

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
B.Tech. in MECHANICAL ENGINEERING
COURSE STRUCTURE & SYLLABUS (R18)

Applicable From 2018-19 Admitted Batch

I YEAR I SEMESTER

S. No.	Course Code	Course Title	L	T	P	Credits
1	MA101BS	Mathematics - I	3	1	0	4
2	PH102BS	Engineering Physics	3	1	0	4
3	CS103ES	Programming for Problem Solving	3	1	0	4
4	ME104ES	Engineering Graphics	1	0	4	3
5	PH105BS	Engineering Physics Lab	0	0	3	1.5
6	CS106ES	Programming for Problem Solving Lab	0	0	3	1.5
7	*MC109ES	Environmental Science	3	0	0	0
		Induction Programme				
		Total Credits	13	3	10	18

I YEAR II SEMESTER

S. No.	Course Code	Course Title	L	T	P	Credits
1	MA201BS	Mathematics - II	3	1	0	4
2	CH202BS	Chemistry	3	1	0	4
3	ME203ES	Engineering Mechanics	3	1	0	4
4	ME205ES	Engineering Workshop	1	0	3	2.5
5	EN205HS	English	2	0	0	2
6	CH206BS	Engineering Chemistry Lab	0	0	3	1.5
7	EN207HS	English Language and Communication Skills Lab	0	0	2	1
		Total Credits	12	3	8	19.0

II YEAR I SEMESTER

S. No.	Course Code	Course Title	L	T	P	Credits
1	MA301BS	Probability and Statistics & Complex Variables	3	1	0	4
2	ME302PC	Mechanics of Solids	3	1	0	4
3	ME303PC	Material Science and Metallurgy	3	0	0	3
4	ME304PC	Production Technology	3	0	0	3
5	ME305PC	Thermodynamics	3	1	0	4
6	ME306PC	Production Technology Lab	0	0	2	1
7	ME307PC	Machine Drawing Practice	0	0	2	1
8	ME308PC	Material Science and Mechanics of Solids Lab	0	0	2	1
9	*MC309	Constitution of India	3	0	0	0
		Total Credits	18	3	6	21

II YEAR II SEMESTER

S. No.	Course Code	Course Title	L	T	P	Credits
1	EE401ES	Basic Electrical and Electronics Engineering	3	0	0	3

R18 B.Tech. Mechanical Engg. Syllabus

JNTU HYDERABAD

2	ME402PC	Kinematics of Machinery	3	1	0	4
3	ME403PC	Thermal Engineering - I	3	1	0	4
4	ME404PC	Fluid Mechanics and Hydraulic Machines	3	1	0	4
5	ME405PC	Instrumentation and Control Systems	3	0	0	3
6	EE409ES	Basic Electrical and Electronics Engineering Lab	0	0	2	1
7	ME407PC	Fluid Mechanics and Hydraulic Machines Lab	0	0	2	1
8	ME408PC	Instrumentation and Control Systems Lab	0	0	2	1
10	*MC409	Gender Sensitization Lab	0	0	2	0
		Total Credits	15	3	8	21

III YEAR I SEMESTER

S. No.	Course Code	Course Title	L	T	P	Credits
1	ME501PC	Dynamics of Machinery	3	1	0	4
2	ME502PC	Design of Machine Members-I	3	0	0	3
3	ME503PC	Metrology & Machine Tools	3	0	0	3
4	SM504MS	Business Economics & Financial Analysis	3	0	0	3
5	ME505PC	Thermal Engineering-II	3	0	0	3
6	ME506PC	Operations Research	3	0	0	3
7	ME507PC	Thermal Engineering Lab	0	0	2	1
8	ME508PC	Metrology & Machine Tools Lab	0	0	2	1
9	ME509PC	Kinematics & Dynamics Lab	0	0	2	1
10	*MC510	Intellectual Property Rights	3	0	0	0
		Total Credits	21	1	6	22

III YEAR II SEMESTER

S. No	Course Code	Course Title	L	T	P	Credits
1	ME601PC	Design of Machine Members-II	3	0	0	3
2	ME602PC	Heat Transfer	3	1	0	4
3	ME603PC	CAD & CAM	3	0	0	3
4		Professional Elective - I	3	0	0	3
5		Open Elective - I	3	0	0	3
6	ME604PC	Finite Element Methods	3	0	0	3
7	ME605PC	Heat Transfer Lab	0	0	2	1
8	ME606PC	CAD & CAM Lab	0	0	2	1
9	EN608HS	Advanced Communication Skills lab	0	0	2	1
10	*MC609	Environmental Science	3	0	0	0
		Total Credits	21	1	6	22

IV YEAR I SEMESTER

S. No.	Course Code	Course Title	L	T	P	Credits
1	ME701PC	Refrigeration & Air Conditioning	3	0	0	3
2		Professional Elective – II	3	0	0	3
3		Professional Elective – III	3	0	0	3
4		Professional Elective - IV	3	0	0	3
5		Open Elective - II	3	0	0	3
6	ME702PC	Industrial Oriented Mini Project/ Summer Internship	0	0	0	2*
7	ME703PC	Seminar	0	0	2	1

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
B.Tech. in ELECTRONICS AND COMMUNICATION ENGINEERING
COURSE STRUCTURE & SYLLABUS (R18)

Applicable From 2018-19 Admitted Batch

I YEAR I SEMESTER

S. No.	Course Code	Course Title	L	T	P	Credits
1	MA101BS	Mathematics - I	3	1	0	4
2	AP102BS	Applied Physics	3	1	0	4
3	CS103ES	Programming for Problem Solving	3	1	0	4
4	ME104ES	Engineering Graphics	1	0	4	3
5	AP105BS	Applied Physics Lab	0	0	3	1.5
6	CS106ES	Programming for Problem Solving Lab	0	0	3	1.5
7	*MC109ES	Environmental Science	3	0	0	0
		Induction Programme				
		Total Credits	13	3	10	18

I YEAR II SEMESTER

S. No.	Course Code	Course Title	L	T	P	Credits
1	MA201BS	Mathematics - II	3	1	0	4
2	CH202BS	Chemistry	3	1	0	4
3	EE203ES	Basic Electrical Engineering	3	0	0	3
4	ME205ES	Engineering Workshop	1	0	3	2.5
5	EN205HS	English	2	0	0	2
6	CH206BS	Engineering Chemistry Lab	0	0	3	1.5
7	EN207HS	English Language and Communication Skills Lab	0	0	2	1
8	EE208ES	Basic Electrical Engineering Lab	0	0	2	1
		Total Credits	12	2	10	19

II YEAR I SEMESTER

S. No.	Course Code	Course Title	L	T	P	Credits
1	EC301PC	Electronic Devices and Circuits	3	1	0	4
2	EC302PC	Network Analysis and Transmission Lines	3	0	0	3
3	EC303PC	Digital System Design	3	1	0	4
4	EC304PC	Signals and Systems	3	1	0	4
5	EC305ES	Probability Theory and Stochastic Processes	3	0	0	3
6	EC306PC	Electronic Devices and Circuits Lab	0	0	2	1
7	EC307PC	Digital System Design Lab	0	0	2	1
8	EC308ES	Basic Simulation Lab	0	0	2	1
9	*MC309	Constitution of India	3	0	0	0
		Total Credits	18	3	6	21

II YEAR II SEMESTER

S. No.	Course Code	Course Title	L	T	P	Credits
1	MA401BS	Laplace Transforms, Numerical Methods & Complex Variables	3	1	0	4
2	EC402PC	Electromagnetic Fields and Waves	3	0	0	3

3	EC403PC	Analog and Digital Communications	3	1	0	4
4	EC404PC	Linear IC Applications	3	0	0	3
5	EC405PC	Electronic Circuit Analysis	3	0	0	3
6	EC406PC	Analog and Digital Communications Lab	0	0	3	1.5
7	EC407PC	IC Applications Lab	0	0	3	1.5
8	EC408PC	Electronic Circuit Analysis Lab	0	0	2	1
9	*MC409	Gender Sensitization Lab	0	0	2	0
		Total Credits	15	2	10	21

III YEAR I SEMESTER

S. No.	Course Code	Course Title	L	T	P	Credits
1	EC501PC	Microprocessors & Microcontrollers	3	1	0	4
2	EC502PC	Data Communications and Networks	3	1	0	4
3	EC503PC	Control Systems	3	1	0	4
4	SM504MS	Business Economics & Financial Analysis	3	0	0	3
5		Professional Elective - I	3	0	0	3
6	EC505PC	Microprocessors & Microcontrollers Lab	0	0	3	1.5
7	EC506PC	Data Communications and Networks Lab	0	0	3	1.5
8	EN508HS	Advanced Communication Skills Lab	0	0	2	1
9	*MC510	Intellectual Property Rights	3	0	0	0
		Total Credits	18	3	8	22

III YEAR II SEMESTER

S. No.	Course Code	Course Title	L	T	P	Credits
1	EC601PC	Antennas and Propagation	3	1	0	4
2	EC602PC	Digital Signal Processing	3	1	0	4
3	EC603PC	VLSI Design	3	1	0	4
4		Professional Elective - II	3	0	0	3
5		Open Elective - I	3	0	0	3
6	EC604PC	Digital Signal Processing Lab	0	0	3	1.5
7	EC605PC	e – CAD Lab	0	0	3	1.5
8	EC606PC	Scripting Languages Lab	0	0	2	1
9	*MC609	Environmental Science	3	0	0	0
		Total Credits	18	3	8	22

IV YEAR I SEMESTER

S. No.	Course Code	Course Title	L	T	P	Credits
1	EC701PC	Microwave and Optical Communications	3	0	0	3
2		Professional Elective – III	3	0	0	3
3		Professional Elective – IV	3	0	0	3
4		Open Elective - II	3	0	0	3
5	SM702MS	Professional Practice, Law & Ethics	2	0	0	2
6	EC703PC	Microwave and Optical Communications Lab	0	0	2	1
7	EC704PC	Industrial Oriented Mini Project/ Summer Internship	0	0	0	2*
8	EC705PC	Seminar	0	0	2	1
9	EC706PC	Project Stage - I	0	0	6	3
		Total Credits	14	0	10	21

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
B.Tech. in CIVIL ENGINEERING
COURSE STRUCTURE & SYLLABUS (R18)

Applicable From 2018-19 Admitted Batch

I YEAR I SEMESTER

S. No.	Course Code	Course Title	L	T	P	Credits
1	MA101BS	Mathematics - I	3	1	0	4
2	PH102BS	Engineering Physics	3	1	0	4
3	CS103ES	Programming for Problem Solving	3	1	0	4
4	ME104ES	Engineering Graphics	1	0	4	3
5	PH105BS	Engineering Physics Lab	0	0	3	1.5
6	CS106ES	Programming for Problem Solving Lab	0	0	3	1.5
7	*MC109ES	Environmental Science	3	0	0	0
		Induction Programme				
		Total Credits	13	3	10	18

I YEAR II SEMESTER

S. No.	Course Code	Course Title	L	T	P	Credits
1	MA201BS	Mathematics - II	3	1	0	4
2	CH202BS	Chemistry	3	1	0	4
3	ME203ES	Engineering Mechanics	3	1	0	4
4	ME205ES	Engineering Workshop	1	0	3	2.5
5	EN205HS	English	2	0	0	2
6	CH206BS	Engineering Chemistry Lab	0	0	3	1.5
7	EN207HS	English Language and Communication Skills Lab	0	0	2	1
		Total Credits	12	3	8	19.0

