16)

S. No	Course Code	Subject	Periods			Evaluation Scheme				Subject Total	Credit
			L	T	P	Sessional Exam			ESE		
						CT	TA	Total			
<b>THEORY SUBJECT</b>											
1	NCS 601	Computer Networks	3	1	0	30	20	50	100	150	4
2	NCS 602	Software Engineering	3	1	0	30	20	50	100	150	4
3	NCS 603	Compiler Design	3	1	0	30	20	50	100	150	4
4		Departmental Elective-I	3	1	0	30	20	50	100	150	4
5		Departmental Elective-II	2	1	0	15	10	25	50	75	3
6	NHU 601	Industrial Management	2	0	0	15	10	25	50	75	2
<b>PRACTICAL/DESIGN/DRAWING</b>											
7	NCS 651	Computer Networks Lab	0	0	3	10	10	20	30	50	1
8	NCS 652	Software Engineering Lab	0	0	3	10	10	20	30	50	1
9	NCS 653	Compiler Design Lab	0	0	2	10	10	20	30	50	1
10	NCS 654	SEMINAR	0	0	2		50	50		50	1
11	NGP 601	GP						50		50	
		<b>TOTAL</b>	<b>16</b>	<b>5</b>	<b>10</b>					<b>1000</b>	<b>25</b>

### Departmental Elective-I

1. NCS 061: Computational Geometry
2. NCS 062: Complexity Theory
3. NCS 063: Parallel Algorithm
4. NCS 064: Approximation & Randomized Algorithm
5. NCS 065: Concurrent System

### Departmental Elective-II

1. NCS 066: Data Warehousing & Data Mining
2. NCS 067: Distributed Database
3. NCS 068: E-Commerce
4. NCS 069: Advance DBMS
5. NCS 070: Human Computer Interface

*Prabhu*  
Director  
IMS Engineering College  
Ghaziabad

**G. B. Technical University, Lucknow**

**SYLLABUS**

**B.Tech THIRD and FOURTH YEAR**

*( Semester V, VI, VII and VIII)*

**Computer Science & Engineering  
and  
Information Technology**

**Effective from session 2010-11**

## B.Tech

### Study and Evaluation Scheme Effective from session 2011-12

### Computer Science & Engineering Year-IV, Semester VII

SNo	Subject Code	Subject	Period	Evaluation Scheme			Exam	Total
				Sessional				
				CT	TA	Total		
1	EOE-071- EOE-074	Open Elective-I	3-1-0	30	20	50	100	150
2	ECS-701	Distributed Systems	3-1-0	30	20	50	100	150
3	ECS-702	Digital Image Processing	3-1-0	30	20	50	100	150
4		CS-Elective-I	3-1-0	30	20	50	100	150
5		CS-Elective-II	3-1-0	30	20	50	100	150
<b>Practicals / Training /Projects</b>								
6	ECS-751	Distributed Systems Lab*	0-0-2	-	25	25	25	50
7	ECS-752	Digital Image Processing Lab*	0-0-2	-	25	25	25	50
8	ECS-753	Project	0-0-4	-	50	50	-	50
9	ECS-754	Industrial Training Viva-Voce	0-0-2	-	50	50	-	50
10	GP-701	General Proficiency	-	-	-	-	-	50

\* At least 10 problems are to be considered based on corresponding theory course.

## B.Tech

### Study and Evaluation Scheme Effective from session 2011-12

### Computer Science & Engineering Year-IV, Semester VIII

SNo	Subject Code	Subject	Period	Evaluation Scheme			Exam	Total
				Sessional				
				CT	TA	Total		
1	EOE-081- EOE-084	Open Elective-II	3-1-0	30	20	50	100	150
2	ECS-801	Artificial Intelligence	3-1-0	30	20	50	100	150
3		CS-Elective-III	3-1-0	30	20	50	100	150
4		CS-Elective-IV	3-1-0	30	20	50	100	150
<b>Practicals / Training /Projects</b>								
5	ECS-851	Artificial Intelligence Lab*	0-0-2	-	25	25	25	50
6	ECS-852	Project	0-0-12	-	100	100	200	300
7	GP-801	General Proficiency	-	-	-	-	-	50

**Note:**

1. Practical Training done after 6<sup>th</sup> Semester would be evaluated in 7<sup>th</sup> semester through Report and Viva-voce.
  2. Project has to be initiated in 7<sup>th</sup> semester beginning and completed by the end of 8<sup>th</sup> semester with proper report and demonstration.
- \* At least 10 problems are to be considered based on corresponding theory course.



## List of Electives for B.Tech (Computer Science & Engineering)

### CS-Elective-I

ECS-071	Computational Geometry
ECS-072	Computational Complexity
ECS-073	Parallel Algorithms
ECS-074	Pattern Recognition

### CS-Elective-II

ECS-075	Data Mining & Data Warehousing
ECS-076	Distributed Database
EIT-073	Bioinformatics
ECS-077	Data Compression
EIT-074	IT in Forensic Science

### CS-Elective-III

ECS-081	Real Time System
ECS-082	Software Project Management
ECS-083	Embedded Systems
ECS-084	Cryptography & Network Security

### CS-Elective-IV

ECS-085	Neural Networks
ECS-086	Natural Language Processing
ECS-087	Mobile Computing
*ECS-088	Soft Computing

*\*Note: ECS- 088 may be opted by only those students who didn't opt EOE-041 as an open elective*

**UTTAR PRADESH TECHNICAL UNIVERSITY  
LUCKNOW**



**Syllabus  
for  
B.TECH. INFORMATION TECHNOLOGY  
of  
Second Year**

**(Effective from the Session: 2014-15)**

*P. S. Chandra*  
Director  
IMS Engineering College  
Ghaziabad

**B.TECH INFORMATION TECHNOLOGY  
STUDY & EVALUATION SCHEME**

2<sup>nd</sup> Year

SEMESTER III

S. No.	Course Code	Subject	Periods			Evaluation Scheme				Subject Total	Credit
			L	T	P	Sessional Exam			ESE		
						CT	TA	Total			
<b>THEORY SUBJECT</b>											
1	NAS-301/ NOE-031 to NOE-039	Mathematics III/Science Based Open Elective	3	1	0	30	20	50	100	150	4
2	NEC-309	Digital Logic Design	3	1	0	30	20	50	100	150	4
3	NCS-301	Data Structures Using C	3	1	0	30	20	50	100	150	4
4	NCS-302	Discrete Structures And Graph Theory	3	1	0	30	20	50	100	150	4
5	NHU-301/ NHU-302	Industrial Psychology/ Industrial Sociology	2	0	0	15	10	25	50	75	2
6	NCS-303	Computer Based Numerical And Statistical Techniques	2	1	0	15	10	25	50	75	3
	AJC-001/ AJC-002	Human Values & Professional Ethics/ Cyber Security	2	0	0	15	10	25	50	75*	
<b>PRACTICAL/DESIGN/DRAWING</b>											
7	NEC 359	Digital Logic Design Lab	0	0	3	10	10	20	30	50	1
8	NCS 351	Data Structures Using C Lab	0	0	3	10	10	20	30	50	1
9	NCS 353	Numerical Techniques Lab	0	0	2	10	10	20	30	50	1
10	NCS 355	Advance Programming Lab	0	0	2	10	10	20	30	50	1
11	NGP 301	GP						50		50	
		<b>TOTAL</b>	<b>18</b>	<b>5</b>	<b>10</b>					<b>1000</b>	<b>25</b>

**Science Based Open Elective:**

- NOE031 Introduction to Soft Computing (Neural Network, Fuzzy Logic and Genetic Algorithm)
- NOE032 Nano Sciences
- NOE033 Laser Systems and Applications
- NOE034 Space Sciences
- NOE035 Polymer Science & Technology
- NOE036 Nuclear Science
- NOE037 Material Science
- NOE038 Discrete Mathematics
- NOE039 Applied Linear Algebra

\*Human values & Professional Ethics /Cyber Security will be offered as a compulsory audit course for which passing marks are 30% in End Semester Examination and 40% in aggregate.

  
 Director  
 IMS Engineering College  
 Ghaziabad.

**B.TECH INFORMATION TECHNOLOGY  
STUDY & EVALUATION SCHEME**

2<sup>nd</sup> Year

SEMESTER IV

S. No.	Course Code	Subject	Periods			Evaluation Scheme				Subject Total	Credit
			L	T	P	Sessional Exam			ESE		
						CT	TA	Total			
<b>THEORY SUBJECT</b>											
1	NOE-041 to NOE-049/ NAS-401	Science Based Open Elective/ Mathematics III	3	1	0	30	20	50	100	150	4
2	EHU-402/ EHU -401	Industrial Sociology/ Industrial Psychology	2	0	0	15	10	25	50	75	2
3	NEC-408	Information Theory and Coding	3	1	0	30	20	50	100	150	4
4	NCS- 401	Operating System	3	1	0	30	20	50	100	150	4
5	NCS- 402	Theory Of Automata and Formal Launguage	3	1	0	30	20	50	100	150	4
6	NIT-401	Multimedia and Animation	2	1	0	15	10	25	50	75	3
7	AUC-002/ AUC-001	Cyber Security / Human Values & Professional Ethics	2	0	0	15	10	25	50	75*	
<b>PRACTICAL/DESIGN/DRAWING</b>											
7	NCS-451	Operating System Lab	0	0	3	10	10	20	30	50	1
8	NIT-451	Multimedia and Animation Lab	0	0	3	10	10	20	30	50	1
9	NCS-455	Functional and Logic Programming Lab	0	0	3	10	10	20	30	50	1
10	NIT-456	Colloquium	0	0	3	10	10	20	30	50	1
11	NGP-401	GP						50		50	
		<b>TOTAL</b>	<b>18</b>	<b>5</b>	<b>10</b>					<b>1000</b>	<b>25</b>

**Science Based Open Elective:**

- NOE-041 Introduction to Soft Computing (Neural Network, Fuzzy Logic and Genetic Algorithm)
- NOE-042 Nano Sciences
- NOE-043 Laser Systems and Applications
- NOE-044 Space Sciences
- NOE-045 Polymer Science & Technology
- NOE-046 Nuclear Science
- NOE-047 Material Science
- NOE-048 Discrete Mathematics
- NOE-049 Applied Linear Algebra

\*Human values & Professional Ethics /Cyber Security will be offered as a compulsory audit course for which passing marks are 30% in End Semester Examination and 40% in aggregate.

  
 Director  
 IMS Engineering College  
 Ghaziabad

# UTTAR PRADESH TECHNICAL UNIVERSITY LUCKNOW



## SYLLABUS

### Bachelor of Information Technology

rd  
3 Year (V & VI Semester)

(Effective from Session 2015-2016)

  
Director  
IMS Engineering College  
Ghaziabad

**U.P. TECHNICAL UNIVERSITY, LUCKNOW**  
**STUDY EVALUATION SCHEME**  
**B. TECH. INFORMATION TECHNOLOGY**  
**YEAR THIRD, SEMESTER -V**  
(Effective from the session : 2015-16)

S. No	Course Code	Subject	Periods			Evaluation Scheme				Subject Total	Credit
			L	T	P	Sessional Exam			ESE		
						CT	TA	Total			
<b>THEORY SUBJECT</b>											
1	NCS 501	Design and Analysis of Algorithm	3	1	0	30	20	50	100	150	4
2	NCS 502	Database Management System	3	1	0	30	20	50	100	150	4
3	NCS 503	Principle of Programming Language	3	1	0	30	20	50	100	150	4
4	NCS 504	Web Technology	3	1	0	30	20	50	100	150	4
5	NIT 501	Management Information System	2	1	0	15	10	25	50	75	3
6	NHU 501	Engineering Economics	2	0	0	15	10	25	50	75	2
<b>PRACTICAL/DESIGN/DRAWING</b>											
7	NCS 551	Design and Analysis of Algorithm Lab	0	0	3	10	10	20	30	50	1
8	NCS 552	DBMS Lab	0	0	3	10	10	20	30	50	1
9	NCS 553	Principle of Programming Language Lab	0	0	2	10	10	20	30	50	1
10	NCS 554	Web Technology Lab	0	0	2	10	10	20	30	50	1
11	NGP 501	GP						50		50	
		<b>TOTAL</b>	<b>16</b>	<b>5</b>	<b>10</b>					<b>1000</b>	<b>25</b>

  
**Director**  
**IMS Engineering College**  
**Ghaziabad**

**U.P. TECHNICAL UNIVERSITY, LUCKNOW**  
**STUDY EVALUATION SCHEME**  
**B. TECH. INFORMATION TECHNOLOGY**  
**YEAR THIRD, SEMESTER –VI**  
**(Effective from the session : 2015-16)**

S. No	Course Code	Subject	Periods			Evaluation Scheme				Subject Total	Credit
			L	T	P	Sessional Exam			ESE		
						CT	TA	Total			
<b>THEORY SUBJECT</b>											
1	NCS 601	Computer Networks	3	1	0	30	20	50	100	150	4
2	NCS 602	Software Engineering	3	1	0	30	20	50	100	150	4
3	NCS 603	Compiler Design	3	1	0	30	20	50	100	150	4
4		Departmental Elective-I	3	1	0	30	20	50	100	150	4
5		Departmental Elective-II	2	1	0	15	10	25	50	75	3
6	NHU 601	Industrial Management	2	0	0	15	10	25	50	75	2
<b>PRACTICAL/DESIGN/DRAWING</b>											
7	NCS 651	Computer Networks Lab	0	0	3	10	10	20	30	50	1
8	NCS 652	Software Engineering Lab	0	0	3	10	10	20	30	50	1
9	NCS 653	Compiler Design Lab	0	0	2	10	10	20	30	50	1
10	NIT 654	SEMINAR	0	0	2		50	50		50	1
11	NGP 601	GP						50		50	
		<b>TOTAL</b>	<b>16</b>	<b>5</b>	<b>10</b>					<b>1000</b>	<b>25</b>

**Departmental Elective-I**

1. NIT 061: Information Retrieval and Management
2. NIT 062: Modeling & Simulation
3. NIT 063: Bioinformatics
4. NIT 064: Knowledge based & decision Support System
5. NIT 065: Geographic Information System

**Departmental Elective-II**

1. NCS 066: Data Warehousing & Data Mining
2. NCS 070: Human Computer Interface
3. NIT 066: E-Business Strategies
4. NCS 067: Distributed Database
5. NIT 067: Big Data

*Prabhu*  
 Director  
 IMS Engineering College  
 Ghaziabad

**G. B. Technical University, Lucknow**

**SYLLABUS**

**B.Tech THIRD and FOURTH YEAR**

*( Semester V, VI, VII and VIII)*

**Computer Science & Engineering  
and  
Information Technology**

**Effective from session 2010-11**



## B.Tech

### Study and Evaluation Scheme Effective from session 2011-12

#### Information Technology Year-IV, Semester-VII

SNo	Subject Code	Subject	Period	Evaluation Scheme				Total
				Sessional			Exam	
				CT	TA	Total		
1	EOE-071- EOE-074	Open Elective-I	3-1-0	30	20	50	100	150
2	EIT-701	Cryptography & Network Security	3-1-0	30	20	50	100	150
3	ECS-801	Artificial Intelligence	3-1-0	30	20	50	100	150
4		IT-Elective-II	3-1-0	30	20	50	100	150
5		IT-Elective-III	3-1-0	30	20	50	100	150
<b>Practicals / Training /Projects</b>								
6	EIT-751	Cryptography & Network Security Lab*	0-0-2	-	25	25	25	50
7	EIT-752	Artificial Intelligence Lab*	0-0-2	-	25	25	25	50
8	EIT-753	Project	0-0-4	-	50	50	-	50
9	EIT-754	Industrial Training Viva-Voce	0-0-2	-	50	50	-	50
10	GP-701	General Proficiency	-	-	-	-	-	50

\* At least 10 problems are to be considered based on corresponding theory course.