II YEAR I SEMESTER

S. No.	Course Code	Course Title	L	T	P	Credits
1	CE301PC	Surveying and Geomatics	3	0	0	3
2	CE302PC	Engineering Geology	2	0	0	2
3	CE303PC	Strength of Materials - I	3	1	0	4
4	MA304BS	Probability and Statistics	3	1	0	4
5	CE305PC	Fluid Mechanics	3	1	0	4
6	CE306PC	Surveying Lab	0	0	3	1.5
7	CE307PC	Strength of Materials Lab	0	0	3	1.5
8	CE308PC	Engineering Geology Lab	0	0	2	1
9	*MC309	Constitution of India	3	0	0	0
		Total Credits	17	3	8	21

II YEAR II SEMESTER

S. No.	Course Code	Course Title	L	T	P	Credits
1	EE401ES	Basic Electrical and Electronics Engineering	3	0	0	3

2	CE402ES	Basic Mechanical Engineering for Civil Engineers	2	0	0	2
3	CE403PC	Building Materials, Construction and Planning	3	0	0	3
4	CE404PC	Strength of Materials - II	3	0	0	3
5	CE405PC	Hydraulics and Hydraulic Machinery	3	0	0	3
6	CE406PC	Structural Analysis - I	3	0	0	3
7	CE407PC	Computer aided Civil Engineering Drawing	0	0	3	1.5
8	CE409PC	Hydraulics and Hydraulic Machinery Lab	0	0	3	1.5
9	EE409ES	Basic Electrical and Electronics Engineering Lab	0	0	2	1
10	*MC409	Gender Sensitization Lab	0	0	2	0
		Total Credits	17	0	10	21

III YEAR I SEMESTER

S. No.	Course Code	Course Title	L	T	P	Credits
4	CE501	Structural Analysis-II	3	0	0	3
2	CE502PC	Geotechnical Engineering	3	0	0	3
3	CE503PC	Structural Engineering –I (RCC)	3	1	0	4
4	CE504PC	Transportation Engineering	3	0	0	3
5		Professional Elective-I	3	0	0	3
6	SM505MS	Engineering Economics and Accountancy	2	0	0	2
7	CE506PC	Highway Engineering and Concrete Technology Lab	0	0	3	1.5
8	CE507PC	Geotechnical Engineering Lab	0	0	3	1.5
9	EN508HS	Advanced Communication Skills Lab	0	0	2	1
10	*MC509	Intellectual Property Rights	3	0	0	0
		Total Credits	20	1	8	22

III YEAR II SEMESTER

S. No	Course Code	Course Title	L	T	P	Credits
1	CE601PC	Hydrology & Water Resources Engineering	3	1	0	4
1	CE602PC	Environmental Engineering	3	0	0	3
2	CE603PC	Foundation Engineering	3	0	0	3
3	CE604PC	Structural Engineering –II (Steel)	3	1	0	4
5		Professional Elective –II	3	0	0	3
6		Open Elective –I	3	0	0	3
7	CE605PC	Environmental Engineering Lab	0	0	2	1
8	CE606PC	Computer Aided Design Lab	0	0	2	1
9	*MC609	Environmental Science	3	0	0	0
		Total Credits	21	2	4	22

IV YEAR I SEMESTER

S. No.	Course Code	Course Title	L	T	P	Credits
1	CE701PC	Estimation, Costing and Project Management	3	1	0	4
2		Professional Elective –III	3	0	0	3
3		Professional Elective –IV	3	0	0	3
4		Open Elective –II	3	0	0	3
5	SM702MS	Professional Practice law & Ethics	2	0	0	2

6	CE703PC	Industrial Oriented Mini Project/ Summer Internship	0	0	0	2*
7	CE704PC	Seminar	0	0	2	1
8	CE705PC	Project Stage - I	0	0	6	3
		Total Credits	14	1	12	21

IV YEAR II SEMESTER

S. No.	Course Code	Course Title	L	T	P	Credits
1		Professional Elective -V	3	0	0	3
2		Professional Elective –VI	3	0	0	3
3		Open Elective –III	3	0	0	3
4	CE801PC	Project Stage-II	0	0	14	7
		Total Credits	9	0	14	16

*MC - Environmental Science – Should be Registered by Lateral Entry Students Only.

*MC – Satisfactory/Unsatisfactory

Note: Industrial Oriented Mini Project/ Summer Internship is to be carried out during the summer vacation between 6th and 7th semesters. Students should submit report of Industrial Oriented Mini Project/ Summer Internship for evaluation.

Professional Elective – I

CE511PE	Concrete Technology
CE512PE	Theory of Elasticity
CE513PE	Rock Mechanics

Professional Elective – II

CE611PE	Prestressed Concrete
CE612PE	Elements of Earth Quake Engineering
CE613PE	Advanced Structural Analysis

Professional Elective-III

CE711PE	Remote Sensing &GIS
CE712PE	Ground Improvement Techniques
CE713PE	Advanced Structural Design

Professional Elective -IV

CE721PE	Irrigation and Hydraulic Structures
CE722PE	Pipeline Engineering
CE723PE	Ground Water Hydrology

Professional Elective –V

CE811PE	Solid Waste Management
CE812PE	Environmental Impact Assessment
CE813PE	Air pollution

Professional Elective -VI

CE821PE	Airports, Railways and Waterways
CE822PE	Urban Transportation Planning
CE823PE	Finite Element Methods for Civil Engineering

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
B.Tech. in COMPUTER SCIENCE AND ENGINEERING
COURSE STRUCTURE & SYLLABUS (R18)

Applicable From 2018-19 Admitted Batch

I YEAR I SEMESTER

S. No.	Course Code	Course Title	L	T	P	Credits
1	MA101BS	Mathematics - I	3	1	0	4
2	CH102BS	Chemistry	3	1	0	4
3	EE103ES	Basic Electrical Engineering	3	0	0	3
4	ME105ES	Engineering Workshop	1	0	3	2.5
5	EN105HS	English	2	0	0	2
6	CH106BS	Engineering Chemistry Lab	0	0	3	1.5
7	EN107HS	English Language and Communication Skills Lab	0	0	2	1
8	EE108ES	Basic Electrical Engineering Lab	0	0	2	1
		Induction Programme				
		Total Credits	12	2	10	19

I YEAR II SEMESTER

S. No.	Course Code	Course Title	L	T	P	Credits
1	MA201BS	Mathematics - II	3	1	0	4
2	AP202BS	Applied Physics	3	1	0	4
3	CS203ES	Programming for Problem Solving	3	1	0	4
4	ME204ES	Engineering Graphics	1	0	4	3
5	AP205BS	Applied Physics Lab	0	0	3	1.5
6	CS206ES	Programming for Problem Solving Lab	0	0	3	1.5
7	*MC209ES	Environmental Science	3	0	0	0
		Total Credits	13	3	10	18

II YEAR I SEMESTER

S. No.	Course Code	Course Title	L	T	P	Credits
1	CS301ES	Analog and Digital Electronics	3	0	0	3
2	CS302PC	Data Structures	3	1	0	4
3	MA303BS	Computer Oriented Statistical Methods	3	1	0	4
4	CS304PC	Computer Organization and Architecture	3	0	0	3
5	CS305PC	Object Oriented Programming using C++	2	0	0	2
6	CS306ES	Analog and Digital Electronics Lab	0	0	2	1
7	CS307PC	Data Structures Lab	0	0	3	1.5
8	CS308PC	IT Workshop Lab	0	0	3	1.5
9	CS309PC	C++ Programming Lab	0	0	2	1
10	*MC309	Gender Sensitization Lab	0	0	2	0
		Total Credits	14	2	12	21

II YEAR II SEMESTER

S. No.	Course Code	Course Title	L	T	P	Credits
1	CS401PC	Discrete Mathematics	3	0	0	3
2	SM402MS	Business Economics & Financial Analysis	3	0	0	3
3	CS403PC	Operating Systems	3	0	0	3
4	CS404PC	Database Management Systems	3	1	0	4
5	CS405PC	Java Programming	3	1	0	4
6	CS406PC	Operating Systems Lab	0	0	3	1.5
7	CS407PC	Database Management Systems Lab	0	0	3	1.5
8	CS408PC	Java Programming Lab	0	0	2	1
9	*MC409	Constitution of India	3	0	0	0
		Total Credits	18	2	8	21

III YEAR I SEMESTER

S. No.	Course Code	Course Title	L	T	P	Credits
1	CS501PC	Formal Languages & Automata Theory	3	0	0	3
2	CS502PC	Software Engineering	3	0	0	3
3	CS503PC	Computer Networks	3	0	0	3
4	CS504PC	Web Technologies	3	0	0	3
5		Professional Elective-I	3	0	0	3
6		Professional Elective -II	3	0	0	3
7	CS505PC	Software Engineering Lab	0	0	3	1.5
8	CS506PC	Computer Networks & Web Technologies Lab	0	0	3	1.5
9	EN508HS	Advanced Communication Skills Lab	0	0	2	1
10	*MC510	Intellectual Property Rights	3	0	0	0
		Total Credits	21	0	8	22

III YEAR II SEMESTER

S. No.	Course Code	Course Title	L	T	P	Credits
1	CS601PC	Machine Learning	3	1	0	4
2	CS602PC	Compiler Design	3	1	0	4
3	CS603PC	Design and Analysis of Algorithms	3	1	0	4
4		Professional Elective – III	3	0	0	3
5		Open Elective-I	3	0	0	3
6	CS604PC	Machine Learning Lab	0	0	3	1.5
7	CS605PC	Compiler Design Lab	0	0	3	1.5
8		Professional Elective-III Lab	0	0	2	1
9	*MC609	Environmental Science	3	0	0	0
		Total Credits	18	3	8	22

IV YEAR I SEMESTER

S. No.	Course Code	Course Title	L	T	P	Credits
1	CS701PC	Cryptography & Network Security	3	0	0	3
2	CS702PC	Data Mining	2	0	0	2

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
B.Tech. in INFORMATION TECHNOLOGY
COURSE STRUCTURE & SYLLABUS (R18)

Applicable From 2018-19 Admitted Batch

I YEAR I SEMESTER

S. No.	Course Code	Course Title	L	T	P	Credits
1	MA101BS	Mathematics - I	3	1	0	4
2	CH102BS	Chemistry	3	1	0	4
3	EE103ES	Basic Electrical Engineering	3	0	0	3
4	ME105ES	Engineering Workshop	1	0	3	2.5
5	EN105HS	English	2	0	0	2
6	CH106BS	Engineering Chemistry Lab	0	0	3	1.5
7	EN107HS	English Language and Communication Skills Lab	0	0	2	1
8	EE108ES	Basic Electrical Engineering Lab	0	0	2	1
		Induction Programme				
		Total Credits	12	2	10	19

I YEAR II SEMESTER

S. No.	Course Code	Course Title	L	T	P	Credits
1	MA201BS	Mathematics - II	3	1	0	4
2	AP202BS	Applied Physics	3	1	0	4
3	CS203ES	Programming for Problem Solving	3	1	0	4
4	ME204ES	Engineering Graphics	1	0	4	3
5	AP205BS	Applied Physics Lab	0	0	3	1.5
6	CS206ES	Programming for Problem Solving Lab	0	0	3	1.5
7	*MC209ES	Environmental Science	3	0	0	0
		Total Credits	13	3	10	18