## B.Tech

### Study and Evaluation Scheme Effective from session 2011-12

#### Information Technology Year- IV, Semester-VIII

SNo	Subject Code	Subject	Period	Evaluation Scheme				Total
				Sessional			Exam	
				CT	TA	Total		
1	EOE-081- EOE-084	Open Elective-II	3-1-0	30	20	50	100	150
2	ECS-701	Distributed Systems	3-1-0	30	20	50	100	150
3		IT-Elective-IV	3-1-0	30	20	50	100	150
4		IT-Elective-V	3-1-0	30	20	50	100	150
<b>Practicals / Training /Projects</b>								
5	EIT-851	Distributed Systems Lab*	0-0-2	-	25	25	25	50
6	EIT-852	Project	0-0-12	-	100	100	200	300
7	GP-801	General Proficiency	-	-	-	-	-	50

**Note:**

1. Practical Training done after 6<sup>th</sup> Semester would be evaluated in 7<sup>th</sup> semester through Report and Viva-voce.
2. Project has to be initiated in 7<sup>th</sup> semester beginning and completed by the end of 8<sup>th</sup> semester with proper report and demonstration.

\* At least 10 problems are to be considered based on corresponding theory course.

## List of Electives for B.Tech ( Information Technology)

### IT-Elective-I

EIT-061	Software Quality Engineering
EIT-062	Software Testing
EIT-063	Software Reliability

### IT-Elective-II

ECS-071	Computational Geometry
ECS-072	Computational Complexity
ECS-073	Parallel Algorithms
ECS-074	Pattern Recognition
EIT-071	Discrete Structures
EIT-072	Theory of Automata and Formal Languages

### IT-Elective-III

ECS-075	Data Mining & Data Warehousing
ECS-076	Distributed Database
EIT-073	Bioinformatics
ECS-077	Data Compression
EIT -074	IT in Forensic Science

### IT-Elective-IV

ECS-081	Real Time System
ECS-083	Embedded Systems
EIT-081	Digital Image Processing
EIT-082	Multimedia Systems

### IT-Elective-V

ECS-085	Neural Networks
ECS-086	Natural Language Processing
ECS-087	Mobile Computing
*ECS-088	Soft Computing

*\*Note: ECS- 088 may be opted by only those students who didn't opt EOE-041 as an open elective*

**UTTAR PRADESH TECHNICAL UNIVERSITY  
LUCKNOW**



**Syllabus**

**for**

**B. Tech. Electrical Engineering**

**B.Tech. Electrical & Electronics Engg.**

**of**

**Second Year**

**(Effective from the Session: 2014-15)**

*P. Prakash*

**Director**  
**IMS Engineering College**  
**Ghaziabad**

STUDY AND EVALUATION SCHEME											
B-Tech. Electrical Engg./Electrical & Electronics Engineering											
										YEAR: 2 <sup>nd</sup> SEMESTER-III	
Sl. No.	COURSE NO	SUBJECT	PERIOD			EVALUATION SCHEME				SUBJECT TOTAL	CREDIT
						SESSIONAL EVALUATION			EXAM ESE		
			L	T	P	CT	TA	TOTAL			
<b>THEORY SUBJECTS</b>											
1	NAS-301/- NOE 031-039	Mathematics III/Science Based Open Elective	3	1	0	30	20	50	100	150	4
2	NME-309	Thermal & Hydraulic Machines	3	1	0	30	20	50	100	150	4
3	NEE-301	Electro-Mechanical Energy Conversion-I	3	1	0	30	20	50	100	150	4
4	NEE-302	Electrical Measurement & Measuring Instruments	3	1	0	30	20	50	100	150	4
5	NEE-303	Basic System Analysis	2	1	0	15	10	25	50	75	3
6	NHU301/ NHU302	Industrial Psychology/ Industrial Sociology	2	0	0	15	10	25	50	75	2
7	AUC-001/ AUC-002	Human Values & Professional Ethics/ Cyber Security	2	0	0	15	10	25	50	75*	
<b>PRACTICAL / DESIGN / DRAWING</b>											
8	NME-359	Thermal & Hydraulic Machines Lab	0	0	3	10	10	20	30	50	1
9	NEE-351	Electromechanical Energy Conversion- I Lab	0	0	3	10	10	20	30	50	1
10	NEE-352	Electrical Measurement Lab	0	0	2	10	10	20	30	50	1
11	NEE-353	Numerical Technique Lab	0	0	2	10	10	20	30	50	1
12	NGP-301	General Proficiency Lab	-	-	-	-	-	50	-	50	
		<b>Total</b>	<b>17</b>	<b>5</b>	<b>7</b>					<b>1000</b>	<b>25</b>

The details of Science Based Electives are to be provided by The Boards of Studies of Science Subjects; these are common to all branches.

\*Human values & Professional Ethics /Cyber Security will be offered as a compulsory audit course for which passing marks are 30% in End Semester Examination and 40% in aggregate.

**Note:** Numbers of departmental subjects/labs in any semester may vary as per requirement keeping subject total and credit total unchanged.

  
 Director  
 IMS Engineering College  
 Ghaziabad

STUDY AND EVALUATION SCHEME												
B-Tech. Electrical Engg./Electrical & Electronics Engineering												
										YEAR: 2 <sup>nd</sup> SEMESTER-IV		
Sl. No.	COURSE NO	SUBJECT	PERIOD			EVALUATION SCHEME				SUBJECT TOTAL	CREDIT	
						SESSIONAL EVALUATION			EXAM ESE			
			L	T	P	CT	TA	TOTAL				
<b>THEORY SUBJECTS</b>												
1	NOE 041-049/ NAS-401	Science Based Open Elective/ Mathematics III	3	1	0	30	20	50	100	150	4	
2	NEC-409	Analog & Digital Electronics	3	1	0	30	20	50	100	150	4	
3	NEE-401	Electro-Mechanical Energy Conversion-II	3	1	0	30	20	50	100	150	4	
4	NEE-402	Network Analysis and Synthesis	3	1	0	30	20	50	100	150	4	
5	NEE-403	Instrumentation & Process Control	2	1	0	15	10	25	50	75	3	
6	NHU401/ NHU402	Industrial Psychology /Industrial Sociology	2	0	0	15	10	25	50	75	2	
7	AUC-002/ AUC-001	<i>Cyber Security/ Human Values &amp; Professional Ethics</i>	2	0	0	15	10	25	50	75*	-	
<b>PRACTICAL / DESIGN / DRAWING</b>												
8	NEC-459	Electronics Lab	0	0	3	10	10	20	30	50	1	
9	NEE-451	Electro-Mechanical Energy Conversion - II Laboratory	0	0	3	10	10	20	30	50	1	
10	NEE-452	Network Lab	0	0	2	10	10	20	30	50	1	
11	NEE-453	Electrical Instrumentation Lab	0	0	2	10	10	20	30	50	1	
12	NGP-401	General Proficiency	-	-	-			50	-	50		
		<b>Total</b>	<b>16</b>	<b>5</b>	<b>10</b>					<b>1000</b>	<b>25</b>	

The details of Science Based Electives are to be provided by The Boards of Studies of Science Subjects; these are common to all branches.

\*Human values & Professional Ethics /Cyber Security will be offered as a compulsory audit course for which passing marks are 30% in End Semester Examination and 40% in aggregate.

  
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 Ghaziabad

# UTTAR PRADESH TECHNICAL UNIVERSITY LUCKNOW



## SYLLABUS

### Bachelor of Electrical and Electronics Engineering

3<sup>rd</sup> Year (V & VI Semester)

(Effective from Session 2015-2016)

*P. Prasad*  
Director  
IMS Engineering College  
Ghaziabad



**STUDY AND EVALUATION SCHEME OF ELECTRICAL & ELECTRONICS ENGINEERING**

**Third Year**

**Semester-V**

S. No	Subject Code	Name of the Subject	Periods			Evaluation Scheme				Subject Total	Credit
			L	T	P	Sessional Assessment			ESE		
						C	T	Tot			
THEORY SUBJECT											
1	NEE-501	Elements Of Power System	3	1	0	30	20	50	100	150	4
2	NEE 502	Power Electronics	3	1	0	30	20	50	100	150	4
3	NEE-503	Control System	3	1	0	30	20	50	100	150	4
4	NEE-504	Microprocessor & Its Applications	3	1	0	30	20	50	100	150	4
5	NEC-508	Fundamentals of E.M. Theory	2	1	0	15	10	25	50	75	3
6	NHU-501	Engineering Economics	2	0	0	15	10	25	50	75	2
PRACTICAL/DESIGN/DRAWING											
7	NEE-551	Power Electronics Lab	0	0	3	10	10	20	30	50	1
8	NEE 552	Control System Lab	0	0	3	10	10	20	30	50	1
9	NEE-553	Microprocessor Lab	0	0	2	10	10	20	30	50	1
10	NEE 554	Simulation Based Minor Project	0	0	2	10	10	20	30	50	1
11	NGP 501	GP						50		50	1
		TOTAL	16	5	10					1000	26

  
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 IMS Engineering College  
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**STUDY AND EVALUATION SCHEME OF ELECTRICAL & ELECTRONICS ENGINEERING**

**Third Year**

**Semester-VI**

S. No	Subject Code	Name of the Subject	Periods			Evaluation Scheme				Subject Total	Credit
			L	T	P	Sessional Assessment			ESE		
						C T	T A	Tot al			
<b>THEORY SUBJECT</b>											
1	NEE-601	Power System Analysis	3	1	0	30	20	50	100	150	4
2	NEE 602	Switchgear & Protection	3	1	0	30	20	50	100	150	4
3	NEN-603/ NEC 501	Integrated Circuits	3	1	0	30	20	50	100	150	4
4	NEN-011-NEN-014	Departmental Elective-I	3	1	0	30	20	50	100	150	4
5	NEN-021-NEN-024	Departmental Elective-II	2	1	0	15	10	25	50	75	3
6	NHU-601	Industrial Management	2	0	0	15	10	25	50	75	2
<b>PRACTICAL/DESIGN/DRAWING</b>											
7	NEC-651	IC Lab	0	0	2	10	10	20	30	50	1
8	NEN-652	Electrical & Electronics CAD Lab	0	0	3	10	10	20	30	50	1
9	NEN-653	Minor Project	0	0	2	10	10	20	30	50	1
10	NEN- 654	Seminar	0	0	3		50	50		50	1
11	NGP-601	GP						50		50	1
		<b>TOTAL</b>	<b>16</b>	<b>5</b>	<b>10</b>					<b>1000</b>	<b>26</b>

  
 Director  
 IMS Engineering College  
 Ghaziabad

**U.P. TECHNICAL UNIVERSITY, LUCKNOW**  
**STUDY AND EVALUATION SCHEME**  
**B-Tech. Electrical & Electronics Engineering**

(EFFECTIVE FROM SESSION : 2011-12)

YEAR: 4<sup>th</sup>, SEMESTER-VII

Sl. No.	COURSE NO	SUBJECT	PERIOD			EVALUATION SCHEME				SUBJECT TOTAL	CREDIT
						SESSIONAL EVALUATION			EXAM ESE		
			L	T	P	CT	TA	TOTAL			
<b>THEORY SUBJECTS</b>											
1	EOE-071 EOE-074	Open Elective-I	3	1	0	30	20	50	100	150	4
2	EEE-031 EEE-034	Departmental Elective-III	3	1	0	30	20	50	100	150	4
3		Departmental Elective-IV	3	1	0	30	20	50	100	150	4
4	EEE-701	Switch Gear & Protection	3	1	0	30	20	50	100	150	4
5	EEN-701/ EEE-504	Electrical Instrumentation & Process Control	3	1	0	30	20	50	100	150	4
6	EHU-111	*Human Values & Professional Ethics	2	2	0	15	10	25	50	75	-
<b>PRACTICAL / DESIGN / DRAWING</b>											
7	EEE-751	Power System Lab	0	0	3	10	10	20	30	50	1
8	EEN-751/ EEE-553	Electrical Instrumentation Lab	0	0	2	10	10	20	30	50	1
9	EEN-753	Project	0	0	3	-	50	50	-	50	2
10	EEN-754	Industrial Training	0	0	2	-	-	50	-	50	1
11	GP-701	General Proficiency	-	-	-	-	-	50	-	50	1
		<b>Total</b>	<b>15</b>	<b>7</b>	<b>10</b>	<b>170</b>	<b>170</b>	<b>440</b>	<b>560</b>	<b>1000</b>	<b>26</b>