II YEAR I SEMESTER

S. No.	Course Code	Course Title	L	T	P	Credits
1	CS301ES	Analog and Digital Electronics	3	0	0	3
2	CS302PC	Data Structures	3	1	0	4
3	MA303BS	Computer Oriented Statistical Methods	3	1	0	4
4	IT304PC	Computer Organization and Microprocessor	3	0	0	3
5	CS305PC	Object Oriented Programming using C++	2	0	0	2
6	CS306ES	Analog and Digital Electronics Lab	0	0	2	1
7	CS307PC	Data Structures Lab	0	0	3	1.5
8	IT308PC	IT Workshop and Microprocessor Lab	0	0	3	1.5
9	CS309PC	C++ Programming Lab	0	0	2	1
10	*MC309	Gender Sensitization Lab	0	0	2	0
		Total Credits	14	2	12	21

II YEAR II SEMESTER

S. No.	Course Code	Course Title	L	T	P	Credits
1	CS401PC	Discrete Mathematics	3	0	0	3

2	SM402MS	Business Economics & Financial Analysis	3	0	0	3
3	CS403PC	Operating Systems	3	0	0	3
4	CS404PC	Database Management Systems	3	1	0	4
5	CS405PC	Java Programming	3	1	0	4
6	CS406PC	Operating Systems Lab	0	0	3	1.5
7	CS407PC	Database Management Systems Lab	0	0	3	1.5
8	CS408PC	Java Programming Lab	0	0	2	1
9	*MC409	Constitution of India	3	0	0	0
		Total Credits	18	2	8	21

III YEAR I SEMESTER

S. No.	Course Code	Course Title	L	T	P	Credits
1	CS501PC	Formal Languages & Automata Theory	3	0	0	3
2	CS502PC	Software Engineering	3	0	0	3
3	IT503PC	Data Communication & Computer Networks	3	1	0	4
4	IT504PC	Web Programming	2	0	0	2
5		Professional Elective - I	3	0	0	3
6		Professional Elective - II	3	0	0	3
7	CS505PC	Software Engineering Lab	0	0	3	1.5
8	IT506PC	Computer Networks & <i>Web Programming Lab</i>	0	0	3	1.5
9	EN508HS	Advanced Communication Skills Lab	0	0	2	1
10	*MC510	Intellectual Property Rights	3	0	0	0
		Total Credits	20	1	8	22

III YEAR II SEMESTER

S. No.	Course Code	Course Title	L	T	P	Credits
1	IT601PC	Introduction to Embedded Systems	3	0	0	3
2	IT602PC	Principles of Compiler Construction	3	0	0	3
3	IT603PC	Algorithm Design and Analysis	3	0	0	3
4	IT604PC	Internet of Things	3	0	0	3
5		Professional Elective –III	3	0	0	3
6		Open Elective-I	3	0	0	3
7	IT605PC	Embedded Systems & Internet of Things Lab	0	0	3	1.5
8	IT606PC	Compiler Construction Lab	0	0	3	1.5
9		Professional Elective-III Lab	0	0	2	1
10	*MC609	Environmental Science	3	0	0	0
		Total Credits	21	0	8	22

IV YEAR I SEMESTER

S. No.	Course Code	Course Title	L	T	P	Credits
1	IT701PC	Information Security	3	0	0	3
2	CS702PC	Data Mining	2	0	0	2
3		Professional Elective -IV	3	0	0	3
4		Professional Elective -V	3	0	0	3
5		Open Elective-II	3	0	0	3
6	IT703PC	Information Security Lab	0	0	2	1
7	IT704PC	Industrial Oriented Mini Project/ Summer Internship	0	0	0	2*
8	IT705PC	Seminar	0	0	2	1

9	IT706PC	Project Stage - I	0	0	6	3
		Total Credits	14	0	10	21

IV YEAR II SEMESTER

S. No.	Course Code	Course Title	L	T	P	Credits
1	SM801MS	Organizational Behaviour	3	0	0	3
2		Professional Elective -VI	3	0	0	3
3		Open Elective-III	3	0	0	3
4	IT802PC	Project Stage - II	0	0	14	7
		Total Credits	9	0	14	16

***MC - Environmental Science – Should be Registered by Lateral Entry Students Only.**

***MC – Satisfactory/Unsatisfactory**

NOTE: Industrial Oriented Mini Project/ Summer Internship is to be carried out during the summer vacation between 6th and 7th semesters. Students should submit report of Industrial Oriented Mini Project/ Summer Internship for evaluation.

Professional Elective - I

IT511PE	Biometrics
CS512PE	Advanced Computer Architecture
CS513PE	Data Analytics
CS514PE	Image Processing
CS515PE	Principles of Programming Languages

Professional Elective - II

CS521PE	Computer Graphics
IT521PE	Database Security
CS522PE	Advanced Operating Systems
IT523PE	Machine Learning
IT524PE	Pattern Recognition

Professional Elective - III

IT611PE	Ethical Hacking
CS612PE	Network Programming
CS613PE	Scripting Languages
CS614PE	Mobile Application Development
CS615PE	Software Testing Methodologies

Courses in PE - III and PE - III Lab must be in 1-1 correspondence.

Professional Elective -IV

IT711PE	Web Security
IT712PE	High Performance Computing
CS713PE	Artificial Intelligence
CS714PE	Cloud Computing
CS715PE	Ad-hoc & Sensor Networks

Professional Elective -V

IT721PE	Intrusion Detection Systems
CS722PE	Real Time Systems
CS723PE	Soft Computing
IT724PE	Distributed Databases
CS725PE	Software Process & Project Management

Professional Elective -VI

IT811PE	Natural Language Processing
CS812PE	Distributed Systems
CS813PE	Neural Networks & Deep Learning
CS814PE	Human Computer Interaction
CS815PE	Cyber Forensics

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
B.Tech. in ELECTRICAL AND ELECTRONICS ENGINEERING
COURSE STRUCTURE & SYLLABUS (R18)

Applicable From 2018-19 Admitted Batch

I YEAR I SEMESTER

S. No.	Course Code	Course Title	L	T	P	Credits
1	MA101BS	Mathematics - I	3	1	0	4
2	CH102BS	Chemistry	3	1	0	4
3	EE103ES	Basic Electrical Engineering	3	0	0	3
4	ME105ES	Engineering Workshop	1	0	3	2.5
5	EN105HS	English	2	0	0	2
6	CH106BS	Engineering Chemistry Lab	0	0	3	1.5
7	EN107HS	English Language and Communication Skills Lab	0	0	2	1
8	EE108ES	Basic Electrical Engineering Lab	0	0	2	1
		Induction Programme				
		Total Credits	12	2	10	19

I YEAR II SEMESTER

S. No.	Course Code	Course Title	L	T	P	Credits
1	MA201BS	Mathematics - II	3	1	0	4
2	AP202BS	Applied Physics	3	1	0	4
3	CS203ES	Programming for Problem Solving	3	1	0	4
4	ME204ES	Engineering Graphics	1	0	4	3
5	AP205BS	Applied Physics Lab	0	0	3	1.5
6	CS206ES	Programming for Problem Solving Lab	0	0	3	1.5
7	*MC209ES	Environmental Science	3	0	0	0
		Total Credits	13	3	10	18

II YEAR I SEMESTER

S. No.	Course Code	Course Title	L	T	P	Credits
1	EE301ES	Engineering Mechanics	3	1	0	4
2	EE302PC	Electrical Circuit Analysis	3	1	0	4
3	EE303PC	Analog Electronics	3	0	0	3
4	EE304PC	Electrical Machines - I	3	1	0	4
5	EE305PC	Electromagnetic Fields	3	0	0	3
6	EE306PC	Electrical Machines Lab - I	0	0	2	1
7	EE307PC	Analog Electronics Lab	0	0	2	1
8	EE308PC	Electrical Circuits Lab	0	0	2	1
9	*MC309	Gender Sensitization Lab	0	0	2	0
		Total Credits	15	3	8	21

II YEAR II SEMESTER

S. No.	Course Code	Course Title	L	T	P	Credits
1	MA401BS	Laplace Transforms, Numerical Methods & Complex variables	3	1	0	4

2	EE402PC	Electrical Machines – II	3	1	0	4
3	EE403PC	Digital Electronics	3	0	0	3
4	EE404PC	Control Systems	3	1	0	4
5	EE405PC	Power System - I	3	0	0	3
6	EE406PC	Digital Electronics Lab	0	0	2	1
7	EE407PC	Electrical Machines Lab - II	0	0	2	1
8	EE408PC	Control Systems Lab	0	0	2	1
9	*MC409	Constitution of India	3	0	0	0
		Total Credits	18	3	6	21

III YEAR I SEMESTER

S. No.	Course Code	Course Title	L	T	P	Credits
1	EE501PE	Power Electronics	3	1	0	4
2	EE502PE	Power System-II	3	1	0	4
3	EE503PE	Measurements and Instrumentation	3	1	0	4
4		Professional Elective-I	3	0	0	3
5	SM504MS	Business Economics and Financial Analysis	3	0	0	3
6	EE505PC	Power System Simulation Lab	0	0	2	1
7	EE506PC	Power Electronics Lab	0	0	2	1
8	EE507PC	Measurements and Instrumentation Lab	0	0	2	1
9	EN508HS	Advanced Communication Skills Lab	0	0	2	1
10	*MC510	Intellectual Property Rights	3	0	0	0
		Total Credits	18	3	8	22

III YEAR II SEMESTER

S. No	Course Code	Course Title	L	T	P	Credits
1		Open Elective-I	3	0	0	3
2		Professional Elective-II	3	0	0	3
3	EE601PC	Signals and Systems	2	1	0	3
4	EE602PC	Microprocessors & Microcontrollers	3	0	0	3
5	EE603PC	Power System Protection	3	1	0	4
6	EE604PC	Power System Operation and Control	3	0	0	3
7	EE605PC	Power System Lab	0	0	2	1
8	EE606PC	Microprocessors & Microcontrollers Lab	0	0	2	1
9	EE607PC	Signals and Systems Lab	0	0	2	1
10	*MC609	Environmental Science	3	0	0	0
		Total Credits	20	2	6	22

IV YEAR I SEMESTER

S. No.	Course Code	Course Title	L	T	P	Credits
1		Open Elective-II	3	0	0	3
2		Professional Elective-III	3	0	0	3
3		Professional Elective-IV	3	0	0	3
4	SM701MS	Fundamentals of Management for Engineers	3	0	0	3
5	EE701PC	Electrical & Electronics Design Lab	1	0	4	3
6	EE702PC	Industrial Oriented Mini Project/ Summer Internship	0	0	4	2*
7	EE703PC	Seminar	0	0	2	1

	EE704PC	Project Stage - I	0	0	6	3
		Total Credits	13	0	16	21

IV YEAR II SEMESTER

S. No.	Course Code	Course Title	L	T	P	Credits
1		Open Elective-III	3	0	0	3
2		Professional Elective-V	3	0	0	3
3		Professional Elective-VI	3	0	0	3
4	EE801PC	Project Stage - II	0	0	14	7
		Total Credits	9	0	14	16

***MC - Environmental Science – Should be Registered by Lateral Entry Students Only.**

***MC – Satisfactory/Unsatisfactory**

NOTE: Industrial Oriented Mini Project/ Summer Internship is to be carried out during the summer vacation between 6th and 7th semesters. Students should submit report of Industrial Oriented Mini Project/ Summer Internship for evaluation.