[6]

*P. Prasad*  
 Director  
 IMS Engineering College  
 Ghaziabad

**U.P. TECHNICAL UNIVERSITY, LUCKNOW**  
**STUDY AND EVALUATION SCHEME**  
**B-Tech. Electrical & Electronics Engineering**

(EFFECTIVE FROM SESSION : 2011-12)

YEAR: 4<sup>th</sup> SEMESTER-VIII

Sl.No.	COURSE NO	SUBJECT	PERIOD			EVALUATION SCHEME				SUBJECT TOTAL	CREDIT
			L	T	P	SESSIONAL EVALUATION			EXAM ESE		
						CT	TA	TOTAL			
<b>THEORY SUBJECTS</b>											
1	EOE-081 EOE-084	Open Elective-II	3	1	0	30	20	50	100	150	4
2	EEE-051 EEE-054	Departmental Elective-V	3	1	0	30	20	50	100	150	4
3		Departmental Elective-VI	3	1	0	30	20	50	100	150	4
4	EEC-809	Data Communication Networks	3	0	0	30	20	50	100	150	3
5	EHU-111	*Human Values & Professional Ethics	2	2	0	15	10	25	50	75	-
<b>PRACTICAL / DESIGN / DRAWING</b>											
6	EEN-801	Project	0	0	12	-	100	100	250	350	8
7	GP-801	General Proficiency	-	-	-	-	-	50	-	50	1
		<b>Total</b>	<b>12</b>	<b>5</b>	<b>12</b>	<b>120</b>	<b>180</b>	<b>350</b>	<b>650</b>	<b>1000</b>	<b>24</b>

[7]

*P. S. Singh*  
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## DEPARTMENTAL ELECTIVES

### ELECTIVE – I

Course No.	Sl. No	Subject
ECS-019	1	Database Management System, Data Mining And Warehousing
EEE-011	2	Digital Control System
EEN-011	3	Fundamentals of Digital Signal Processing
EEE-012	4	Special Electrical Machines

### ELECTIVE – II

Course No.	Sl. No	Subject
EEE-021	1	High Voltage Engineering
EEE-022	2	Intelligent Instrumentation
EEE-023	3	Conventional And CAD of Electrical Machines
ECS-029	4	Cryptography & Network Security

### ELECTIVE – III

Course No.	Sl. No	Subject
ECS-039	1	Object Oriented Systems and C++
EEE-031	2	Power System Operation and Control
EEE-032	3	Advanced microprocessors and micro controllers
EEE-033	4	Neural Networks and fuzzy System

### ELECTIVE – IV

Course No.	Sl. No	Subject
ECS-049	1	Computer Networks
EEE-041	2	EHV AC & DC Transmission
EEC-049	3	Digital Communication
EOE-042	4	Power Station Practice

### ELECTIVE – V

Course No.	Sl. No	Subject
EEE-051	1	Bio Instrumentation
EEE-052	2	Advanced Control System
EEE-053	3	Reliability Engineering
EEE-054	4	Energy Efficiency & Conservation

### ELECTIVE – VI

Course No.	Sl. No	Subject
EEE-061	1	Power Quality
EEE-062	2	SCADA & Energy Management System
EEC-069	3	Multimedia System
EEE-063	4	Power Converters Applications

  
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## SCIENCE BASED OPEN ELECTIVE

EOE-031 / EOE-041

Introduction to Soft Computing (Neural Networks, Fuzzy Logic and Genetic Algorithm)

EOE-032 / EOE-042

Nano Sciences

EOE-033 / EOE-043

Laser Systems and Applications

EOE-034 / EOE-044

Space Sciences

EOE-035 / EOE-045

Polymer Science & Technology

EOE-036 / EOE-046

Nuclear Science

EOE-037 / EOE-047

Material Science

EOE-038 / EOE-048

Discrete Mathematics

### OPEN ELECTIVE-I

EOE -071

Entrepreneurship Development

EOE-072

Quality Management

EOE-073

Operations Research

EOE-074

Introduction to Biotechnology

### OPEN ELECTIVE-II

EOE-081

Non Conventional Energy Resources

EOE-082

Nonlinear Dynamic Systems

EOE-083

Product Development

EOE-084

Automation & Robotics

  
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# UTTAR PRADESH TECHNICAL UNIVERSITY LUCKNOW



## SYLLABUS 2<sup>nd</sup> Year

**[Effective from Session 2014-15]**

1. B.Tech. Electronics Engineering
2. B.Tech. Electronics & Communication Engineering
3. B.Tech. Electronics & Telecommunication Engineering
4. B.Tech. Electronics & Instrumentation Engineering
5. B.Tech. Instrumentation & Control Engineering
6. B. Tech. Applied Electronics and Control Engineering
7. B. Tech. Biomedical Engineering

  
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## STUDY AND EVALUATION SCHEME

B.Tech. Electronics Engineering, B.Tech. Electronics & Communication Engineering, B.Tech. Electronics & Telecommunication Engineering, B.Tech. Electronics & Instrumentation Engineering, B.Tech. Instrumentation & Control Engineering, B. Tech. Applied Electronics and Control Engineering, B. Tech. Biomedical Engineering  
[Effective from Session 2014-15]

YEAR 2 <sup>ND</sup>		SEMESTER-III									
S.No.	Subject Code	Name of Subject	Periods			Evaluation Scheme				Subject Total	Credit
			L	T	P	CT	TA	Total	ESC		
1.	NAS-301/ NOE-031- NOE-039	Engg. Mathematics- III/Science based Electives*	3	1	0	30	20	50	100	150	4
2.	NEC-301	Network Analysis & Synthesis	3	1	0	30	20	50	100	150	4
3.	NEC-302	Fundamental of Electronic Devices	3	1	0	30	20	50	100	150	4
4.	NEC-303	Signals and Systems	3	1	0	30	20	50	100	150	4
5.	NHU-301/ NHU-302	Industrial Psychology/Industrial Sociology	2	0	0	15	10	25	50	75	2
6.	NEC-304	Switching Theory & Logic Design	2	1	0	15	10	25	50	75	3
	AUC-001/ AUC-002	Human Values & Professional Ethics/Cyber Security	2	0	0	15	10	25	50	75**	--
<b>PRACTICAL/DESIGN/DRAWING</b>											
7.	NEC-351	Network Analysis & Synthesis Lab.	0	0	3	10	10	20	30	50	1
8.	NEC-352	Electronics Workshop & PCB Design	0	0	3	10	10	20	30	50	1
9.	NEC-353	Logic Design Lab.	0	0	2	10	10	20	30	50	1
10.	NEC-354	Electronic Device Lab.	0	0	2	10	10	20	30	50	1
11.	NGP-301	NGP						50		50	--
		<b>Total</b>	<b>18</b>	<b>5</b>	<b>10</b>					<b>1000</b>	<b>25</b>

### Science Based Open Elective:

- NOE031 Introduction to Soft Computing (Neural Network, Fuzzy Logic and Genetic Algorithm)
- NOE032 Nano Sciences
- NOE033 Laser Systems and Applications
- NOE034 Space Sciences
- NOE035 Polymer Science & Technology
- NOE036 Nuclear Science
- NOE037 Material Science
- NOE038 Discrete Mathematics
- NOE039 Applied Linear Algebra

\*Human values & Professional Ethics /Cyber Security will be offered as a compulsory audit course for which passing marks are 30% in End Semester Examination and 40% in aggregate.

  
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## STUDY AND EVALUATION SCHEME

B.Tech. Electronics Engineering, B.Tech. Electronics & Communication Engineering, B.Tech. Electronics & Telecommunication Engineering, B.Tech. Electronics & Instrumentation Engineering, B.Tech. Instrumentation & Control Engineering, B. Tech. Applied Electronics and Control Engineering, B. Tech. Biomedical Engineering  
[Effective from Session 2014-15]

YEAR 2<sup>ND</sup>

SEMESTER-IV

S.No.	Subject Code	Name of Subject	Periods			Evaluation Scheme				Subject Total	Credit
			L	T	P	CT	TA	Total	ESC		
1.	NOE-041- NOE-049/ NAS-401	Science based Elective/Engg. Mathematics-III	3	1	0	30	20	50	100	150	4
2.	NEC-401	Data Structure	3	1	0	30	20	50	100	150	4
3.	NEC-402	Electronic Circuits	3	1	0	30	20	50	100	150	4
4.	NEC-408	Electronic Measurements & Instrumentation	3	1	0	30	20	50	100	150	4
5.	NHU-401/ NHU-402	Industrial Sociology/ Industrial Psychology	2	0	0	15	10	25	50	75	2
6.	NEC-404	Electromagnetic Field Theory (EMFT)	2	1	0	15	10	25	50	75	3
7.	AUC-002/ AUC-001	Cyber Security/ Human Values & Professional Ethics	2	0	0	15	10	25	50	75**	--
<b>PRACTICAL/DESIGN/DRAWING</b>											
8.	NEC-451	Data Structure Lab.	0	0	3	10	10	20	30	50	1
9.	NEC-452	Electronic Circuits Lab.	0	0	3	10	10	20	30	50	1
10.	NEC-453	Digital Electronics Lab.	0	0	2	10	10	20	30	50	1
11.	NEC-454	Electronics Measurement Lab.	0	0	2	10	10	20	30	50	1
12.	NGP-401	NGP						50		50	--
		<b>Total</b>				40				1000	25

### Science Based Open Elective:

- NOE-041 Introduction to Soft Computing (Neural Network, Fuzzy Logic and Genetic Algorithm)
- NOE-042 Nano Sciences
- NOE-043 Laser Systems and Applications
- NOE-044 Space Sciences
- NOE-045 Polymer Science & Technology
- NOE-046 Nuclear Science
- NOE-047 Material Science
- NOE-048 Discrete Mathematics
- NOE-049 Applied Linear Algebra

\*Human values & Professional Ethics /Cyber Security will be offered as a compulsory audit course for which passing marks are 30% in End Semester Examination and 40% in aggregate.

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




## **Syllabus**

**3<sup>rd</sup> Year**

**[Effective from Session 2016-17]**

- 1. B.Tech. Electronics Engineering**
- 2. B.Tech. Electronics & Communication Engineering**
- 3. B.Tech. Electronics & Telecommunication Engineering**

  
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## SEMESTER-V

No.	Subject Code	Name of the Subject	Periods			Evaluation Scheme				Subject Total	Credit
			L	T	P	Sessional Assessment			ESE		
						CT	TA	Total			
<b>THEORY SUBJECTS</b>											
1	NEC 501R	Integrated Circuits	3	1	0	30	20	50	100	150	4
2	NEC 502	Principles of Communication	3	1	0	30	20	50	100	150	4
3	NEC 503	Microprocessors	3	1	0	30	20	50	100	150	4
4	NIC 501	Control System -1	3	1	0	30	20	50	100	150	4
5	NEC 504	Antenna and Wave Propagation	2	1	0	15	10	25	50	75	3
6	NHU501	Engineering Economics	2	0	0	15	10	25	50	75	2
<b>PRACTICAL/ DESIGN/ DRAWING</b>											
7	NEC 551R	Integrated Circuits Lab	0	0	2	10	10	20	30	50	1
8	NIC 551	Control System Lab	0	0	2	10	10	20	30	50	1
9	NEC 552	Communication Lab - 1	0	0	2	10	10	20	30	50	1
10	NEC 553	Microprocessors Lab	0	0	2	10	10	20	30	50	1
11	NGP 501	GP						50		50	
<b>TOTAL</b>			16	5	8					1000	25

CT Class Test  
 ESE End Semester Examination  
 L/T/P Lecture/ Tutorial/ Practical

AT Attendance

TA Tutorial Assignment

  
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## SEMESTER-VI

No.	Subject Code	Name of the Subject	Periods			Evaluation Scheme			Subject Total	Credit	
			L	T	P	Sessional Assessment		ESE			
						CT	TA				Total
<b>THEORY SUBJECTS</b>											
1	NEC 601	Microwave Engineering	3	1	0	30	20	50	100	150	4
2	NEC 602	Digital Communication	3	1	0	30	20	50	100	150	4
3	NEC 603	Integrated Circuit Technology	3	1	0	30	20	50	100	150	4
4	NEC0_	Departmental Elective -I	3	1	0	30	20	50	100	150	4
5	NEC0_	Departmental Elective - II	2	1	0	15	10	25	50	75	3
6	NHU601	Industrial Management	2	0	0	15	10	25	50	75	2
<b>PRACTICAL/ DESIGN/ DRAWING</b>											
7	NEC 651	Antenna and Microwave Lab	0	0	2	10	10	20	30	50	1
8	NEC 652	Communication Lab - II	0	0	2	10	10	20	30	50	1
9	NEC 653	CAD of Electronics Lab	0	0	2	10	10	20	30	50	1
10	NEC 654R	Seminar	0	0	1	10	10	20	-	20	1
11	NEC 655	Microcontrollers for Embedded Systems Lab	0	0	1	6	6	12	18	30	1
12	NGP 601	GP						50		50	
		<b>TOTAL</b>	16	5	8					1000	26

### Departmental Elective –I

1. NEC011                      Digital Signal Processing
2. NEC 012                    Computer Architecture and Organization
3. NEC 013                    Artificial Neural Network
4. NEC 014                    Advance Semiconductor Devices
5. NEC013R                    Real Time Systems