Professional Elective - I

EE511PE	Computer Architecture
EE512PE	High Voltage Engineering
EE513PE	Electrical Machine Design

Professional Elective - II

EE611PE	Optimization Techniques
EE612PE	Power Semiconductor Drives
EE613PE	Wind and Solar Energy systems

Professional Elective - III

EE711PE	Digital Control systems
EE712PE	Digital Signal Processing
EE713PE	Electrical and Hybrid Vehicles

Professional Elective - IV

EE721PE	HVDC Transmission
EE722PE	Power System Reliability
EE723PE	Industrial Electrical Systems

Professional Elective - V

EE811PE	Power Quality & FACTS
EE812PE	Control Systems Design
EE813PE	AI Techniques in Electrical Engineering

Professional Elective - VI

EE821PE	Smart Grid Technologies
EE822PE	Electrical Distribution Systems
EE823PE	Advanced Control of Electric Drives

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
B.Tech. in AERONAUTICAL ENGINEERING
COURSE STRUCTURE & SYLLABUS (R18)

Applicable From 2018-19 Admitted Batch

I YEAR I SEMESTER

S. No.	Course Code	Course Title	L	T	P	Credits
1	MA101BS	Mathematics - I	3	1	0	4
2	PH102BS	Engineering Physics	3	1	0	4
3	CS103ES	Programming for Problem Solving	3	1	0	4
4	ME104ES	Engineering Graphics	1	0	4	3
5	PH105BS	Engineering Physics Lab	0	0	3	1.5
6	CS106ES	Programming for Problem Solving Lab	0	0	3	1.5
7	*MC109ES	Environmental Science	3	0	0	0
		Induction Programme				
		Total Credits	13	3	10	18

I YEAR II SEMESTER

S. No.	Course Code	Course Title	L	T	P	Credits
1	MA201BS	Mathematics - II	3	1	0	4
2	CH202BS	Chemistry	3	1	0	4
3	ME203ES	Engineering Mechanics	3	1	0	4
4	ME205ES	Engineering Workshop	1	0	3	2.5
5	EN205HS	English	2	0	0	2
6	CH206BS	Engineering Chemistry Lab	0	0	3	1.5
7	EN207HS	English Language and Communication Skills Lab	0	0	2	1
		Total Credits	12	3	8	19.0

II YEAR I SEMESTER

S. No.	Course Code	Course Title	L	T	P	Credits
1	MA301BS	Probability and Statistics & Complex Variables	3	1	0	4
2	EE300ES	Basic Electrical and Electronics Engineering	3	0	0	3
3	AE303PC	Theory of Structures	3	0	0	3
4	AE304PC	Fluid Mechanics and Hydraulics	3	0	0	3
5	AE305PC	Aerodynamics - I	3	1	0	4
6	AE306PC	Mechanics of Solids Lab	0	0	2	1
7	AE307PC	Fluid Mechanics and Hydraulics Lab	0	0	4	2
8	EE309PC	Basic Electrical and Electronics Engineering Lab	0	0	2	1
9	*MC309	Constitution of India	3	0	0	0
		Total Credits	18	2	8	21

II YEAR II SEMESTER

S. No.	Course Code	Course Title	L	T	P	Credits
1	AE401ES	Probability Distributions and Numerical Methods	3	1	0	4
2	AE402PC	Low Speed Aerodynamics	3	0	0	3
3	AE403PC	Aircraft Materials and Production	3	1	0	4
4	AE404PC	Analysis of Aircraft Structures	3	1	0	4
5	AE405PC	Aero-Thermodynamics	3	0	0	3

6	AE406ES	Aerodynamics Lab	0	0	2	1
7	AE407PC	Aerospace Structures Lab	0	0	2	1
8	AE408PC	Aircraft Materials and Production Lab	0	0	2	1
10	*MC409	Gender Sensitization Lab	0	0	2	0
		Total Credits	15	3	8	21

III YEAR I SEMESTER

S. No.	Course Code	Course Title	L	T	P	Credits
1	AE501PC	Aircraft Propulsion	3	1	0	4
2	AE502PC	High Speed Aerodynamics	3	0	0	3
3	AE503PC	Finite Element Methods	3	0	0	3
4	SM504MS	Business Economics and Financial Analysis	3	0	0	3
5	AE505PC	Aircraft Systems and Controls	3	0	0	3
6	AE506PC	Aircraft Performance and Stability	3	0	0	3
7	AE507PC	Computer Aided Aircraft Engineering Drawing	0	0	2	1
8	AE508PC	Flight Control Lab	0	0	2	1
9	AE509PC	Aircraft Propulsion Lab	0	0	2	1
10	*MC510	Intellectual Property Rights	3	0	0	0
		Total Credits	21	1	6	22

III YEAR II SEMESTER

S. No	Course Code	Course Title	L	T	P	Credits
1	AE601PC	Space Propulsion	3	0	0	3
2	AE602PC	Computational Aerodynamics	3	1	0	4
3	AE603PC	Helicopter Aerodynamics	3	0	0	3
4		Professional Elective - I	3	0	0	3
5		Open Elective - I	3	0	0	3
6	AE604PC	Aircraft Design	3	0	0	3
7	AE605PC	Aerospace Propulsion Lab	0	0	2	1
8	AE606PC	CFD Lab	0	0	2	1
9	EN608HS	Advanced Communication Skills Lab	0	0	2	1
10	*MC609	Environmental Science	3	0	0	0
		Total Credits	21	1	6	22

IV YEAR I SEMESTER

S. No.	Course Code	Course Title	L	T	P	Credits
1	AE701PC	Vibration and Aero-elasticity	3	0	0	3
2		Professional Elective – II	3	0	0	3
3		Professional Elective – III	3	0	0	3
4		Professional Elective - IV	3	0	0	3
5		Open Elective - II	3	0	0	3
6	AE702PC	Industrial Oriented Mini Project/ Summer Internship	0	0	0	2*
7	AE703PC	Seminar	0	0	2	1
8	AE704PC	Project Stage - I	0	0	6	3
		Total Credits	15	0	8	21

IV YEAR II SEMESTER

S. No.	Course Code	Course Title	L	T	P	Credits
1		Professional Elective – V	3	0	0	3
2		Professional Elective - VI	3	0	0	3
3		Open Elective - III	3	0	0	3
4	AE801PC	Project Stage - II	0	0	14	7
		Total Credits	9	0	14	16

Professional Elective – I

AE611PE	Advanced Solid Mechanics
AE612PE	Design and Analysis of Composite Structures
AE613PE	Unmanned Air Vehicles

Professional Elective – II

AE711PE	Space Mechanics
AE712PE	Rockets and Missiles
AE713PE	Wind Tunnel Technique

Professional Elective – III

AE721PE	Experimental Aerodynamics
AE722PE	Hypersonic Aerodynamics
AE723PE	Advanced Computational Aerodynamics

Professional Elective – IV

AE731PE	Industrial Aerodynamics
ME732PE	Turbo Machinery
AE733PE	Theory of Combustion

Professional Elective – V

AE811PE	Heat Transfer
AE812PE	Cryogenics
AE813PE	Aero Engine Design

Professional Elective – VI

AE821PE	Precision Engineering
AE822PE	Practical Non-Destructive Testing
AE823PE	CAD/CIM

***MC - Environmental Science – Should be Registered by Lateral Entry Students Only.**

***MC – Satisfactory/Unsatisfactory**

Note: Industrial Oriented Mini Project/ Summer Internship is to be carried out during the summer vacation between 6th and 7th semesters. Students should submit report of Industrial Oriented Mini Project/ Summer Internship for evaluation.

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD**B.TECH. CIVIL ENGINEERING****COURSE STRUCTURE & SYLLABUS (2016-17)****II YEAR I SEMESTER**

S. No	Course Code	Course Title	L	T	P	Credits
1	MA301BS	Mathematics - IV	4	1	0	4
2	CE302ES	Strength of Materials - I	4	1	0	4
3	CE303ES	Fluid Mechanics - I	4	1	0	4
4	CE304ES	Building Material, Construction and Planning	3	0	0	3
5	CE305ES	Surveying	3	0	0	3
6	CE306ES	Strength of Material Lab	0	0	3	2
7	CE307ES	Computer Aided Design – I Lab	0	0	3	2
8	CE308ES	Surveying lab - I	0	0	3	2
9	*MC300HS	Gender Sensitization Lab	0	0	3	0
		Total Credits	18	3	12	24

II YEAR II SEMESTER

S. No	Course Code	Course Title	L	T	P	Credits
1	CE401ES	Strength of Material - II	4	1	0	4
2	CE402ES	Fluid Mechanics - II	4	1	0	4
3	CE403ES	Structural Analysis	4	1	0	4
4	CV404ES	Engineering Geology	3	0	0	3
5	SM405MS	Business Economic and Financial Analysis	3	0	0	3
6	CE406ES	Fluid Mechanics Lab	0	0	3	2
7	CE408ES	Surveying - II Lab	0	0	3	2
8	CV407ES	Engineering Geology Lab	0	0	3	2
9	*MC400ES	Environmental Science and Technology	3	0	0	0
		Total Credits	21	3	9	24

*Satisfactory/ Unsatisfactory

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD**B.TECH. COMPUTER SCIENCE AND ENGINEERING****COURSE STRUCTURE & SYLLABUS (2016-17)****II YEAR I SEMESTER**

S. No	Course Code	Course Title	L	T	P	Credits
1	MA301BS	Mathematics – IV	4	1	0	4
2	CS302ES	Data Structures through C++	4	0	0	4
3	CS303ES	Mathematical Foundations of Computer Science	4	0	0	4
4	CS304ES	Digital Logic Design	3	0	0	3
5	CS305ES	Object Oriented Programming through Java	3	0	0	3
6	CS306ES	Data Structures through C++ Lab	0	0	3	2
7	CS307ES	IT Workshop	0	0	3	2
8	CS308ES	Object Oriented Programming through Java Lab	0	0	3	2
9	* MC300ES	Environmental Science and Technology	3	0	0	0
		Total Credits	21	1	9	24

II YEAR II SEMESTER

S. No	Course Code	Course Title	L	T	P	Credits
1	CS401BS	Computer Organization	4	0	0	4
2	CS402ES	Database Management Systems	4	0	0	4
3	CS403ES	Operating Systems	4	0	0	4
4	CS404ES	Formal Languages and Automata Theory	3	0	0	3
5	SM405MS	Business Economics and Financial Analysis	3	0	0	3
6	CS406ES	Computer Organization Lab	0	0	3	2
7	CS407ES	Database Management Systems Lab	0	0	3	2
8	CS408ES	Operating Systems Lab	0	0	3	2
9	* MC400HS	Gender Sensitization Lab	0	0	3	0
		Total Credits	18	0	12	24

* Satisfactory/Unsatisfactory

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD**B.TECH. ELECTRONICS AND COMMUNICATION ENGINEERING****COURSE STRUCTURE & SYLLABUS (2016-17)****II YEAR I SEMESTER**

S. No.	Course Code	Course Title	L	T	P	Credits
1	MA301BS	Mathematics – IV	4	1	0	4
2	EC302ES	Analog Electronics	4	1	0	4
3	EC303ES	Electrical Technology	4	1	0	4
4	EC304ES	Signals and Stochastic Process	3	1	0	3
5	EC305ES	Network Analysis	3	1	0	3
6	EC306ES	Electronic Devices and Circuits Lab	0	0	3	2
7	EC307ES	Basic Simulation Lab	0	0	3	2
8	EC308ES	Basic Electrical Engineering Lab	0	0	3	2
9	*MC300ES	Environmental Science and Technology	3	0	0	0
		Total Credits	21	5	9	24