### Departmental Elective - II

1. NEC 021                    Industrial Electronics
2. NEC 022R                 Microcontroller for Embedded Systems
3. NEC 023                    Analog Signal Processing
4. NEC 024R                 Advance Digital Design using Verilog

  
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**G.B. TECHNICAL UNIVERSITY, LUCKNOW**  
**Study and Evaluation Scheme B. Tech. in Electronics Engg/ Electronics &**  
**Communication Engg/ Electronics & Telecomm Engg**  
 [Effective from the session 2011-12]

YEAR 4<sup>th</sup>, SEMESTER-VII

S. No.	Course Code	SUBJECT	PERIODS			Evaluation Scheme				Subject Total	Credit
						SESSIONAL EXAM.			ES E		
			L	T	P	CT	TA	Total			
<b>THEORY SUBJECTS</b>											
1.	EOE 07*	Open Elective-I**	3	1	0	30	20	50	100	150	4
2.	EOE 02*	Departmental Elective-II	3	1	0	30	20	50	100	150	4
3.	EEC 701	Optical Communication	3	1	0	30	20	50	100	150	4
4.	EEC 702	Data Communication Networks	3	1	0	30	20	50	100	150	4
5.	EEC 703	VLSI Design	3	1	0	30	20	50	100	150	4
6.	AUC 001	*Human Values & Professional Ethics	2	0	0	15	10	25	50	75	-
<b>PRACTICAL/DESIGN/DRAWING</b>											
7.	EEC 751	Microwave & Fiber Optic Lab	0	0	2	-	20	20	30	50	1
8.	EEC 752	Electronics Circuit Design Lab	0	0	3	-	20	20	30	50	2
9.	EEC 753	Industrial Training Viva-Voce	0	0	2	-	50	50	0	50	1
10.	EEC 754	Project	0	0	2	-	50	50	-	50	1
11.	GP 701	General Proficiency	-	-	-	-	-	50	-	50	1
		<b>Total</b>	<b>15</b>	<b>5</b>	<b>9</b>	<b>150</b>	<b>210</b>	<b>410</b>	<b>590</b>	<b>1000</b>	<b>26</b>

**\*\* Open Electives-I**

EOE-071	Entrepreneurship Development
EOE-072	Quality Management
EOE-073	Operation Research
EOE-074	Introduction to Biotechnology
EOE-075/EIC-034	Micro and smart systems

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**Communication Engg/ Electronics & Telecomm Engg**  
 [Effective from the session 2011-12]

YEAR 4<sup>th</sup>, SEMESTER-VIII

S. No.	Course Code	SUBJECT	PERIODS			Evaluation Scheme				Subject Total	Credit
						SESSIONAL EXAM.			ESE		
			L	T	P	CT	TA	Total			
<b>THEORY SUBJECTS</b>											
1.	EOE 08*	Open Elective-II**	3	1	0	30	20	50	100	150	4
2.	EEC 03*	Departmental Elective-III	3	1	0	30	20	50	100	150	4
3.	EEC 801	Wireless & Mobile Communication	3	1	0	30	20	50	100	150	4
4.	EEC 802	Electronics Switching	3	1	0	30	20	50	100	150	3
5.	AUC 001	*Human Values & Professional Ethics	2	0	0	15	10	25	50	75	-
<b>PRACTICAL/DESIGN/DRAWING</b>											
6.	EEC 851	Project	0	0	12	-	100	100	250	350	8
7.	GP 801	General Proficiency	-	-	-	-	-	50	-	50	1
		<b>Total</b>	<b>12</b>	<b>4</b>	<b>12</b>	<b>120</b>	<b>180</b>	<b>350</b>	<b>650</b>	<b>1000</b>	<b>24</b>

\*\* Open Electives-II

EOE-081 Non Conventional Energy Resources  
 EOE-082 Nonlinear Dynamic system  
 EOE-083 Product Development  
 EOE-084 Automation and Robotics

  
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**LIST OF ELECTIVES:**

**Elective – I**

1. EEC 011 Analog Signal Processing
2. EEC 012 Data Structure
3. EEC 013 Advance Semiconductor Devices
4. EEC 014 Microcontrollers

**Elective – II**

1. EEC 021 Satellite Communication
2. EEC 022 Digital Image Processing
3. EEC 023 ANN
4. EEC 024 Filter Design

**Elective – III**

1. EEC 031 Optical Networks
2. EEC 032 Digital System Design using VHDL
3. EEC 033 Speech Processing
4. EEC 034 Integrated Circuit Technology
5. EEC 035 Introduction to RADAR systems

  
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## LIST OF ELECTIVES:

### Elective – I

1. EEC 011 Analog Signal Processing
2. EEC 012 Data Structure
3. EEC 013 Advance Semiconductor Devices
4. EEC 014 Microcontrollers

### Elective – II

1. EEC 021 Satellite Communication
2. EEC 022 Digital Image Processing
3. EEC 023 ANN
4. EEC 024 Filter Design

### Elective – III

1. EEC 031 Optical Networks
2. EEC 032 Digital System Design using VHDL
3. EEC 033 Speech Processing
4. EEC 034 Integrated Circuit Technology
5. EEC 035 Introduction to RADAR systems

  
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# UTTAR PRADESH TECHNICAL UNIVERSITY LUCKNOW



## SYLLABUS

### B. Tech. (2<sup>nd</sup> Year)

1. Mechanical Engineering
2. Production Engineering
3. Industrial & Production Engineering
4. Mechanical & Industrial Engineering
5. Manufacturing Technology
6. Automobile Engineering
7. Aeronautical Engineering

[Effective Form session 2014-15]

*P. Prasad*  
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**STUDY & EVALUATION SCHEME**  
**B. Tech. Mechanical Engineering / Production Engineering / Industrial & Production Engineering / Mechanical**  
**& Industrial Engineering / Manufacturing Technology / Automobile Engineering / Aeronautical Engineering**  
 (Effective Form session 2014-15)

**YEAR II, SEMESTER-III**

S. No.	Subject Code	Name of the Subject	Periods			Evaluation Scheme				Subject Total	Credits
			L	T	P	Sessional Assessment			ESE		
						CT	TA	Total			
<b>THEORY SUBJECT</b>											
1	NAS-301/ NOE-031 to NOE-039	Engg Mathematics-III/ Science Based Elective	3	1	0	30	20	50	100	150	4
2	NCE-301	Fluid Mechanics	3	1	0	30	20	50	100	150	4
3	NME-301	Material Science	3	1	0	30	20	50	100	150	4
4	NME-302	Mechanics of Solids	3	1	0	30	20	50	100	150	4
5	NHU-301/ NHU-302	Industrial Psychology/ Industrial Sociology	2	0	0	15	10	25	50	75	2
6	NME-303	Thermodynamics	2	1	0	15	10	25	50	75	3
7	AUC-001/ AUC-002	Human Value & Professional Ethics/Cyber Security	2	0	0	15	10	25	50	75*	
<b>PRACTICAL/DESIGN/DRAWING SUBJECTS</b>											
8	NCE-351	Fluid Mechanics Lab.	0	0	3	10	10	20	30	50	1
9	NME-351	Material Science & Testing Lab.	0	0	2	10	10	20	30	50	1
10	NME-352	Machine Drawing I	0	0	3	10	10	20	30	50	1
11	NME-353	Thermodynamics Lab.	0	0	2	10	10	20	30	50	1
12	NGP-301	GP						50		50	
		<b>TOTAL</b>	<b>18</b>	<b>5</b>	<b>10</b>					<b>1000</b>	<b>25</b>

*NOTE: Up to IV semesters – common to Mechanical and related branches (such as Production, Industrial, Manufacturing, Automobile, Aeronautical etc.).*

The details of Science Based Electives are to be provided by The Boards of Studies of Science Subjects; these are common to all branches.

\*Human values & Professional Ethics /Cyber Security will be offered as a compulsory audit course for which passing marks are 30% in End Semester Examination and 40% in aggregate.

*Prabhu*  
 Director  
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 Ghaziabad

**STUDY & EVALUATION SCHEME**

**B. Tech. Mechanical Engineering / Production Engineering / Industrial & Production Engineering / Mechanical & Industrial Engineering / Manufacturing Technology / Automobile Engineering / Aeronautical Engineering**  
[Effective Form session 2014-15]

**YEAR II, SEMESTER-IV**

S. No.	Subject Code	Name of the Subject	Periods			Evaluation Scheme			Subject Total	Credits	
			L	T	P	Sessional Assessment					ESE
						CT	TA	Total			
<b>THEORY SUBJECT</b>											
1	NOE-041 to NOE-049/ NAS-401	Science Based Elective/ Engg Mathematics-III	3	1	0	30	20	50	100	150	4
2	NEE-409	Electrical Machines & Controls	3	1	0	30	20	50	100	150	4
3	NME-401	Applied Thermodynamics	3	1	0	30	20	50	100	150	4
4	NME-402	Manufacturing Science & Technology I	3	1	0	30	20	50	100	150	4
5	NHU-402/ NHU-401	Industrial Sociology/Industrial Psychology	2	0	0	15	10	25	50	75	2
6	NME-403	Measurement and Metrology	2	1	0	15	10	25	50	75	3
7	AUC-002/ AUC-001	Cyber Security/Human Value & Professional Ethics	2	0	0	15	10	25	50	75*	
<b>PRACTICAL/DESIGN/DRAWING SUBJECT</b>											
8	NEE-459	Electrical Machines & Controls Lab.	0	0	3	10	10	20	30	50	1
9	NME-451	Machine Drawing II	0	0	3	10	10	20	30	50	1
10	NME-452	Manufacturing Technology I Lab.	0	0	2	10	10	20	30	50	1
11	NME-453	Measurement and Metrology Lab.	0	0	2	10	10	20	30	50	1
12	NGP-401	GP						50		50	
		<b>TOTAL</b>	<b>18</b>	<b>5</b>	<b>10</b>					<b>1000</b>	<b>25</b>
<b>Industrial Training-I of 4 weeks after IV semester or Minor fabrication project involving work for nearly 4 weeks , which will be evaluated in VII semester</b>											

**NOTE:** Practical summer training-I of 4-weeks after IV –semester or Minor fabrication project will be evaluated in VII semester

The details of Science Based Electives are to be provided by The Boards of Studies of Science Subjects; these are common to all branches.

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# U.P. TECHNICAL UNIVERSITY, LUCKNOW

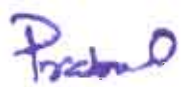


## Syllabus

3<sup>rd</sup> Year

[Effective from session 2015-16]

1. B. Tech. Mechanical Engineering
2. B. Tech. Production Engineering
3. B. Tech. Industrial & Production Engineering
4. B. Tech. Mechanical & Industrial Engineering

  
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**U.P. TECHNICAL UNIVERSITY, LUCKNOW**  
**STUDY & EVALUATION SCHEME**  
**B. Tech. Mechanical Engineering**  
**[Effective from Session 20015-16]**  
**YEAR III, SEMESTER-V**

S. No.	Subject Code	Name of the Subject	Periods			Evaluation Scheme				Subject Total	Credit
			L	T	P	Sessional Assessment			ESE		
						CT	TA	Total			
<b>THEORY SUBJECT</b>											
1	NME-501	Machine Design-I	2	1	0	15	10	25	50	75	3
2	NME-502	Kinematics of Machines	3	1	0	30	20	50	100	150	4
3	NME-503	Manufacturing Science & Technology-II	3	1	0	30	20	50	100	150	4
4	NME-504	Heat & Mass Transfer	3	1	0	30	20	50	100	150	4
5	NME-505	I.C. Engines & Compressors	3	1	0	30	20	50	100	150	4
6	NHU-501	Engineering Economics	2	0	0	15	10	25	50	75	2
<b>PRACTICAL/DESIGN/DRAWING</b>											
7	NME-551	Machine Design-I Lab	0	0	2	10	10	20	30	50	1
8	NME-552	Seminar	0	0	2	--	--	50	--	50	1
9	NME-553	Manufacturing Technology-II Lab	0	0	3	10	10	20	30	50	1
10	NME-554	Heat & Mass Transfer Lab	0	0	3	10	10	20	30	50	1
11	NGP-501	General Proficiency	--	--	--	--	--	50	--	50	
		<b>TOTAL</b>	16	5	10					1000	25

**U.P. TECHNICAL UNIVERSITY, LUCKNOW**  
**STUDY & EVALUATION SCHEME**  
**B. Tech. Mechanical Engineering**  
**[Effective from Session 20015-16]**  
**YEAR III, SEMESTER-VI**

S. No.	Subject Code	Name of the Subject	Periods			Evaluation Scheme			Subject Total	Credit	
			L	T	P	Sessional Assessment					ESE
						CT	TA	Total			
<b>THEORY SUBJECT</b>											
1	NME-602	Machine Design-II	3	1	0	30	20	50	100	150	4
2	NME-603	Dynamics of Machines	3	1	0	30	20	50	100	150	4
3	NME-604	Refrigeration & Air-conditioning	3	1	0	30	20	50	100	150	4
4	NME-011 to NME-014	Departmental Elective - I	3	1	0	30	20	50	100	150	4
5	NME-021 to NME-024	Departmental Elective - II	2	1	0	15	10	25	50	75	3
6	NHU-601	Industrial Management	2	0	0	15	10	25	50	75	2
<b>PRACTICAL/DESIGN/DRAWING</b>											
7	NME-651	Fluid Machinery Lab	0	0	3	10	10	20	30	50	1
8	NME-652	Machine Design-II Lab	0	0	2	10	10	20	30	50	1
9	NME-653	Theory of Machines Lab	0	0	2	10	10	20	30	50	1
10	NME-654	Refrigeration & Air Conditioning Lab	0	0	3	10	10	20	30	50	1
11	NGP-601	General Proficiency	--	--	--	--	--	50	--	50	
		<b>TOTAL</b>	<b>16</b>	<b>5</b>	<b>10</b>					<b>1000</b>	<b>25</b>

Note- 4 to 6 Weeks Industrial Training-II after VI semester also to be evaluated in VII semester

**Departmental Electives:**

**Department Elective - I**

1. NME-011 Engineering Optimization
2. NME-012 Finite Element Methods
3. NME-013 Mechanical Vibrations
4. NME-014 Mechatronics

**Department Elective - II**

1. NME-021 Fluid Machinery
2. NME-022 Product Design & Development
3. NME-023 Reliability Engineering
4. NME-024 Unconventional Manufacturing Processes

# U.P. TECHNICAL UNIVERSITY, LUCKNOW



**2<sup>nd</sup> , 3<sup>rd</sup> and 4<sup>th</sup> Year**

**[Effective from session 2009-10]**

- 1. B. Tech. Mechanical Engineering**
- 2. B. Tech. Production Engineering**
- 3. B. Tech. Industrial & Production Engineering**
- 4. B. Tech. Mechanical & Industrial Engineering**



**U.P. TECHNICAL UNIVERSITY, LUCKNOW**  
**STUDY & EVALUATION SCHEME**  
 B. Tech. Production Engineering / Industrial & Production Engineering / Mechanical & Industrial Engineering  
 [Effective from Session 20011-12]  
 YEAR IV, SEMESTER-VIII

S. No.	Course Code	SUBJECT	PERIODS			Evaluation Scheme				Subject Total	Credits
			L	T	P	SESSIONAL EXAM.			ESE		
						CT	TA	Total			
<b>THEORY</b>											
1.	EOE-081- EOE-084	Open Elective-II**	3	1	0	30	20	50	100	150	4
2.	EME-051- EME-056	Departmental Elective - V	3	1	0	30	20	50	100	150	4
3.	EME-061- EME-066	Departmental Elective - VI	3	1	0	30	20	50	100	150	4
4.	EPI-801	Quality Control	3	1	0	30	20	50	100	150	3
7.	EHU-111	*Human values & professional Ethics	2	0	0	15	10	25	50	75	-
<b>PRACTICAL/TRAINING/PROJECT</b>											
6.	EME-851	Project	0	0	12	-	100	100	250	350	8
10.	GP-601	General Proficiency	-	-	-	-	-	50	-	50	1
		<b>Total</b>	<b>12</b>	<b>3</b>	<b>12</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>1000</b>	

**Paper Code      Open Electives – II**

EOE-081	Non Conventional Energy Resources
EOE-082	Nonlinear Dynamic Systems
EOE-083	Product Development
EOE-084	Automation and Robotics

**DEPARTMENTAL ELECTIVES:**

**Department Elective-V**

- |    |         |                                      |
|----|---------|--------------------------------------|
| 1. | EME-051 | Operations Research                  |
| 2. | EME-052 | Maintenance Engineering & Management |
| 3. | EME-053 | Design of Thermal Systems            |
| 4. | EME-054 | Advanced Synthesis of Mechanisms     |
| 5. | EME-055 | Six Sigma Methods & Applications     |
| 6. | EME-056 | Concepts of Modern Physics           |

**Department Elective-VI**

- |    |         |   |
|----|---------|---|
| 1. | EME-061 | Finite Element Method                   |
| 2. | EME-062 | Non-Destructive Testing                 |
| 3. | EME-063 | Advanced Materials Technology           |
| 4. | EME-064 | Production & Operations Management      |
| 5. | EME-065 | Energy Management                       |
| 6. | EME-066 | Fundamentals of Bio Medical Engineering |

- Note: (1) The students who had taken Open elective EME-073 Operations Research in VII Sem. can not take the course EME-051 Operations Research as a Departmental Elective in VIII Sem.
- (2) The students who had taken departmental elective EME 021 Non Conventional Energy Resources & Utilization in VI Sem. can not take the open elective course EOE-081 Non Conventional Energy Resources in VIII Semester.

**U.P. TECHNICAL UNIVERSITY, LUCKNOW**

**STUDY & EVALUATION SCHEME**

B. Tech. Mechanical Engineering / Production Engineering / Industrial & Production Engineering / Mechanical & Industrial Engineering

[Effective from Session 20011-12]

**YEAR IV, SEMESTER-VII**

S. No.	Course Code	SUBJECT	PERIODS			Evaluation Scheme				Subject Total	Credits
						SESSIONAL EXAM.			ESE		
			L	T	P	CT	TA	Total			
<b>THEORY</b>											
1.	EOE-071- EOE-074	Open Elective-I**	3	1	0	30	20	50	100	150	4
2.	EME-031 to EME-036	Departmental Elective-II	3	1	0	30	20	50	100	150	4
3.	EME-041 to EME-046	Departmental Elective-IV	3	1	0	30	20	50	100	150	4
4.	EME-701	Computer Aided Design	3	1	0	30	20	50	100	150	4
5.	EME-702	Automobile Engineering	3	1	0	30	20	50	100	150	4
6.	EHU-111	*Human values & professional Ethics	2	0	0	15	10	25	50	75	
<b>PRACTICAL/TRAINING/PROJECT</b>											
7.	EME-751	CAD/CAM Lab	0	1	2	10	10	20	30	50	1
8.	EME-752	I C.Engine & Automobile Lab	0	0	2	10	10	20	30	50	1
9.	EME-753	Project	0	0	3	-	50	50	-	50	2
10.	EME-754	Industrial Training I & II Evaluation and viva-	0	0	2	-	50	50	-	50	1
11.	GP 701	General Proficiency	-	-	-	-	-	50	-	50	1
		<b>Total</b>	<b>15</b>	<b>6</b>	<b>9</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>1000</b>	<b>26</b>

Note-\*\*\*Practical Training-I & 2 (4-weeks each) done after 4<sup>th</sup> & 6<sup>th</sup> Semesters would be evaluated in 7<sup>th</sup> semester through Report and viva voce etc.

\* Project should be initiated in 7<sup>th</sup> semester beginning, and should be completed by the end of 8<sup>th</sup> semester with good Report and power-point Presentation etc.

**Paper Code    Open Electives - I**

EOE-071	Entrepreneurship Development
EOE-072	Quality Management
EOE-073	Operations Research
EOE-074	Introduction to Biotechnology

**DEPARTMENTAL ELECTIVES:**

**Department Elective - III**

1.	EME-031	Computer Aided Manufacturing
2.	EME-032	Project Management
3.	EME-033	Advanced Fluid Mechanics
4.	EME-034	Experimental Stress Analysis
5.	EME-035	Advanced Dynamics of Machines
6.	EME-036	Management Information System

**Department Elective - IV**

1.	EME-041	Total Quality Management
2.	EME-042	Thermal Turbo Machines
3.	EME-043	Mechanical System Design
4.	EME-044	Tnbology
5.	EME-045	Industrial Ergonomics
6.	EME-046	Concurrent Engineering



# UTTAR PRADESH TECHNICAL UNIVERSITY LUCKNOW



## SYLLABUS

of

**B. Tech. Civil Engineering  
(2<sup>nd</sup> Year)**

[Effective Form session 2014-15]

*Prabhu*  
Director  
IMS Engineering College  
Ghaziabad

**STUDY & EVALUATION SCHEME**  
**B. Tech. Civil Engineering**  
**[Effective Form session 2014-15]**

**YEAR II, SEMESTER-III**

S. No.	Subject Code	Name of the Subject	Periods			Evaluation Scheme			Subject Total	Credits	
			L	T	P	Sessional Assessment					ESE
						CT	TA	Total			
<b>THEORY SUBJECT</b>											
1	NAS-301/ NOE-031 to NOE-039	Engg Mathematics-III/ Science Based Elective	3	1	0	30	20	50	100	150	4
2	NCE-301	Fluid Mechanics	3	1	0	30	20	50	100	150	4
3	NCE-302	Building Materials & Construction	3	1	0	30	20	50	100	150	4
4	NME-302	Mechanics of Solids	3	1	0	30	20	50	100	150	4
5	NHU-301/ NHU-302	Industrial Psychology/ Industrial Sociology	2	0	0	15	10	25	50	75	2
6	NCE-303	Surveying-I	2	1	0	15	10	25	50	75	3
	AUC-001/ AUC-002	Human Value & Professional Ethics/Cyber Security	2	0	0	15	10	25	50	75*	
<b>PRACTICAL/DESIGN/DRAWING SUBJECTS</b>											
7	NCE-351	Fluid Mechanics Lab.	0	0	3	10	10	20	30	50	1
8	NCE-352	Building Materials Lab	0	0	2	10	10	20	30	50	1
9	NCE-353	Surveying Lab	0	0	3	10	10	20	30	50	1
10	NCE-354	Building Planning & Drawing	0	0	2	10	10	20	30	50	1
11	NGP-301	NGP						50		50	
		<b>TOTAL</b>	18	5	10					1000	25

*NOTE: Up to IV semesters – common to Mechanical and related branches (such as Production, Industrial, Manufacturing, Automobile, Aeronautical etc.).*

**Science Based Open Elective:**

- NOE031 Introduction to Soft Computing (Neural Network, Fuzzy Logic and Genetic Algorithm)
- NOE032 Nano Sciences
- NOE033 Laser Systems and Applications
- NOE034 Space Sciences
- NOE035 Polymer Science & Technology
- NOE036 Nuclear Science
- NOE037 Material Science
- NOE038 Discrete Mathematics
- NOE039 Applied Linear Algebra

\*Human values & Professional Ethics /Cyber Security will be offered as a compulsory audit course for which passing marks are 30% in End Semester Examination and 40% in aggregate.

*P. Prasad*  
 Director  
 IMS Engineering College  
 Ghaziabad

**STUDY & EVALUATION SCHEME**  
**B. Tech. Civil Engineering**  
**[Effective Form session 2014-15]**

**YEAR II, SEMESTER-IV**

S. No.	Subject Code	Name of the Subject	Periods			Evaluation Scheme				Subject Total	Credits
			L	T	P	Sessional Assessment			ESE		
						CT	TA	Total			
<b>THEORY SUBJECT</b>											
1	NOE-041 to NOE-049/ NAS-401	Science Based Elective/ Engg Mathematics-III	3	1	0	30	20	50	100	150	4
2	NCE-401	Structural Analysis-I	3	1	0	30	20	50	100	150	4
3	NCE-402	Geo-informatics	3	1	0	30	20	50	100	150	4
4	NCE-403	Hydraulics & Hydraulic Machines	3	1	0	30	20	50	100	150	4
5	NHU-402/ NHU-401	Industrial Sociology/Industrial Psychology	2	0	0	15	10	25	50	75	2
6	NCE-404	Engineering Geology	2	1	0	15	10	25	50	75	3
	AUC-002/ AUC-001	Cyber Security/Human Value & Professional Ethics	2	0	0	15	10	25	50	75*	
<b>PRACTICAL/DESIGN/DRAWING SUBJECT</b>											
7	NCE-451	Structural Analysis Lab	0	0	3	10	10	20	30	50	1
8	NCE-452	Geo-informatics Lab	0	0	3	10	10	20	30	50	1
9	NCE-453	Hydraulics & Machine Lab	0	0	2	10	10	20	30	50	1
10	NCE-455	CBSNT Lab	0	0	2	10	10	20	30	50	1
11	NGP-401	NGP						50		50	
		<b>TOTAL</b>	<b>18</b>	<b>5</b>	<b>10</b>					<b>1000</b>	<b>25</b>
<b>Industrial Training-I of 4 weeks after IV semester or Minor fabrication project involving work for nearly 4 weeks, which will be evaluated in VII semester</b>											

**NOTE:** Practical summer training-I of 4-weeks after IV --semester or Minor fabrication project will be evaluated in VII semester

**Science Based Open Elective:**

- NOE-041 Introduction to Soft Computing (Neural Network, Fuzzy Logic and Genetic Algorithm)
- NOE-042 Nano Sciences
- NOE-043 Laser Systems and Applications
- NOE-044 Space Sciences
- NOE-045 Polymer Science & Technology
- NOE-046 Nuclear Science
- NOE-047 Material Science
- NOE-048 Discrete Mathematics
- NOE-049 Applied Linear Algebra

\*Human values & Professional Ethics /Cyber Security will be offered as a compulsory audit course for which passing marks are 30% in End Semester Examination and 40% in aggregate.