II YEAR II SEMESTER

S. No.	Course Code	Course Title	L	T	P	Credits
1	EC401ES	Switching Theory and Logic Design	3	1	0	3
2	EC402ES	Pulse and Digital Circuits	4	0	0	4
3	EE404ES	Control Systems	4	1	0	4
4	EC405ES	Analog Communications	4	0	0	4
5	SM405MS	Business Economics and Financial Analysis	3	0	0	3
6	EC406ES	Analog Communications Lab	0	0	3	2
7	EC407ES	Pulse and Digital Circuits Lab	0	0	3	2
8	EC408ES	Analog Electronics Lab	0	0	3	2
9	*MC400HS	Gender Sensitization Lab	0	0	3	0
		Total Credits	18	2	12	24

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD**B.TECH. MECHANICAL ENGINEERING****COURSE STRUCTURE & SYLLABUS (2016-17)****II YEAR I SEMESTER**

S. No.	Course Code	Course Title	L	T	P	Credits
1	MA301BS	Mathematics - IV	4	1	0	4
2	ME304ES	Thermodynamics	4	1	0	4
3	ME302ES	Kinematics of Machinery	4	1	0	4
4	ME305ES	Metallurgy and Material Science	3	0	0	3
5	ME303ES	Mechanics of Solids	3	1	0	3
6	ME306ES	Fuels and Lubricants Lab	0	0	3	2
7	ME307ES	Mechanics of Solids Lab	0	0	3	2
8	ME308ES	Metallurgy and Material Science Lab	0	0	3	2
9	*MC300HS	Gender Sensitization Lab	0	0	3	0
		Total Credits	18	4	12	24

II YEAR II SEMESTER

S. No.	Course Code	Course Title	L	T	P	Credits
1	ME403ES	Dynamics of Machinery	4	1	0	4
2	ME401ES	Fluid Mechanics and Hydraulic Machines	4	1	0	4
3	ME404ES	Machine Drawing	2	0	4	4
4	ME405ES	Manufacturing Process	3	0	0	3
5	SM405MS	Business Economic and Financial Analysis	3	0	0	3
6	ME406ES	Kinematics and Dynamics Lab	0	0	3	2
7	ME407ES	Fluid Mechanics and Hydraulic Machines Lab	0	0	3	2
8	ME408ES	Manufacturing Process Lab	0	0	3	2
9	*MC400ES	Environmental Science and Technology	3	0	0	0
		Total Credits	18	2	15	24

*Satisfactory/Unsatisfactory

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

**B.TECH. CIVIL ENGINEERING
III YEAR COURSE STRUCTURE & SYLLABUS (R16)**

Admitted From 2016-17 Admitted Batch

III YEAR I SEMESTER

S. No	Course Code	Course Title	L	T	P	Credits
1	CE501PC	Concrete Technology	4	0	0	4
2	CE502PC	Design of Reinforced Concrete Structures	4	1	0	4
3	CE503PC	Water Resources Engineering	4	0	0	4
4	SM504MS	Fundamentals of Management	3	0	0	3
5		Open Elective –I	3	0	0	3
6	CE505PC	Concrete Technology Lab	0	0	3	2
7	CE506PC	Geographical Information Systems Lab	0	0	3	2
8	CE507PC	Hydraulics and Hydraulic Machinery Lab	0	0	3	2
9	*MC500HS	Professional Ethics	3	0	0	0
		Total Credits	21	1	9	24

III YEAR II SEMESTER

S. No	Course Code	Course Title	L	T	P	Credits
1	CE601PC	Design of Steel Structures	4	1	0	4
2	CE602PC	Environmental Engineering	4	0	0	4
3	CE603PC	Soil Mechanics	4	0	0	4
4		Open Elective-II	3	0	0	3
5		Professional Elective-I	3	0	0	3
6	CE604PC	Soil Mechanics Lab	0	0	3	2
7	CE605PC	Computer Aided Drafting - II Lab	0	0	3	2
8	EN606HS	Advanced English Communication Skills Lab	0	0	3	2
		Total Credits	18	1	9	24

***During Sumer Vacation between III and IV Years: Industry Oriented Mini Project**

Professional Elective - I

CE611PE	Air Pollution and Control.
CE612PE	Advanced Structural Analysis.
CE613PE	Ground Water Development and Management.
CE614PE	Earth and Rock fill Dams and Slope Stability.

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD**B.TECH. COMPUTER SCIENCE AND ENGINEERING
III YEAR COURSE STRUCTURE & SYLLABUS (R16)****Applicable From 2016-17 Admitted Batch****III YEAR I SEMESTER**

S. No	Course Code	Course Title	L	T	P	Credits
1	CS501PC	Design and Analysis of Algorithms	4	0	0	4
2	CS502PC	Data Communication and Computer Networks	4	0	0	4
3	CS503PC	Software Engineering	4	0	0	4
4	SM504MS	Fundamentals of Management	3	0	0	3
5		Open Elective –I	3	0	0	3
6	CS505PC	Design and Analysis of Algorithms Lab	0	0	3	2
7	CS506PC	Computer Networks Lab	0	0	3	2
8	CS507PC	Software Engineering Lab	0	0	3	2
9	*MC500HS	Professional Ethics	3	0	0	0
		Total Credits	21	0	9	24

III YEAR II SEMESTER

S. No	Course Code	Course Title	L	T	P	Credits
1	CS601PC	Compiler Design	4	0	0	4
2	CS602PC	Web Technologies	4	0	0	4
3	CS603PC	Cryptography and Network Security	4	0	0	4
4		Open Elective-II	3	0	0	3
5		Professional Elective-I	3	0	0	3
6	CS604PC	Cryptography and Network Security Lab	0	0	3	2
7	CS605PC	Web Technologies Lab	0	0	3	2
8	EN606HS	Advanced English Communication Skills Lab	0	0	3	2
		Total Credits	18	0	9	24

During Summer Vacation between III and IV Years: Industry Oriented Mini Project

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD**B.TECH. ELECTRONICS AND COMMUNICATION ENGINEERING
III YEAR COURSE STRUCTURE & SYLLABUS (R16)****Applicable From 2016-17 Admitted Batch****III YEAR I SEMESTER**

S. No	Course Code	Course Title	L	T	P	Credits
1	EC501PC	Electromagnetic Theory and Transmission Lines	4	1	0	4
2	EC502PC	Linear and Digital IC Applications	4	0	0	4
3	EC503PC	Digital Communications	4	1	0	4
4	SM504MS	Fundamentals of Management	3	0	0	3
5		Open Elective – I	3	0	0	3
6	EC505PC	Linear IC Applications Lab	0	0	3	2
7	EC506PC	Digital IC Applications Lab	0	0	3	2
8	EC507PC	Digital Communications Lab	0	0	3	2
9	*MC500HS	Professional Ethics	3	0	0	0
		Total Credits	21	2	9	24

III YEAR II SEMESTER

S. No	Course Code	Course Title	L	T	P	Credits
1		Open Elective-II	3	0	0	3
2		Professional Elective-I	3	0	0	3
3	EC601PC	Antennas and Wave Propagation	4	0	0	4
4	EC602PC	Microprocessors and Microcontrollers	4	0	0	4
5	EC603PC	Digital Signal Processing	4	0	0	4
6	EC604PC	Digital Signal Processing Lab	0	0	3	2
7	EC605PC	Microprocessors and Microcontrollers Lab	0	0	3	2
8	EN606HS	Advanced English Communication Skills Lab	0	0	3	2
		Total Credits	18	0	9	24

During Summer Vacation between III and IV Years: Industry Oriented Mini Project

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD**B.TECH. MECHANICAL ENGINEERING
III YEAR COURSE STRUCTURE & SYLLABUS (R16)****Applicable From 2016-17 Admitted Batch****III YEAR I SEMESTER**

S. No.	Course Code	Course Title	L	T	P	Credits
1	ME501PC	Design of Machine Members - I	4	1	0	4
2	ME502PC	Thermal Engineering-I	4	1	0	4
3	ME503PC	Metrology and Machine Tools	4	1	0	4
4	SM504MS	Fundamentals of Management	3	0	0	3
5		Open Elective – I	3	0	0	3
6	ME505PC	Thermal Engineering Lab	0	0	3	2
7	ME506PC	Machine Tools Lab	0	0	3	2
8	ME507PC	Engineering Metrology Lab	0	0	3	2
9	*MC500HS	Professional Ethics	3	0	0	0
		Total Credits	21	3	9	24

III YEAR II SEMESTER

S. No.	Course Code	Course Title	L	T	P	Credits
1	ME601PC	Thermal Engineering –II	4	1	0	4
2	ME602PC	Design of Machine Members-II	4	1	0	4
3	ME603PC	Heat Transfer	4	1	0	4
4		Open Elective - II	3	0	0	3
5		Professional Elective - I	3	0	0	3
6	ME604PC	Heat Transfer Lab	0	0	3	2
7	ME605PC	CADD and MATLAB	0	0	3	2
8	EN606HS	Advanced English Communication Skills Lab	0	0	3	2
		Total Credits	18	3	9	24

During Summer Vacation between III and IV Years: Industry Oriented Mini Project

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD**B.TECH. CIVIL ENGINEERING
IV YEAR COURSE STRUCTURE & SYLLABUS (R16)****Admitted From 2016-17 Admitted Batch****IV YEAR I SEMESTER**

S. No	Course Code	Course Title	L	T	P	Credits
1	CE701PC	Transportation Engineering	4	0	0	4
2	CE702PC	Estimation Quantity Surveying and Valuation	4	1	0	4
3		Professional Elective - II	3	0	0	3
4		Professional Elective - III	3	0	0	3
5		Professional Elective -IV	3	0	0	3
6	CE703PC	Transportation Engineering Lab	0	0	3	2
7	CE704PC	Environmental Engineering Lab	0	0	3	2
8	CE705PC	Industry Oriented Mini Project	0	0	3	2
9	CE706PC	Seminar	0	0	2	1
		Total Credits	17	1	11	24

IV YEAR II SEMESTER

S. No	Course Code	Course Title	L	T	P	Credits
1		Open Elective - III	3	0	0	3
2		Professional Elective -V	3	0	0	3
3		Professional Elective -VI	3	0	0	3
4	CE801PC	Major Project	0	0	30	15
		Total Credits	9	0	30	24

Professional Elective - I

CE611PE	Air Pollution and Control.
CE612PE	Advanced Structural Analysis.
CE613PE	Ground Water Development and Management.
CE614PE	Earth and Rock fill Dams and Slope Stability.

Professional Elective – II

CE721PE	Stochastic Hydrology.
CE722PE	Construction Technology and Management.
CE723PE	Foundation Engineering.
CE724PE	Rehabilitation and Retrofitting of Structures.

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

**B. TECH. AERONAUTICAL ENGINEERING
II, III, IV YEARS COURSE STRUCTURE & SYLLABUS (R16)**

Applicable From 2016-17 Admitted Batch

II YEAR I SEMESTER

S. No.	Course Code	Course Title	L	T	P	Credits
1	MA301BS	Mathematics – IV	4	1	0	4
2	ME301ES	Fluid Mechanics and Hydraulic Machines	4	1	0	4
3	AE302ES	Aircraft Production Technology	3	0	0	3
4	ME303ES	Mechanics of Solids	3	0	0	3
5	ME304ES	Thermodynamics	4	1	0	4
6	AE305ES	Aircraft Production Technology Lab	0	0	3	2
7	ME307ES	Mechanics of Solids Lab	0	0	3	2
8	ME310ES	Fluid Mechanics and Hydraulic Machines Lab	0	0	3	2
9	*MC300HS	Gender Sensitization Lab	0	0	3	0
		Total Credits	18	3	12	24

II YEAR II SEMESTER

S. No.	Course Code	Course Title	L	T	P	Credits
1	AE401ES	Low Speed Aerodynamics	4	1	0	4
2	AE402ES	Fundamentals of Structural Analysis	4	1	0	4
3	AE403ES	Aircraft Performance	4	1	0	4
4	AE404ES	Control Theory	3	1	0	3
5	SM405MS	Business Economics and Financial Analysis	3	0	0	3
6	AE406ES	Electrical and Electronics Engineering Lab	0	0	3	2
7	AE407ES	Numerical Simulation with MATLAB	0	0	3	2
8	AE408ES	Aircraft Engineering Drawing with CAD	0	0	3	2
9	*MC400ES	Environmental Science and Technology	3	0	0	0
		Total Credits	21	4	9	24

III YEAR I SEMESTER

S. No.	Course Code	Course Title	L	T	P	Credits
1	AE501PC	High Speed Aerodynamics	4	1	0	4
2	AE502PC	Air Breathing Propulsion	4	0	0	4
3	AE503PC	Aircraft Structural Analysis	4	1	0	4
4	SM504MS	Fundamentals of Management	3	0	0	3
5		Open Elective – I	3	0	0	3
6	AE505PC	Aerodynamics and Propulsion Lab	0	0	3	2
7	AE506PC	Aerospace Structures Lab	0	0	3	2
8	AE507PC	Aero Modeling Lab	0	0	3	2
9	*MC500HS	Professional Ethics	3	0	0	0
		Total Credits	21	2	9	24

III YEAR II SEMESTER

S. No.	Course Code	Course Title	L	T	P	Credits
1	AE601PC	Aircraft Systems	4	1	0	4
2	AE602PC	Aircraft Stability and Control	4	1	0	4
3	AE603PC	Rocket and Spacecraft Propulsion	4	0	0	4
4		Professional Elective-I	3	0	0	3
5		Open Elective-II	3	0	0	3
6	AE604PC	Computational Structures Lab	0	0	3	2
7	AE605PC	Flight Dynamics and Control Lab	0	0	3	2
8	EN606HS	Advanced English Communication Skills Lab	0	0	3	2
		Total Credits	18	2	9	24

During Summer Vacation between III and IV Years: Industry Oriented Mini Project

IV YEAR I SEMESTER

S. No.	Course Code	Course Title	L	T	P	Credits
1	AE701PC	Flight Vehicle Design	4	1	0	4
2	AE702PC	Mechanical Vibration and Structural Dynamics	4	1	0	4
3		Professional Elective - II	3	0	0	3
4		Professional Elective - III	3	0	0	3
5		Professional Elective - IV	3	0	0	3
6	AE703PC	Flight Vehicle Design and Instrumentation Lab	0	0	3	2
7	AE704PC	Computational Fluid Dynamics Lab	0	0	3	2
8	AE705PC	Industry Oriented Mini Project	0	0	3	2
9	AE706PC	Seminar	0	0	2	1
		Total Credits	17	2	11	24

IV YEAR II SEMESTER

S. No.	Course Code	Course Title	L	T	P	Credits
1		Open Elective – III	3	0	0	3
2		Professional Elective - V	3	0	0	3
3		Professional Elective - VI	3	0	0	3
4	AE801PC	Major Project	0	0	30	15
		Total Credits	9	0	30	24

Professional Elective - I

ME611PE	Finite Element Methods
AE612PE	Experimental Aerodynamics
AE613PE	Mechanisms and Mechanical Design
AE614PE	Unmanned Air Vehicle (UAV) Systems

Professional Elective - II

AE721PE	CAD/CAM
AE722PE	Aircraft Maintenance Engineering
AE723PE	Material Science and Composites
ME724PE	Operations Research

Professional Elective - III

AE731PE	Aircraft Structural Design
ME732PE	Computational Fluid Dynamics
AE733PE	Airport Planning and Management
AE734PE	System Modeling and Simulation

Professional Elective - IV

AE741PE	Advanced Manufacturing Techniques
AE742PE	Air Traffic Control

AE743PE	Space Mechanics
AE744PE	Mechanics of Composite Structures

Professional Elective - V

AE851PE	Helicopter Engineering
AE852PE	Fabrication and Machining of Composite Structures
AE853PE	Airlines Planning, Scheduling and Operations
AE854PE	Hypersonic Aerodynamics

Professional Elective - VI

AE861PE	Aeroelasticity
AE862PE	Wind Engineering and Industrial Aerodynamics
AE863PE	Heat Transfer
AE864PE	Ground Vehicle Aerodynamics

***Open Elective** subjects' syllabus is provided in a separate document.

***Open Elective** – Students should take Open Electives from the List of Open Electives Offered by Other Departments/Branches Only.

Ex: - A Student of Mechanical Engineering can take Open Electives from all other departments/branches except Open Electives offered by Mechanical Engineering Dept.

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD**LIST OF OPEN ELECTIVES OFFERED BY VARIOUS DEPARTMENTS FOR B.TECH. III AND IV YEARS**

S. No.	Name of the Department Offering Open Electives	Open Elective – I (Semester – V)	Open Elective – II (Semester – VI)
1	Aeronautical Engg.	AE511OE: Introduction to Space Technology	AE621OE: Introduction to Aerospace Engineering
2	Automobile Engg.	CE511OE: Disaster Management MT512OE: Intellectual Property Rights	MT621OE: Data Structures MT622OE: Artificial Neural Networks
3	Biomedical Engg.	BM511OE: Reliability Engineering	BM621OE: Medical Electronics
4	Civil Engg.	CE511OE: Disaster Management.	CE621OE: Remote Sensing and GIS CE622OE: Geo-Informatics CE623OE: Intellectual Property Rights
5	Civil and Environmental Engg.	CE511OE: Disaster Management	CN621OE: Environmental Impact Assessment CE623OE: Intellectual Property Rights
6	Computer Science and Engg. / Information Technology	CS511OE: Operating Systems CS512OE: Database Management Systems	CS621OE: Java Programming CS622OE: Software Testing Methodologies CS623OE: Cyber Security
7	Electronics and Communication Engg. / Electronics and Telematics Engg.	EC511OE: Principles of Electronic Communications	EC621OE: Principles of Computer Communications and Networks
8	Electronics and Computer Engg.	EM511OE: Scripting Languages	EM621OE: Soft Computing Techniques
9	Electrical and Electronics Engg.	EE511OE: Non-Conventional Power Generation EE512OE: Electrical Engineering Materials EE513OE: Nanotechnology	EE621OE: Design Estimation and Costing of Electrical Systems EE622OE: Energy Storage Systems EE623OE: Introduction to Mechatronics
10	Electronics and Instrumentation Engg.	EI511OE: Electronic Measurements and Instrumentation	EI621OE: Industrial Electronics
11	Mechanical Engg.	ME511OE: Optimization Techniques ME512OE: Computer Graphics ME513OE: Introduction to Mechatronics ME514OE: Fundamentals of Mechanical Engineering	ME621OE: World Class Manufacturing ME622OE: Fundamentals of Robotics ME623OE: Fabrication Processes
12	Mechanical Engg. (Material Science and Nanotechnology)	NT511OE: Fabrication Processes NT512OE: Non destructive	NT621OE: Introduction to Material Handling NT622OE: Non-Conventional

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD**B.TECH. ELECTRICAL AND ELECTRONICS ENGINEERING
II, III, IV YEARS COURSE STRUCTURE & SYLLABUS (R16)****Applicable From 2016-17 Admitted Batch****II YEAR I SEMESTER**

S. No.	Course Code	Course Title	L	T	P	Credits
1	MA301BS	Mathamatics – IV	4	1	0	4
2	EE302ES	Electromagnetic Fields	4	1	0	4
3	EE303ES	Electrical Machines-I	4	1	0	4
4	EE304ES	Network Theory	3	0	0	3
5	EE305ES	Electronic Circuits	3	0	0	3
6	EE306ES	Electrical Machines Lab - I	0	0	3	2
7	EC306ES	Electronic Devices & Circuits Lab	0	0	3	2
8	EE307ES	Networks Lab	0	0	3	2
9	*MC300ES	Environmental Science and Technology	3	0	0	0
		Total Credits	21	3	9	24

II YEAR II SEMESTER

S. No.	Course Code	Course Title	L	T	P	Credits
1	EC401ES	Switching Theory & Logic Design	3	1	0	3
2	EE402ES	Power Systems - I	4	1	0	4
3	EE403ES	Electrical Machines – II	4	1	0	4
4	EE404ES	Control Systems	4	1	0	4
5	SM405MS	Business Economics and Financial Analysis	3	0	0	3
6	EE406ES	Control Systems Lab	0	0	3	2
7	EE407ES	Electrical Machines Lab - II	0	0	3	2
8	EE408ES	Electronic Circuits Lab	0	0	3	2
9	*MC400HS	Gender Sensitization Lab	0	0	3	0
		Total Credits	18	4	12	24

III YEAR I SEMESTER

S. No.	Course Code	Course Title	L	T	P	Credits
1	EE501PC	Electrical Measurements & Instrumentation	4	1	0	4
2	EE502PC	Power Systems - II	4	1	0	4
3	EI503PC	Microprocessors and Microcontrollers	4	1	0	4
4	SM504MS	Fundamentals of Management	3	0	0	3
5		Open Elective - I	3	0	0	3
6	EE505PC	Electrical Measurements & Instrumentation Lab	0	0	3	2
7	EE506PC	Basic Electrical simulation Lab	0	0	3	2
8	EI507PC	Microprocessors and Microcontrollers Lab	0	0	3	2
9	*MC500HS	Professional Ethics	3	0	0	0
		Total Credits	21	3	9	24

III YEAR II SEMESTER

S. No.	Course Code	Course Title	L	T	P	Credits
1	EE601PC	Power Systems Analysis	4	1	0	4
2	EE602PC	Power Electronics	4	1	0	4
3	EE603PC	Switch Gear and Protection	4	1	0	4
4		Open Elective - II	3	0	0	3
5		Professional Elective - I	3	0	0	3
6	EE604PC	Power Systems Lab	0	0	3	2
7	EE605PC	Power Electronics Lab	0	0	3	2
8	EN606HS	Advanced English Communication Skills Lab	0	0	3	2
		Total Credits	18	3	9	24

During Summer Vacation between III and IV Years: Industry Oriented Mini Project

IV YEAR I SEMESTER

S. No.	Course Code	Course Title	L	T	P	Credits
1	EE701PC	Power Semiconductor Drives	4	1	0	4
2	EE702PC	Power System Operation and control	4	1	0	4
3		Professional Elective - II	3	0	0	3
4		Professional Elective - III	3	0	0	3
5		Professional Elective - IV	3	0	0	3
6	EE703PC	Electrical Systems Simulation Lab	0	0	3	2

7	EE704PC	Electrical Workshop	0	0	3	2
8	EE705PC	Industry Oriented Mini Project	0	0	3	2
9	EE706PC	Seminar	0	0	2	1
		Total Credits	17	2	11	24

IV YEAR II SEMESTER

S. No.	Course Code	Course Title	L	T	P	Credits
1		Open Elective - III	3	0	0	3
2		Professional Elective-V	3	0	0	3
3		Professional Elective-VI	3	0	0	3
4	EE801PC	Major Project	0	0	30	15
		Total Credits	9	0	30	24

Professional Elective - I (PE - I):

EM611PE	Computer Organization
EE612PE	Linear Systems Analysis
EE613PE	Linear and Digital IC Applications
EE614PE	Electrical and Electronics Instrumentation

Professional Elective - II (PE - II):

EE721PE	Digital Signal Processing
EE722PE	HVDC Transmission
ET721PE	Switch Mode Power Supplies
EE724PE	Reliability Engineering

Professional Elective - III (PE - III):

EE731PE	Digital Control Systems
EE732PE	Power Quality
EE733PE	Modern Power Electronics
EE734PE	Optimization Techniques

Professional Elective - IV (PE-IV):

EE741PE	Programmable Logic Controllers
EE742PE	EHV AC Transmission Systems
EE743PE	Flexible A.C. Transmission Systems
EE744PE	Special Machines

Professional Elective - V (PE-V):

EE851PE	Artificial Neural Networks and Fuzzy Systems
EE852PE	Electrical Distribution Systems

EE853PE	Wind, Solar and Hybrid Energy Systems
EE854PE	High Voltage Engineering

Professional Elective - VI (PE-VI):

EE861PE	VLSI Design
EE862PE	Smart Electric Grid
EE863PE	Utilization of Electric Power
EE864PE	Electric and Hybrid Vehicles

***Open Elective** subjects' syllabus is provided in a separate document.

***Open Elective** – Students should take Open Electives from the List of Open Electives Offered by Other Departments/Branches Only.