  
**Director**  
**IMS Engineering College**  
**Ghaziabad**



U.P. TECHNICAL UNIVERSITY, LUCKNOW  
STUDY & EVALUATION SCHEME  
B. Tech. Civil Engineering  
(Effective from the session – 2015-16)

Third Year, 5th Semester

S.No	Course Code	Subject	Period			Evaluation Scheme				Subject Total	Credit
			L	T	P	Sessional Exam			ESE		
						CT	TA	Total			
<b>THEORY SUBJECTS</b>											
1	NHU 501	Engineering Economics	2	0	0	15	10	25	50	75	2
2	NCE 501	Geotechnical Engineering	3	1	0	30	20	50	100	150	4
3	NCE 502	Transportation Engineering-1	3	1	0	30	20	50	100	150	4
4	NCE 503	Environmental Engineering-1	2	1	0	15	10	25	50	75	3
5	NCE 504	Structural Analysis-2	3	1	0	30	20	50	100	150	4
6	NCE 505	Design of Concrete Structure-1	3	1	0	30	20	50	100	150	4
<b>PRACTICAL/DRAWING/DESIGN</b>											
7	NCE 551	Geotechnical Engineering Lab	-	-	3	10	10	20	30	50	1
8	NCE 552	Transportation Engineering Lab	-	-	3	10	10	20	30	50	1
9	NCE 553	CAD Lab-1	-	-	3	10	10	20	30	50	1
10	NCE 554	Estimation Costing & Valuation			3	10	10	20	30	50	1
11	NGP 501	General Proficiency	-	-	-	-	-	50	-	50	
		<b>TOTAL</b>	16	5	12					1000	25

U.P. TECHNICAL UNIVERSITY, LUCKNOW  
STUDY & EVALUATION SCHEME  
B. Tech. Civil Engineering  
(Effective from the session – 2015-16)

Third Year, 6th Semester

S. No	Course Code	Subject	Period			Evaluation Scheme				Subject Total	Credit
			L	T	P	Sessional Exam			ESE		
						CT	TA	Total			
<b>THEORY SUBJECTS</b>											
1	NHU 601	Industrial Management	2	0	0	15	10	25	50	75	2
2	NCE 601	Design of Concrete Structure-2	3	1	0	30	20	50	100	150	4
3	NCE 602	Environmental Engineering-2	3	1	0	30	20	50	100	150	4
4	NCE 603	Construction Technology & Management	3	1	0	30	20	50	100	150	4
5	NCE 011-014	Departmental Elective-1	3	1	0	30	20	50	100	150	4
6	NCE 021-024	Departmental Elective-2	2	1	0	15	10	25	50	75	3
<b>PRACTICAL/DRAWING/DESIGN</b>											
7	NCE 651	Structural Detailing Lab	0	0	3	10	10	20	30	50	1
8	NCE 652	Environmental Engineering Lab	0	0	3	10	10	20	30	50	1
9	NCE 653	CAD Lab-2	0	0	3	10	10	20	30	50	1
10	NCE 654	Survey Camp*	0	0	0	0	0	50		50	1
11	NGP 601	General Proficiency	0	0	0	0	0	50	-	50	
		<b>TOTAL</b>	<b>16</b>	<b>5</b>	<b>9</b>					<b>1000</b>	<b>25</b>

Note: \*The teaching load of survey camp will be counted as equivalent to 0-0-3.

Departmental Elective -1 (Full Unit Course with Credit: 4)

Sl.No.	Code and Course
5 (A)	NCE 011 – Advanced Foundation Design
5 (B)	NCE 012 – Matrix Analysis of Structures
5 (C)	NCE 013 – Environmental Management for Industries
5 (D)	NCE 014 – Principals of Town Planning and Architecture

Departmental Elective – 2 (Half Unit Course with Credit: 3)

Sl.No.	Code and Course
6 (A)	NCE 021 – Advanced Concrete Design
6 (B)	NCE 022 – Earth and Earth Retaining Structure
6 (C)	NCE 023 – Transportation System and Planning
6 (D)	NCE 024 – Rural Water supply and Sanitation

**G. B. TECHNICAL UNIVERSITY, LUCKNOW**

**Study & Evaluation Scheme**

B Tech Civil Engineering

Effective from session 2011-12

Final Year , VII Semester

S No	Course Code	SUBJECT	PERIODS			Evaluation Scheme			Subject Total	Credit	
			L	T	P	Sessional Exam		ESE			
						CT	TA				Total
<b>THEORY SUBJECT</b>											
1	EOE071- EOE074	Open Elective – I	3	1	0	30	20	50	100	150	4
2	ECE031- ECE034	Department Elective-III	3	1	0	30	20	50	100	150	4
3	ECE041- ECE044	Department Elective-IV	3	1	0	30	20	50	100	150	4
4	ECE701	Design of Steel Structures	3	1	0	30	20	50	100	150	4
5	ECE702	Water Resources Engg	3	1	0	30	20	50	100	150	4
<b>PRACTICAL / DESIGN / DRAWING</b>											
6	ECE751	Seminar	0	0	4		-	50	-	50	1
7	ECE752	Industrial Training**					-	50	-	50	1
8	ECE753	Project#	0	0	4		-	100	-	100	3
9	GP 701	General Proficiency	-	-	-	-	-	50	-	50	1
		<b>Total</b>	<b>15</b>	<b>5</b>	<b>8</b>					<b>1000</b>	<b>26</b>

\*\* 4 weeks Industrial Training after VI semester to be evaluated in VII semester.

# Project should be initiated in VII semester beginning and should be completed by the end of VIII semester.

G. B. TECHNICAL UNIVERSITY, LUCKNOW

Study & Evaluation Scheme

B Tech Civil Engineering

Effective from session 2011-12

Final Year , VIII Semester

S No	Course Code	SUBJECT	PERIODS			Evaluation Scheme			Subject Total	Credit	
			L	T	P	Sessional Exam		ESE			
						CT	TA				Total
THEORY SUBJECT											
1	EOE081- EOE084	Open Elective – II	3	1	0	30	20	50	100	150	4
2	ECE051- ECE054	Departmental Elective-V	3	1	0	30	20	50	100	150	4
3	ECE061- ECE064	Departmental Elective-VI	3	1	0	30	20	50	100	150	4
4	ECE801	Construction Technology & Management	3	1	0	30	20	50	100	150	3
PRACTICAL / DESIGN / DRAWING											
5	ECE851	Project	0	0	12		100	100	250	350	8
6	GP 801	General Proficiency	-	-	-	-	-	50	-	50	1
		Total	12	4	12					1000	24



## **MODIFIED LIST OF PROFESSIONAL / DEPARTMENTAL ELECTIVES**

### **Departmental Elective-I**

- ECE 011 - Advanced Foundation Design
- ECE 012 - Matrix Analysis of Structures
- ECE 013 - Environmental Management for Industries
- ECE 014 - Principles of Town Planning and Architecture

### **Departmental Elective-II**

- ECE 021 - Advanced Concrete Design
- ECE 022 - Earth and Earth Retaining Structures
- ECE 023 - Transportation System and Planning
- ECE 024 - Rural Water Supply and Sanitation

### **Departmental Elective-III**

- ECE 031 - Bridge Engineering
- ECE 032 - Finite Element Methods
- ECE 033 - Environmental Geo-technology
- ECE 034 - Industrial Pollution Control & Env. Audit
- ECE 035 - Engineering Hydrology

### **Departmental Elective-IV**

- ECE 041 - Precast and Modular Construction Practices
- ECE 042 - Plastic Analysis of Structures
- ECE 043 - Open Channel Flow
- ECE 044 - Tunnel Engineering

### **Departmental Elective-V**

- ECE 051 - Computer Aided Design
- ECE 052 - Analysis and Design of Hydraulic Structures
- ECE 053 - Water Resources Systems
- ECE 054 - Machine Foundation Design

### **Departmental Elective-VI**

- ECE061 - Ground Improvement Techniques
- ECE 062 - River Engineering
- ECE 063 - Groundwater Management
- ECE 064 - Earthquake Resistant Design of Structures

**UTTAR PRADESH TECHNICAL UNIVERSITY**

**LUCKNOW**



**Syllabus**

**for**

**B.Tech. Biotechnology  
of  
Second Year**

**(Effective from the Session: 2014-15)**

*P. Prasad*  
Director  
IMS Engineering College  
Ghaziabad

**STUDY AND EVALUATION SCHEME**  
**B.TECH. BIO-TECHNOLOGY**  
(Effective from the session: 2014-15)

2<sup>nd</sup> Year, Semester-III

S. No.	Subject Code	Name of Subject	Periods			Evaluation Scheme			Subject Total	Credit	
			L	T	P	Sessional Assessment					
						CT	TA	Total			
<b>THEORY SUBJECT</b>											
1	NBT-301/ NOE-031-039	Elementary Mathematics-III/ Science based Elective	3	1	0	30	20	50	100	150	4
2	NBT-302	Fluid Flow and Solid Handling	3	1	0	30	20	50	100	150	4
3	NBT-303	Biochemistry	3	1	0	30	20	50	100	150	4
4	NBT-304	Microbiology & Cell Biology	3	1	0	30	20	50	100	150	4
5	NHU-301/NHU-302	Industrial Psychology/ Industrial Sociology	2	0	0	15	10	25	50	75	2
6	NBT-305	Genetics & Molecular Biology	2	1	0	15	10	25	50	75	3
7	AUC-001/ AUC-002	<i>Human Values &amp; Professional Ethics/Cyber Security</i>	2	0	0	15	10	25	50	75*	
<b>PRACTICAL/DESIGN/DRAWING</b>											
7	NBT-351	Fluid Flow and Solid Handling Lab	0	0	3	10	10	20	30	50	1
8	NBT-352	Biochemistry Lab	0	0	3	10	10	20	30	50	1
9	NBT-353	Microbiology & Cell Biology Lab	0	0	2	10	10	20	30	50	1
10	NBT-354	Genetics & Molecular Biology Lab	0	0	2	10	10	20	30	50	1
11	NGP-301	NGP						50		50	
		<b>TOTAL</b>	<b>18</b>	<b>5</b>	<b>10</b>					<b>1000</b>	<b>25</b>

L: Lecture T: Tutorial P: Practical/Project CT: Class Test TA: Teacher's Assessment, ESE: End Semester Examination  
TA = 10 (5 for teachers assessment plus 5 for attendance)  
TA = 20 (10 for teachers assessment plus 10 for attendance)  
ESE (Practical) = 30 (10 marks for practical exam. 10 marks viva. 4 marks for lab records and 6 marks for quiz)

**Science Based Open Elective:**

- NOE031 Introduction to Soft Computing (Neural Network, Fuzzy Logic and Genetic Algorithm)
- NOE032 Nano Sciences
- NOE033 Laser Systems and Applications
- NOE034 Space Sciences
- NOE035 Polymer Science & Technology
- NOE036 Nuclear Science
- NOE037 Material Science
- NOE038 Discrete Mathematics
- NOE039 Applied Linear Algebra

\* Human Values & Professional Ethics will be offered as compulsory Audit Course for which passing marks are 40% in theory & 50% in aggregate. Student will be required to audit it within the period of their study. There will not be carry over facility for this course and a failed student will be required to repeat this course.

  
Director  
IMS Engineering College  
Ghaziabad

**STUDY AND EVALUATION SCHEME**  
**B.TECH. BIO-TECHNOLOGY**  
(Effective from the session: 2014-15)

2<sup>nd</sup> Year, Semester-IV

S. No.	Subject Code	Name of Subject	Periods			Evaluation Scheme			Subject Total	Credit	
			L	T	P	Sessional Assessment		ESE			
						CT	TA				Total
<b>THEORY SUBJECT</b>											
1	NOE-041-049/ NBT-401	Science based Elective/ Elementary Mathematics-III	3	1	0	30	20	50	100	150	4
2	NBT-402	Heat & Mass Transfer	3	1	0	30	20	50	100	150	4
3	NBT-403	Enzyme Engineering	3	1	0	30	20	50	100	150	4
4	NBT-404	Immunology	3	1	0	30	20	50	100	150	4
5	NHU-402/ NHU-401	Industrial Sociology/ Industrial Psychology	2	0	0	15	10	25	50	75	2
6	NBT-405	Molecular Dynamics & Bioenergetics	2	1	0	15	10	25	50	75	3
	AUC-002/ AUC-001	<i>Cyber Security/ Human Values &amp; Professional Ethics</i>	2	0	0	15	10	25	50	75*	
<b>PRACTICAL/DESIGN/DRAWING</b>											
7	NBT-452	Heat & Mass Transfer Lab	0	0	3	10	10	20	30	50	1
8	NBT-453	Enzyme Engineering Lab	0	0	3	10	10	20	30	50	1
9	NBT-454	Immunology Lab	0	0	2	10	10	20	30	50	1
10	NBT-455	Molecular Dynamics & Bioenergetics Lab	0	0	2	10	10	20	30	50	1
11	NGP-401	GP						50		50	
		<b>TOTAL</b>	<b>18</b>	<b>5</b>	<b>10</b>					<b>1000</b>	<b>25</b>

L: Lecture T: Tutorial P: Practical/Project CT: Class Test TA: Teacher's Assessment, ESE: End Semester Examination

TA = 10 (5 for teachers assessment plus 5 for attendance)

TA = 20 (10 for teachers assessment plus 10 for attendance)

ESE (Practical) = 30 (10 marks for practical exam. 10 marks viva. 4 marks for lab records and 6 marks for quiz)

**Science Based Open Elective:**

NOE-041 Introduction to Soft Computing (Neural Network, Fuzzy Logic and Genetic Algorithm)

NOE-042 Nano Sciences

NOE-043 Laser Systems and Applications

NOE-044 Space Sciences

NOE-045 Polymer Science & Technology

NOE-046 Nuclear Science

NOE-047 Material Science

NOE-048 Discrete Mathematics

NOE-049 Applied Linear Algebra

\* Human Values & Professional Ethics will be offered as compulsory Audit Course for which passing marks are 40% in theory & 50% in aggregate. Student will be required to audit it within the period of their study. There will not be carry over facility for this course and a failed student will be required to repeat this course.