Ex: - A Student of Mechanical Engineering can take Open Electives from all other departments/branches except Open Electives offered by Mechanical Engineering Dept.

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
LIST OF OPEN ELECTIVES OFFERED BY VARIOUS DEPARTMENTS FOR
B.TECH. III AND IV YEARS

S. No.	Name of the Department Offering Open Electives	Open Elective – I (Semester – V)	Open Elective – II (Semester – VI)
1	Aeronautical Engg.	AE511OE: Introduction to Space Technology	AE621OE: Introduction to Aerospace Engineering
2	Automobile Engg.	CE511OE: Disaster Management MT512OE: Intellectual Property Rights	MT621OE: Data Structures MT622OE: Artificial Neural Networks
3	Biomedical Engg.	BM511OE: Reliability Engineering	BM621OE: Medical Electronics
4	Civil Engg.	CE511OE: Disaster Management.	CE621OE: Remote Sensing and GIS CE622OE: Geo-Informatics CE623OE: Intellectual Property Rights
5	Civil and Environmental Engg.	CE511OE: Disaster Management	CN621OE: Environmental Impact Assessment CE623OE: Intellectual Property Rights
6	Computer Science and Engg. / Information Technology	CS511OE: Operating Systems CS512OE: Database Management Systems	CS621OE: Java Programming CS622OE: Software Testing Methodologies CS623OE: Cyber Security
7	Electronics and Communication Engg. / Electronics and Telematics Engg.	EC511OE: Principles of Electronic Communications	EC621OE: Principles of Computer Communications and Networks
8	Electronics and Computer Engg.	EM511OE: Scripting Languages	EM621OE: Soft Computing Techniques
9	Electrical and Electronics Engg.	EE511OE: Non-Conventional Power Generation EE512OE: Electrical Engineering Materials EE513OE: Nanotechnology	EE621OE: Design Estimation and Costing of Electrical Systems EE622OE: Energy Storage Systems EE623OE: Introduction to Mechatronics
10	Electronics and Instrumentation Engg.	EI511OE: Electronic Measurements and Instrumentation	EI621OE: Industrial Electronics
11	Mechanical Engg.	ME511OE: Optimization Techniques ME512OE: Computer Graphics	ME621OE: World Class Manufacturing ME622OE: Fundamentals of Robotics

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD**B.TECH I YEAR COURSE STRUCTURE AND SYLLABUS (R16)**

(Common for EEE, ECE, CSE, EIE, BME, IT, ETE, ECM, ICE)

Applicable From 2017-18 Admitted Batch**I YEAR I SEMESTER**

S. No	Course Code	Course Title	L	T	P	Credits
1	MA101BS	Mathematics-I	3	1	0	3
2	CH102BS	Engineering Chemistry	4	0	0	4
3	PH103BS	Engineering Physics-I	3	0	0	3
4	EN104HS	Professional Communication in English	3	0	0	3
5	ME105ES	Engineering Mechanics	3	0	0	3
6	EE106ES	Basic Electrical and Electronics Engineering	4	0	0	4
7	EN107HS	English Language Communication Skills Lab	0	0	3	2
8	ME108ES	Engineering Workshop	0	0	3	2
9	*EA109MC	NSS	0	0	0	0
		Total Credits	20	1	6	24

I YEAR II SEMESTER

S. No	Course Code	Course Title	L	T	P	Credits
1	PH201BS	Engineering Physics-II	3	0	0	3
2	MA202BS	Mathematics-II	4	1	0	4
3	MA203BS	Mathematics-III	4	1	0	4
4	CS204ES	Computer Programming in C	3	0	0	3
5	ME205ES	Engineering Graphics	2	0	4	4
6	CH206BS	Engineering Chemistry Lab	0	0	3	2
7	PH207BS	Engineering Physics Lab	0	0	3	2
8	CS208ES	Computer Programming in C Lab	0	0	3	2
9	*EA209MC	NCC/NSO	0	0	0	0
		Total Credits	16	2	13	24

***Mandatory Course – Satisfactory/Unsatisfactory.**

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD**B.TECH. INFORMATION TECHNOLOGY
II, III, IV YEARS COURSE STRUCTURE & SYLLABUS (R16)**

Applicable From 2016-17 Admitted Batch

II YEAR I SEMESTER

S. No	Course Code	Course Title	L	T	P	Credits
1	MA301BS	Mathematics – IV	4	1	0	4
2	CS302ES	Data Structures through C++	4	0	0	4
3	CS303ES	Mathematical Foundations of Computer Science	4	0	0	4
4	CS304ES	Digital Logic Design	3	0	0	3
5	CS305ES	Object Oriented Programming through Java	3	0	0	3
6	CS306ES	Data Structures through C++ Lab	0	0	3	2
7	CS307ES	IT Workshop	0	0	3	2
8	CS308ES	Object Oriented Programming through Java Lab	0	0	3	2
9	* MC300ES	Environmental Science and Technology	3	0	0	0
		Total Credits	21	1	9	24

II YEAR II SEMESTER

S. No	Course Code	Course Title	L	T	P	Credits
1	CS401BS	Computer Organization	4	0	0	4
2	CS402ES	Database Management Systems	4	0	0	4
3	CS403ES	Operating Systems	4	0	0	4
4	CS404ES	Formal Languages and Automata Theory	3	0	0	3
5	SM405MS	Business Economics and Financial Analysis	3	0	0	3
6	CS406ES	Computer Organization Lab	0	0	3	2
7	CS407ES	Database Management Systems Lab	0	0	3	2
8	CS408ES	Operating Systems Lab	0	0	3	2
9	* MC400HS	Gender Sensitization Lab	0	0	3	0
		Total Credits	18	0	12	24

III YEAR I SEMESTER

S. No	Course Code	Course Title	L	T	P	Credits
1	CS501PC	Design and Analysis of Algorithms	4	0	0	4
2	CS502PC	Data Communication and Computer Networks	4	0	0	4
3	CS503PC	Software Engineering	4	0	0	4
4	SM504MS	Fundamentals of Management	3	0	0	3
5		Open Elective –I	3	0	0	3
6	CS505PC	Design and Analysis of Algorithms Lab	0	0	3	2
7	CS506PC	Computer Networks Lab	0	0	3	2
8	CS507PC	Software Engineering Lab	0	0	3	2
9	*MC500HS	Professional Ethics	3	0	0	0
		Total Credits	21	0	9	24

III YEAR II SEMESTER

S. No	Course Code	Course Title	L	T	P	Credits
1	CS601PC	Compiler Design	4	0	0	4
2	CS602PC	Web Technologies	4	0	0	4
3	CS603PC	Cryptography and Network Security	4	0	0	4
4		Open Elective-II	3	0	0	3
5		Professional Elective-I	3	0	0	3
6	CS604PC	Cryptography and Network Security Lab	0	0	3	2
7	CS605PC	Web Technologies Lab	0	0	3	2
8	EN606HS	Advanced English Communication Skills Lab	0	0	3	2
		Total Credits	18	0	9	24

During Summer Vacation between III and IV Years: Industry Oriented Mini Project

IV YEAR I SEMESTER

S. No	Course Code	Course Title	L	T	P	Credits
1	CS701PC	Data Mining	4	0	0	4
2	IT702PC	Android Application Development	4	0	0	4
3		Professional Elective – II	3	0	0	3
4		Professional Elective – III	3	0	0	3
5		Professional Elective – IV	3	0	0	3
6	IT703PC	Android Application Development Lab	0	0	3	2
7		PE-II Lab #	0	0	3	2
	CS751PC	Python Programming Lab				
	CS753PC	Web Scripting Languages Lab				

	IT752PC CS754PC	Ethical Hacking Lab Internet of Things Lab				
8	IT705PC	Industry Oriented Mini Project	0	0	3	2
9	IT706PC	Seminar	0	0	2	1
		Total Credits	17	0	11	24

Courses in PE - II and PE - II Lab must be in 1-1 correspondence.

IV YEAR II SEMESTER

S. No	Course Code	Course Title	L	T	P	Credits
1		Open Elective – III	3	0	0	3
2		Professional Elective – V	3	0	0	3
3		Professional Elective – VI	3	0	0	3
4	IT801PC	Major Project	0	0	30	15
		Total Credits	9	0	30	24

Professional Elective – I

CS611PE	Mobile Computing
IT612PE	Object Oriented Analysis and Design
IT613PE	Computer Forensics
CS614PE	Information Security Management (Security Analyst - I)
CS615PE	Introduction to Analytics (Associate Analytics - I)

Professional Elective - II

CS721PE	Python Programming
CS723PE	Web Scripting Languages
IT722PE	Ethical Hacking
CS724PE	Internet of Things

Professional Elective - III

IT731PE	Web and Database Security
IT732PE	Embedded Systems
IT733PE	Artificial Intelligence
CS734PE	Software Process and Project Management

Professional Elective - IV

CS743PE	Blockchain Technology
CS742PE	Cloud Computing
CS744PE	Social Network Analysis
IT741PE	Information Retrieval Systems

Professional Elective -V

IT851PE	Steganography and Watermarking
CS852PE	Real-Time Systems
CS853PE	Data Analytics
CS854PE	Modern Software Engineering

Professional Elective –VI

IT861PE	Intrusion Detection System
IT862PE	ADHOC and Sensor Networks
CS864PE	Neural Networks and Deep Learning
IT863PE	Human Computer Interaction

***Open Elective** subjects' syllabus is provided in a separate document.

***Open Elective** – Students should take Open Electives from the List of Open Electives Offered by Other Departments/Branches Only.

Ex: - A Student of Mechanical Engineering can take Open Electives from all other departments/branches except Open Electives offered by Mechanical Engineering Dept.

II YEAR II SEMESTER

Code	Subject	L	T/P/D	C
A40312	Production Technology	4	-	4
A40309	Kinematics of Machinery	4	-	4
A40313	Thermal Engineering -I	4	-	4
A40112	Mechanics of Fluids and Hydraulic Machines	4	-	4
A40310	Machine Drawing	-	6	4
A40006	Mathematics-II	4	-	4
A40382	Production Technology Lab	-	3	2
A40188	Mechanics of Fluids & Hydraulic Machines Lab	-	3	2
	Total	20	12	28

III YEAR I SEMESTER

Code	Subject	L	T/P/D	C
A50010	Managerial Economics and Financial Analysis	4	-	4
A50318	Engineering Metrology	4	-	4
A50317	Dynamics of Machinery	4	-	4
A50321	Machine Tools	4	-	4
A50316	Design of Machine Members - I	4	-	4
A50326	Thermal Engineering -II	4	-	4
A50384	Machine Tools & Metrology Lab	-	3	2
A50383	Thermal Engineering Lab	-	3	2
	Total	24	6	28

III YEAR II SEMESTER

Code	Subject	L	T/P/D	C
A62405	Automobile Engineering	4	-	4
A60330	Finite Element Methods	4	-	4
A60334	Refrigeration and Air Conditioning	4	-	4
A60329	Design of Machine Members - II	4	-	4
A60331	Heat Transfer	4	-	4
	Open Elective	4	-	4
A60117	Disaster Management			
A60017	Intellectual Property Rights			
A60018	Human Values and Professional Ethics			
A60387	Heat Transfer Lab	-	3	2
A60086	Advanced Communication Skills Lab	-	3	2
	Total	24	6	28

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD.**B. TECH. MECHANICAL ENGINEERING****I YEAR**

Code	Subject	L	T/P/D	C
A10001	English	2	-	4
A10002	Mathematics – I	3	1	6
A10302	Engineering Mechanics	3	-	6
A10004	Engineering Physics	3	-	6
A10005	Engineering Chemistry	3	-	6
A10501	Computer Programming	3	-	6
A10301	Engineering Drawing	2	3	6
A10581	Computer Programming Lab.	-	3	4
A10081	Engineering Physics & Engineering Chemistry Lab.	-	3	4
A10083	English Language Communication Skills Lab.	-	3	4
A10082	IT Workshop / Engineering Workshop	-	3	4
	Total	19	16	56

II YEAR I SEMESTER

Code	Subject	L	T/P/D	C
A30009	Environmental Studies	4	-	4
A30008	Probability and Statistics	4	-	4
A30203	Electrical and Electronics Engineering	4	-	4
A30104	Mechanics of Solids	4	-	4
A30306	Thermodynamics	4	-	4
A31803	Metallurgy and Materials Science	4	-	4
A30281	Electrical and Electronics Engineering Lab	-	3	2
A30085	Metallurgy & Mechanics of Solids Lab	-	3	2
	Total	24	6	28

II YEAR II SEMESTER

Code	Subject	L	T/P/D	C
A40215	Principles of Electrical Engineering	4	-	4
A40412	Electronic Circuit Analysis	4	-	4
A40415	Pulse and Digital Circuits	4	-	4
A40009	Environmental Studies	4	—	4
A40411	Electromagnetic Theory and Transmission Lines	4	-	4
A40410	Digital Design using Verilog HDL	4	-	4
A40288	Electrical Technology Lab.	-	3	2
A40484	Electronic Circuits and Pulse Circuits Lab.	-	3	2
	Total	24	6	28

III YEAR I SEMESTER

Code	Subject	L	T/P/D	C
A50217	Control Systems Engineering	4	-	4
A50516	Computer Organization and Operating Systems	4	-	4
A50418	Antennas and Wave Propagation	4	-	4
A50422	Electronic Measurements and Instrumentation	4	-	4
A50408	Analog Communications	4	-	4
A50425	Linear and Digital IC Applications	4	-	4
A50482	Analog Communications Lab.	-	3	2
A50488	IC Applications and HDL Simulation Lab.	-	3	2
	Total	24	6	28

III YEAR II SEMESTER

Code	Subject	L	T/P/D	C
A60010	Managerial Economics and Financial Analysis	4	-	4
A60018	Open Elective: Human Values and Professional Ethics	4	-	4
A60117	Disaster Management			
A60017	Intellectual Property Rights			
A60420	Digital Communications	4	-	4
A60432	VLSI Design	4	-	4
A60430	Microprocessors and Microcontrollers	4	-	4
A60421	Digital Signal Processing	4	-	4
A60494	Microprocessors and Microcontrollers Lab.	-	3	2
A60493	Digital Signal Processing Lab.	-	3	2
	Total	24	6	28

II YEAR II SEMESTER

Code	Subject	L	T/P/D	C
A40506	Computer Organization	4	-	4
A40507	Database Management Systems	4	-	4
A40503	Java Programming	4	-	4
A40009	Environmental studies	4	-	4
A40509	Formal Languages and Automata Theory	4	-	4
A40508	Design and Analysis of Algorithms	4	-	4
A40585	Java Programming Lab	-	3	2
A40584	Database Management Systems Lab	-	3	2
	Total	24	6	28

III YEAR I SEMESTER

Code	Subject	L	T/P/D	C
A50511	Principles of Programming Languages	4	-	4
	OPEN ELECTIVE	4	-	4
A50018	Human Values and Professional Ethics			
A50017	Intellectual Property Rights			
A50117	Disaster Management			
A50518	Software Engineering	4	-	4
A50514	Compiler Design	4	-	4
A50510	Operating Systems	4	-	4
A50515	Computer Networks	4	-	4
A50589	Operating Systems Lab	-	3	2
A50587	Compiler Design Lab	-	3	2
	Total	24	6	28

III YEAR II SEMESTER

Code	Subject	L	T/P/D	C
A60521	Distributed Systems	4	-	4
A60522	Information Security	4	-	4
A60524	Object Oriented Analysis and Design	4	-	4
A60525	Software Testing Methodologies	4	-	4
A60010	Managerial Economics and Financial Analysis	4	-	4
A60512	Web Technologies	4	-	4
A60591	Case Tools and Web Technologies Lab	-	3	2
A60086	Advanced Communication Skills Lab	-	3	2
	Total	24	6	28

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD.**B. TECH. COMPUTER SCIENCE AND ENGINEERING****I YEAR**

Code	Subject	L	T/P/D	C
A10001	English	2	-	4
A10002	Mathematics – I	3	1	6
A10003	Mathematical Methods	3	-	6
A10004	Engineering Physics	3	-	6
A10005	Engineering Chemistry	3	-	6
A10501	Computer Programming	3	-	6
A10301	Engineering Drawing	2	3	6
A10581	Computer Programming Lab.	-		4
A10081	Engineering Physics / Engineering Chemistry Lab.	-	3	4
A10083	English Language Communication Skills Lab.	-	3	4
A10082	IT Workshop / Engineering Workshop	-	3	4
	Total	19	16	56

II YEAR I SEMESTER

Code	Subject	L	T/P/D	C
A30008	Probability and Statistics	4	-	4
A30504	Mathematical Foundations of Computer Science	4	-	4
A30502	Data Structures	4	-	4
A30401	Digital Logic Design	4	-	4
A30404	Electronic Devices and Circuits	4	-	4
A30202	Basic Electrical Engineering	4	-	4
A30282	Electrical and Electronics Lab	-	3	2
A30582	Data Structures Lab	-	3	2
	Total	24	6	28

II YEAR II SEMESTER

Code	Subject	L	T/P/D	C
A40008	Probability & Statistics	4	-	4
A40114	Strength of Materials - II	4	-	4
A40111	Hydraulics & Hydraulic Machinery	4	-	4
A40009	Environmental Studies	4	-	4
A40115	Structural Analysis -I	4	-	4
A40109	Building Materials, Construction & Planning	4	-	4
A40186	Computer Aided Drafting of Buildings	-	3	2
A40190	Surveying Lab- II	-	3	2
	Total	24	6	28

III YEAR I SEMESTER

Code	Subject	L	T/P/D	C
A50116	Concrete Technology	4	-	4
A50121	Reinforced Concrete Structures Design and Drawing	4	-	4
A50118	Engineering Geology	4	-	4
A50120	Geotechnical Engineering	4	-	4
A50122	Water Resources Engineering-I	4	-	4
	Open Elective	4	-	4
A50117	Disaster Management			
A50017	Intellectual Property Rights			
A50018	Human Values and Professional Ethics			
A50181	Fluid Mechanics & Hydraulic Machinery Lab	-	3	2
A50191	Engineering Geology Lab	-	3	2
	Total	24	6	28

III YEAR II SEMESTER

Code	Subject	L	T/P/D	C
A60130	Steel Structures Design and Drawing	3	2	4
A60119	Environmental Engineering	4		4
A60132	Transportation Engineering -I	4		4
A60126	Foundation Engineering	4		4
A60131	Structural Analysis -II	4		4
	Elective -I	4	-	4
A60123	Elements of Earthquake Engineering			
A60127	Ground Improvement Techniques			
A60128	Ground Water Hydrology			
A60124	Environmental Impact Assessment			
A60129	Principles of Entrepreneurship			
A60194	Geotechnical Engineering Lab	-	3	2
A60086	Advanced Communication Skills Lab	-	3	2
	Total	23	8	28

IV YEAR I SEMESTER

Code	Subject	L	T/P/D	C
A70140	Remote Sensing & GIS	4	-	4
A70143	Transportation Engineering -II	4	-	4
A70138	Estimating & Costing	4	-	4
A70133	Water Resources Engineering-II	4	-	4
	Elective-II	4	-	4
A70330	Finite Element Methods			
A70134	Advanced Foundation Engineering			
A70145	Watershed Management			
A70136	Air Pollution and Control			
	Elective-III	4	-	4
A70135	Advanced Structural Design			
A70137	Earth and Rock fill Dams and Slope Stability			
A70144	Water Resources Systems Analysis			
A70139	Industrial Waste Water Treatment			
A70195	Concrete & Highway Materials Lab	-	3	2
A70192	Environmental Engineering Lab	-	3	2
	Total	24	6	28

IV YEAR II SEMESTER

Code	Subject	L	T/P/D	C
	Elective-IV	4	-	4
A80151	Rehabilitation and Retrofitting of Structures			
A80148	Geo-Environmental Engineering			
A80147	Design and Drawing of Irrigation Structures			
A80141	Solid Waste Management			
A80150	Prestressed Concrete Structures	4	-	4
A80146	Construction Management	4	-	4
A80087	Industry Oriented Mini project	-	-	2
A80089	Seminar	-	6	2
A80088	Project Work	-	15	10
A80090	Comprehensive viva	-	-	2
	Total	12	21	28

Note: All End Examinations (Theory and Practical) are of three hours duration.

T-Tutorial L - Theory P - Practical D-Drawing C - Credits

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD.**B. TECH. CIVIL ENGINEERING****I YEAR**

Code	Subject	L	T/P/D	C
A10001	English	2	-	4
A10002	Mathematics – I	3	1	6
A10302	Engineering Mechanics	3	-	6
A10004	Engineering Physics	3	-	6
A10005	Engineering Chemistry	3	-	6
A10501	Computer Programming	3	-	6
A10301	Engineering Drawing	2	3	6
A10581	Computer Programming Lab.	-	3	4
A10081	Engineering Physics & Engineering Chemistry Lab.	-	3	4
A10083	English Language Communication Skills Lab.	-	3	4
A10082	IT Workshop / Engineering Workshop	-	3	4
	Total	19	16	56

II YEAR I SEMESTER

Code	Subject	L	T/P/D	C
A30006	Mathematics – II	4	-	4
A30203	Electrical & Electronics Engineering	4	-	4
A30107	Strength of Materials –I	4	-	4
A30108	Surveying	4	-	4
A30101	Fluid Mechanics	4	-	4
A30010	Managerial Economics and Financial Analysis	4	-	4
A30185	Surveying Lab- I	-	3	2
A30183	Strength of Materials Lab	-	3	2
	Total	24	6	28