  
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**UTTAR PRADESH TECHNICAL UNIVERSITY**

**LUCKNOW**



**Syllabus**

**for**

**B.Tech. Biotechnology  
of  
Third Year**

**(Effective from the Session: 2015-16)**

*P. Prakash*  
Director  
IMS Engineering College  
Ghaziabad

## U.P. TECHNICAL UNIVERSITY, LUCKNOW

### Study and Evaluation Scheme B.TECH. BIOTECHNOLOGY (Effective from the session: 2015-16)

3<sup>rd</sup> Year, Semester-V

S. No.	Subject Code	Name of Subject	Periods			Evaluation Scheme				Subject Total	Credit
			L	T	P	Sessional Assessment			ESE		
						CT	TA	Total			
<b>THEORY SUBJECT</b>											
1	NBT-501	Genetic Engineering	3	1	0	30	20	50	100	150	4
2	NBT-502	Bioinformatics-I	3	1	0	30	20	50	100	150	4
3	NBT-503	Bioprocess Engineering	3	1	0	30	20	50	100	150	4
4	NBT-504	Plant Biotechnology	3	1	0	30	20	50	100	150	4
5	NBT-505	Modern Analytical Techniques	2	1	0	15	10	25	50	75	3
6	NHU-501	Engineering Economics	2	0	0	15	10	25	50	75	2
<b>PRACTICAL/DESIGN/DRAWING</b>											
7	NBT-551	Genetic Engineering Lab	0	0	3	10	10	20	30	50	1
8	NBT-552	Bioinformatics-I Lab	0	0	2	10	10	20	30	50	1
9	NBT-553	Bioprocess Engineering Lab	0	0	3	10	10	20	30	50	1
10	NBT-554	Plant Biotechnology Lab	0	0	2	10	10	20	30	50	1
11	NGP-501	GP						50		50	
		<b>TOTAL</b>	<b>16</b>	<b>5</b>	<b>10</b>					<b>1000</b>	<b>25</b>

L: Lecture T: Tutorial P: Practical/Project CT: Class Test TA: Teacher's Assessment, ESE: End Semester Examination

TA = 10 (5 for teachers assessment plus 5 for attendance)

TA = 20 (10 for teachers assessment plus 10 for attendance)

ESE (Practical) = 30 (10 marks for practical exam. 10 marks viva. 4 marks for lab records and 6 marks for quiz)



## U.P. TECHNICAL UNIVERSITY, LUCKNOW

### Study and Evaluation Scheme B.TECH. BIOTECHNOLOGY

(Effective from the session: 2015-16)

3<sup>rd</sup> Year, Semester-VI

S. No.	Subject Code	Name of Subject	Periods			Evaluation Scheme			Subject Total	Credit	
			L	T	P	Sessional Assessment					ESE
						CT	TA	Total			
<b>THEORY SUBJECT</b>											
1	NBT-601	Fermentation Biotechnology	3	1	0	30	20	50	100	150	4
2	NBT-602	Environmental Biotechnology	3	1	0	30	20	50	100	150	4
3	NBT-603	Bioinformatics-II	3	1	0	30	20	50	100	150	4
4	NBT-011/NBT-012/NBT-013	Departmental Elective-I	3	1	0	30	20	50	100	150	4
5	NBT-021/NBT-022/NBT-023	Departmental Elective-II	2	1	0	15	10	25	50	75	3
6	NHU-601	Industrial Management	2	0	0	15	10	25	50	75	2
<b>PRACTICAL/DESIGN/DRAWING</b>											
7	NBT-651	Fermentation Biotechnology Lab	0	0	3	10	10	20	30	50	1
8	NBT-652	Environmental Biotechnology Lab	0	0	2	10	10	20	30	50	1
9	NBT-653	Bioinformatics-II Lab	0	0	2	10	10	20	30	50	1
10	NBT-654	Seminar	0	0	3		50	50		50	1
11	NGP-601	GP						50		50	
		<b>TOTAL</b>	<b>16</b>	<b>5</b>	<b>10</b>					<b>1000</b>	<b>25</b>

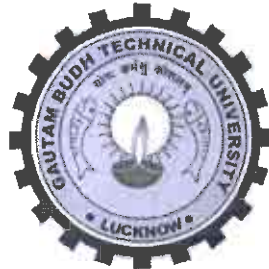
L: Lecture T: Tutorial P: Practical/Project CT: Class Test TA: Teacher's Assessment, ESE: End Semester Examination

TA = 10 (5 for teachers assessment plus 5 for attendance)

TA = 20 (10 for teachers assessment plus 10 for attendance)

ESE (Practical) = 30 (10 marks for practical exam. 10 marks viva. 4 marks for lab records and 6 marks for quiz)

# G.B. TECHNICAL UNIVERSITY, LUCKNOW



## Syllabus

**1<sup>st</sup>, 2<sup>nd</sup>, 3<sup>rd</sup> and 4<sup>th</sup> Year**  
(Effective from session : 2009-10)

**B. TECH. BIO-TECHNOLOGY**

*Prabhat*

Director  
IMS Engineering College ]  
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**U.P. TECHNICAL UNIVERSITY, LUCKNOW**  
 Study and Evaluation Scheme  
 B.TECH BIO-TECHNOLOGY  
 [Effective from the session 2011-12]  
 YEAR 4<sup>th</sup>, SEMESTER-VII  
 (Revised)

S. No.	Course Code	SUBJECT	PERIODS			Evaluation Scheme				Subject Total	Credit
			L	T	P	SESSIONAL EXAM.			ESE		
			CT	TA	Total						
<b>THEORY SUBJECTS</b>											
1.	EOE-071- EOE-074	Open Elective-I	3	1	0	30	20	50	100	150	4
2.	EBT-031- EBT-032	Departmental Elective-III	3	1	0	30	20	50	100	150	4
3.	EBT-041- EBT-042	Departmental Elective-IV	3	1	0	30	20	50	100	150	4
4.	EBT-701	Down Stream Processing	3	1	0	30	20	50	100	150	4
5.	EBT-702	Bioethics, Biosafety & IPR	3	0	0	30	20	50	100	150	4
<b>PRACTICAL/DESIGN/DRAWING</b>											
6.	EBT-751	Down Stream Processing Lab	0	0	3	-	20	20	30	50	1
7.	EBT-752	Project	0	0	3	-	50	50	-	50	2
8.	EBT-753	Seminar	0	0	2	-	50	50	-	50	1
9.	EBT-754	Industrial Training Viva-Voce	0	0	2	-	50	50	-	50	1
10.	GP 701	General Proficiency	-	-	-	-	-	50	-	50	1
<b>Total</b>			15	3	10	150	270	470	530	1000	26

**Open Electives-I**

EOE-071      Entrepreneurship Development  
 EOE-072      Quality Management  
 EOE-073      Operation Research  
 EOE-074      Introduction to Biotechnology

**Note :** Biotechnology students cannot take the Open Elective course EOE-074 Introduction to Biotechnology.

**U.P. TECHNICAL UNIVERSITY, LUCKNOW**

Study and Evaluation Scheme  
B.TECH BIO-TECHNOLOGY  
[Effective from the session 2011-12]  
YEAR 4<sup>th</sup>, SEMESTER-VIII

S. No.	Course Code	SUBJECT	PERIODS			Evaluation Scheme				Subject Total	Credit
			L	T	P	SESSIONAL EXAM.			ESE		
						CT	TA	Total			
<b>THEORY SUBJECTS</b>											
1.	EOE-081- EOE-084	Open Elective-II**	3	1	0	30	20	50	100	150	4
2.	EBT-051- EBT-052	Departmental Elective-V	3	1	0	30	20	50	100	150	4
3.	EBT-061- EBT-062	Departmental Elective-VI	3	1	0	30	20	50	100	150	4
4.	EBT-801	Environmental Biotechnology	3	0	0	30	20	50	100	150	3
<b>PRACTICAL/DESIGN/DRAWING</b>											
5.	EBT-851	Project	0	0	12	-	100	100	250	350	8
6.	GP 801	General Proficiency	-	-	-	-	-	50	-	50	1
		<b>Total</b>	<b>12</b>	<b>3</b>	<b>12</b>	<b>120</b>	<b>180</b>	<b>350</b>	<b>650</b>	<b>1000</b>	<b>24</b>

**Open Electives-II**

**Paper Code**

**Name**

EOE-081	Non Conventional Energy Resources
EOE-082	Non Linear Dynamic System
EOE-083	Product Development
EOE-084	Automation and Robotics

  
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**B.TECH. BIOTECHNOLOGY**  
**List of Departmental Electives**

**Elective-I**

<b>S.No.</b>	<b>Paper Code</b>	<b>Name</b>
1.	EBT-011	Animal Biotechnology
2.	EBT-012	Plant Biotechnology

**Elective-II**

1.	EBT-021	Enzyme & Protein Engineering
2.	EBT-022	Biophysics
3.		

**Elective-III**

1.	EBT-031	Vaccine Technology & Immunoinformatics
2.	EBT-032	Biofuels & Alcohol Technology

**Elective-IV**

1.	EBT-041	Molecular Modeling & Drug Design
2.	EBT-042	Bioprocess Engineering-II

**Elective-V**

1.	EBT-051	Biotechnology in Health Care
2.	EBT-052	Nanobiotechnology

**Elective-VI**

1.	EBT-061	Biomedical Instrumentation
2.	EBT-062	Genomics & Proteomics

  
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**UTTAR PRADESH TECHNICAL UNIVERSITY  
LUCKNOW**



**SYLLABUS**

**Master of Business Administration (MBA)**

(Effective from Session 2013-2014)

*Prakash*  
Director  
IMS Engineering College  
Ghaziabad

## STUDY AND EVALUATION SCHEME

COURSE: MBA Effective from Session 2013-2014 Year 1 Semester 1

S.N.	Course Code	Subject	EVALUATION SCHEME				
			SESSIONAL EXAMS			ESE	Total
			CT	TA	Total		
1.	NMBA 011	Managing Organization	30	20	50	100	150
2.	NMBA 012	Managerial Economics	30	20	50	100	150
3.	NMBA 013	Business Accounting	30	20	50	100	150
4.	NMBA 014	Business Environment	30	20	50	100	150
5.	NMBA 015	Business Statistics	30	20	50	100	150
6.	NMBA 016	Marketing Management	30	20	50	100	150
7.	NMBA 017	Communication for Management	30	20	50	100	150
8.	NMBA 018	Fundamentals of Computer & Information System	30	20	50	100	150
		<b>Total</b>					<b>1200</b>

  
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## STUDY AND EVALUATION SCHEME

COURSE: MBA Effective from Session 2013-2014 Year 1 Semester II

S.N.	Course Code	Subject	EVALUATION SCHEME				
			SESSIONAL EXAMS			ESE	Total
			CT	TA	Total		
1.	NMBA 021	Managing Human Resources	30	20	50	100	150
2.	NMBA 022	Business Laws	30	20	50	100	150
3.	NMBA 023	Customer Relationship Management	30	20	50	100	150
4.	NMBA 024	Financial Management	30	20	50	100	150
5.	NMBA 025	Operation Research					
6.	NMBA 026	Cost & Management Accounting	30	20	50	100	150
7.	NMBA 027	Operations Management	30	20	50	100	150
8.	NMBA 028	Research Methodology	30	20	50	100	150
9.	NMBA 029	Comprehensive Viva (CV)					100
		<b>Total</b>					<b>1300</b>

  
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## STUDY AND EVALUATION SCHEME

COURSE: MBA Effective from Session 2013-2014 Year 2 Semester III

S.N.	Course Code	Subject	EVALUATION SCHEME				
			SESSIONAL EXAMS			ESE	Total
			CT	TA	Total		
1.	NMBA 031	Entrepreneurship Development	30	20	50	100	150
2.	NMBA 032	International Business Management	30	20	50	100	150
3.	NMBA 033	Rural Development	30	20	50	100	150
4.	NMBA 034	Project Management	30	20	50	100	150
5.		Specialization Group -1 Elective 1*	30	20	50	100	150
6.		Specialization Group -1 Elective 2*	30	20	50	100	150
7.		Specialization Group -2 Elective 1*	30	20	50	100	150
8.		Specialization Group -2 Elective 2*	30	20	50	100	150
9.	NMBA 035	Summer Training Project Report	-	-	-	-	150
10.	AUC-001/ AUC-002	** <i>Human Value &amp; Professional Ethics/ Cyber Security</i>	15	10	25	50	75
		<b>Total</b>					<b>1350</b>

**\*\* Marks will be not added in TOTAL, it is qualifying paper.**

\*Human values & Professional Ethics /Cyber Security will be offered as a compulsory audit course for which passing marks are 30% in End Semester Examination and 40% in aggregate.

  
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## STUDY AND EVALUATION SCHEME

COURSE: MBA Effective from Session 2013-2014 Year2 Semester IV

S.N.	Course Code	Subject	EVALUATION SCHEME				
			SESSIONAL EXAMS			ESE	Total
			CT	TA	Total		
1.	NMBA 041	Strategic Management	30	20	50	100	150
2.	NMBA 042	Insurance & Risk Management	30	20	50	100	150
3.	NMBA 043	Hospitality & Tourism Management	30	20	50	100	150
4.	NMBA 044	Behavioral Finance	30	20	50	100	150
5.	-	Specialization Group -1 Elective 3*	30	20	50	100	150
6.	-	Specialization Group -2 Elective 3*	30	20	50	100	150
7.	NMBA 045	Research Project Report	30	20	50	100	150
8.	NMBA 046	Comprehensive Viva (CV)	-	-	-	-	100
	AUC-002/ AUC-001	** Cyber Security / Human Value & Professional Ethics	15	10	25	50	75
9.		Total	-	-	-	-	1150
		<b>Grand Total(Sem. 1 to 4)</b>					<b>5000</b>

TA – Teacher Assessment  
 CT – Cumulative Test  
 ESE - End Semester Examination.

\*Human values & Professional Ethics /Cyber Security will be offered as a compulsory audit course for which passing marks are 30% in End Semester Examination and 40% in aggregate.

  
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## **ELECTIVE PAPERS**

### **Specialization Group: Human Resource**

#### **Course Code**

1. NMBA HR 01 Leadership & Personality Development..... (III Semester)
2. NMBA HR02 Industrial Relations & Labour Enactments..... (III Semester)
3. NMBA HR 03 Negotiation & Counseling ..... (IV Semester)

### **Specialization Group: Marketing**

#### **Course Code**

1. NMBA MK 01 Consumer Behaviour & Customer Loyalty..... (III Semester)
2. NMBA MK 02 Integrated Marketing Communications ..... (III Semester)
3. NMBA MK 03 Retailing & Distribution Management ..... (IV Semester)

### **Specialization Group: Financial Management**

#### **Course Code**

1. NMBA FM 01 Security Analysis & Investment Management .....(III Semester).
2. NMBA FM 02 Management of Financial Institutions & Services.... (III Semester).
3. NMBA FM 03 Tax Planning and Management ..... (IV Semester)

### **Specialization Group: Information Technology**

#### **Course Code**

1. NMBA IT 01 Database Management System ..... (III Semester)
2. NMBA IT 02 System Analysis & Design..... (III Semester)
3. NMBA IT 03 Data Communication & Network ..... (IV Semester)

### **Specialization Group: International Business**

#### **Course Code**

1. NMBA IB01 International Marketing Management ..... (III Semester)
2. NMBA IB02 International Logistics & Documentation ..... (III Semester)
3. NMBA IB03 International Financial Management ..... (IV Semester)

### **Specialization Group: Rural Development**

#### **Course Code**

1. NMBA RD0 1 Rural Marketing..... (III Semester)
2. NMBA RD 02 Micro Finance, Small Group Management, and Cooperatives .... (III Semester)
3. NMBA RD03 Food Technology & Processing Management ..... (IV Semester)



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**U.P. TECHNICAL UNIVERSITY**

**LUCKNOW**



**Syllabus**

**of**

1. **M.Tech. Computer Science**
2. **M.Tech. Information Technology**

*Handwritten signature*

*Prabhat*  
Director  
IMS Engineering College  
Ghaziabad

Appendix - I: Study and Evaluation Scheme

UPTU M. Tech. - CS/IT

SEMESTER-1

S.N.	Course Code	Subject	Periods			Evaluation Scheme				Subject Total
						Sessional			ESE	
		Theory	L	T	Lab	CT	TA	Total	Total	
1.	CS/IT 11	Foundations of Computer Science	3	1		20	30	50	100	150
2.	CS/IT 12	Computer Organization and Architecture	3	1		20	30	50	100	150
3.	CS/IT 13	OS and DBMS	3	1	2	20	30*	50	100	150
4.	CS/IT 14	Data Networks	3	1	2	20	30*	50	100	150
		Total	12	4	4			200	400	600

  
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**SEMESTER-II**

Sl. No.	Course Code	Subject	Periods			Evaluation Scheme				Subject Total
						Sessional			ESE	
		Theory	L	T	Lab (*)	CT	TA	Total	Total	
1.	CS/IT 2xy **	Elective - 1	3	1		20	30*		100	150
2.	CS/IT 2xy **	Elective - 2	3	1		20	30*		100	150
3.	CS/IT 2xy **	Elective - 3	3	1		20	30*		100	150
4.	CS/IT 2xy **	Elective - 4	3	1		20	30*		100	150
		<b>Total</b>	<b>12</b>	<b>4</b>				<b>200</b>	<b>400</b>	<b>600</b>

\* 30 marks are kept for tutorials, assignments, quizzes and lab

\*\* Refer the list of streams and their respective courses for the values of x and y

(\*) The existence of 2 periods of lab for elective will be decided as per the nature of the elective

UPTU M. Tech. - CS/IT

SEMESTER-III

S.N.	Course Code	Subject	Periods			Evaluation Scheme				Subject Total
						Sessional			ESE	
		Theory	L	T	Lab (*)	CT	TA	Total	Total	
1.	CS/IT 3xy **	Elective - 5	3	1		20	30*	50	100	150
2.	CS/IT 3xy **	Elective - 6	3	1		20	30*	50	100	150
3.	CS/IT 31	Professional Aspects in Software Engineering	2			50		50		50
4.	CS/IT 32	Seminar						50		50
5.	CS/IT 33	Dissertation						100		100
		<b>Total</b>	<b>8</b>	<b>2</b>				<b>300</b>	<b>200</b>	<b>500</b>

\* 30 marks are kept for tutorials, assignments, quizzes and lab

\*\* Refer the list of streams and their respective courses for the values of x and y

(\*) The existence of 2 periods of lab for elective/dissertation will be decided as per the nature of the elective/dissertation

UPTU M. Tech. – CS/IT

SEMESTER-IV

S.N.	Course Code	Subject	Periods			Evaluation Scheme				Subject Total
						Sessional			ESE	
		Theory	E	T	Lab (*)	CT	TA	Total	Total	
1.	CS/IT 41	Dissertation	-	-		-	-	100	200	300
		<b>Total</b>						<b>100</b>	<b>200</b>	<b>300</b>

(\*) The existence and duration of lab will be decided as per the nature of the dissertation

  
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Stream	Subject	Value of xy for subject code	Prerequisite Elective Subject
<i>Distributed Systems</i>	Distributed Computing	11	
	Mobile Computing	12	
	Analysis & Design of Real-Time Systems	13	
	Dedicated System Design	14	
	VLSI Design	15	
<i>Software Engineering</i>	Engineering and Testing Structured Systems	21	
	Object-Oriented Programming	22	
	Engineering Object Oriented Systems	23	OOP
	Multimedia System	24	
	Internet Programming and Web Service Engineering	25	
<i>Information Systems</i>	Conceptual Modeling	31	
	Requirements Engineering	32	ETSS/CM
	Method Engineering	33	ETSS/CM
	Process Engineering	34	ETSS
	Simulation and Modeling	35	
<i>Data Management</i>	Distributed DBMS	41	
	Data Warehousing	42	
	Multimedia Databases	43	
<i>AI</i>	✓ AI	51	
	Data Mining	52	AI
	Knowledge Based System	53	AI
	Natural Language Processing	54	AI
<i>Theoretical CS</i>	✓ Parallel Algorithms	61	
	Randomized Algorithms	62	
	Approximation Algorithms	63	
	Complexity Theory	64	
	Computational Geometry	65	
<i>Security</i>	Cryptography	71	
	Network and System Security	72	Cryptography
	Digital Forensic	73	Cryptography

**NOTE:**

The students are required to select courses from at least three streams.  
 CS students have to select at least one course each from Theoretical CS and from Distributed Systems.  
 IT students have to select at least one course each from Software Engineering, Information Systems and Data Management.

# M.TECH. BIOTECHNOLOGY

(A two Year – Four Semester, Full Time, Post Graduate Degree Program)

## COURSE STRUCTURE & SCHEME OF EXAMINATION '2004

### SEMESTER I

Sr. No	Course Code	Subject	Periods					Evaluation Scheme					Subject Total
			L	T	P	CT	Lab	Sessional			Examination ESE		
								Attendance	TA	Total			
1.	BT11	Biochemistry, Biophysics and Microbiology	3	0	0	30	-	10	10	50	100	150	
2.	BT12	Principles of Bioprocess Engineering	3	0	3	15	15	10	10	50	100	150	
3.	BT13	Genetics, Molecular Biology and Immunology	3	0	3	15	15	10	10	50	100	150	
4.	BT14	Elective I	3	0	0	30	-	10	10	50	100	150	
		<b>Total</b>	<b>12</b>	<b>0</b>	<b>6</b>					<b>200</b>	<b>400</b>	<b>600</b>	

*P. Prasad*

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SEMESTER IV

Sr No	Course Code	Subject	Periods				Evaluation Scheme					Subject Total	
			L	T	P	CT	Sessional			Examination			
							Lab	Attendance	TA		Total		ESE
L	DR01	Dissertation **	-	-	18	-	-	-	-	-	200	200	400
												(100+100)	
		Total	-	-	18						200	200	400

\*\* 100 marks are for dissertation work of semester III and 100 marks are for dissertation work of semester IV

NOTE: -

1. Selection of elective paper(s) shall be done by the Course Coordinator according to availability of specialized faculty from respective list of electives in each semester.
2. For dissertation, the students are required to compile a report including title of the dissertation, literature review, methodology of work to be pursued and activity schedule in the III semester. The compiled report shall be presented at the end of the IIIrd semester. Same dissertation shall be continued in the fourth semester.

  
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# UTTAR PRADESH TECHNICAL UNIVERSITY

IET Campus, Sitapur Road, LUCKNOW  
[Effective from Session – 2009-10]



## COURSE STRUCTURE AND SYLLABUS

for

M.Tech. Programme in Mechanical Engineering

### Regular 4 Semester Programme

- M.Tech. in Mechanical Engineering
- M.Tech. in Mechanical Engineering with specialization in Computer Integrated Manufacturing
- M.Tech. in Mechanical Engineering with specialization in Computer Aided Design
- M.Tech. in Mechanical Engineering with specialization in Advanced Computer Aided Design
- M.Tech. in Mechanical Engineering with specialization in Manufacturing Science & Technology
- M.Tech. in Mechanical Engineering with specialization in Manufacturing Systems Engineering
- M.Tech. in Mechanical Engineering with specialization in Production Engineering
- M.Tech. in Mechanical Engineering with specialization in Thermal Engineering
- M.Tech. in Mechanical Engg. with specialization in Machine Design

### Part Time 6 Semester Programme

- M.Tech. in Mechanical Engineering with specialization in Design Engineering
- M.Tech. in Mechanical Engineering with specialization in Industrial System Engineering
- M.Tech. in Mechanical Engineering

(1)

*Prakash*

Director  
IMS Engineering College  
Ghaziabad

UP Technical University, Lucknow  
M.Tech.- Mechanical Engineering (Regular Programme)

S N	Course Code	Subject	Periods			Evaluation Scheme				Subject Total	
			L	T	P	Sessional			Exam		
						CT	Attd	TA			Total
<b>Semester I</b>											
1	MME-101	Numerical Methods & Computer Programming	3	1	2	30*	10	10	50	100	150
2	MME-102	Simulation, Modelling and Analysis	3	1	-	30	10	10	50	100	150
3	MME-105	Applied Operations Research	3	1	-	30	10	10	50	100	150
4	MME-1??	Elective-I	3	1	2	30*	10	10	50	100	150
<b>Total</b>			<b>12</b>	<b>4</b>	<b>4</b>				<b>200</b>	<b>400</b>	<b>600</b>
<b>Semester II</b>											
1	MME-201	Optimization for Engineering Design	3	1	2	30*	10	10	50	100	150
2	MME-205	Advanced Mechanics of Solids	3	1	-	30	10	10	50	100	150
3	MME-207	Production Technology	3	1	-	30	10	10	50	100	150
4	MME-2??	Elective-II	3	1	2	30*	10	10	50	100	150
<b>Total</b>			<b>12</b>	<b>4</b>	<b>4</b>				<b>200</b>	<b>400</b>	<b>600</b>
<b>Semester III</b>											
1	MME-306	Advanced Thermal Engineering	3	1	-	30	10	10	50	100	150
2	OEL-3??	Open Elective	3	1	-	30	10	10	50	100	150
3	MME-351	Dissertation #	-	-	8	-	-	-	50	-	50
4	MME-352	Seminar / Minor Project	-	-	2	-	-	-	100	-	100
<b>Total</b>			<b>6</b>	<b>2</b>	<b>10</b>				<b>250</b>	<b>200</b>	<b>450</b>
<b>Semester IV</b>											
1	MME-451	Dissertation	-	-	18	-	-	-	150	200	350
<b>Total</b>			<b>-</b>	<b>-</b>	<b>18</b>				<b>150</b>	<b>200</b>	<b>350</b>
<b>GRAND TOTAL</b>											
										<b>2000</b>	

Note: \*15 Marks are for Class Test and 15 Marks are for Lab, if any. Otherwise 30 Marks are for Class Test.  
# Dissertation to be continued in IV Semester

# MAHAMAYA TECHNICAL UNIVERSITY, NOIDA



## M.TECH, SECOND YEAR COURSES

Syllabus

FOR

1. Advanced Electronics and Communication Engineering.
2. VLSI
3. VLSI Design
4. VLSI System Design
5. VLSI and Embedded System

[Effective from the Session: 2013-14]

*Prashant*  
Director  
IMS Engineering College  
Ghaziabad

**U.P. TECHNICAL UNIVERSITY, LUCKNOW**  
**STUDY AND EVALUATION SCHEME**

**M.Tech (Advance Electronics and Communication) Specialization in VLSI Design**

**Semester – I**

S.No.	Sub. Code	Subject Name	L	T/P	Evaluation Scheme					Subject Total
					CT	ATT	TA	TOTAL	ES	
1	VD 101	Advanced Computer Architecture	3	1	30	10	10	50	100	150
2	VD102	VLSI Technology & Design	3	1	30	10	10	50	100	150
3	VD 103*	Digital Design using VHDL	3	3	30*	10	10	50	100	150
4	VD 01	Elective I	3	1	30	10	10	50	100	150
Total			12	6				200	400	600

\*15 marks for class test and 15 marks for lab

**Semester-II**

S.No.	Sub. Code	Subject Name	L	T/P	Evaluation Scheme					Subject Total
					CT	ATT	TA	TOTAL	ES	
1	VD 201	Analog VLSI Design	3	1	30	10	10	50	100	150
2	VD202	Low power VLSI Design	3	1	30	10	10	50	100	150
3	VD 203*	Algorithm or VLSI Design Automation	3	3	30*	10	10	50	100	150
4	VD 02	Elective-II	3	1	30	10	10	50	100	150

  
 Director  
 IMS Engineering College  
 Ghaziabad

Total	12	6			200	400	600
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15 marks for class test and 15 marks for lab

Semester -III

S.No.	Sub Code	Subject Name	L	T/P	Evaluation Scheme					Subject Total
					Sessional					
					CT	ATT	TA	TOTAL	ES	
1	VD 301	VLSI and Testability	3	1	30	10	10	50	100	150
2	VD03	Elective -II	3	1	30	10	10	50	100	150
3	VD 351	Seminar	-	2	-	-	-	100	-	100
4	VD 352	Dissertation	-	8	-	-	-	-	-	-
Total			6	12				200	200	400

Semester -IV

S.No.	Sub. Code	Subject Name	L	T/P	Evaluation Scheme					Subject Total
					Sessional					
					CT	ATT	TA	TOTAL	ES	
1	VD 451	Dissertation and Comprehensive Viva	-	18	-	-	-	200	200	40
Total			-	18	-	-	-	200	200	100

- 100 Marks are for VD 352 work of semester III and 100 marks for VD 451 work of semester IV.

*Prabhat*  
 Director  
 IMS Engineering College  
 Ghaziabad