



**NALLA NARASIMHA REDDY EDUCATION SOCIETY'S GROUP OF INSTITUTIONS
(UGC AUTONOMOUS INSTITUTION)**

Chowdariguda(V), Korremula 'X' Road, Ghatkesar(M), Medchal-Malkajiri(D), Hyderabad. – 500088, T.S

B.Tech. in MECHANICAL ENGINEERING

Course Structure & Syllabus (R21)

Applicable From 2021-22 Admitted Batch

I YEAR

I SEMESTER

S. No.	Course Code	Course Title	L	T	P	Credits
1	21MA101BS	Mathematics - I	3	1	0	4
2	21PH102BS	Engineering Physics	3	1	0	4
3	21CS103ES	Programming for Problem Solving	3	1	0	4
4	21ME104ES	Engineering Graphics	1	0	4	3
5	21PH105BS	Engineering Physics Lab	0	0	3	1.5
6	21CS106ES	Programming for Problem Solving Lab	0	0	3	1.5
7	21*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	21MA201BS	Mathematics - II	3	1	0	4
2	21CH202BS	Chemistry	3	1	0	4
3	21ME203ES	Engineering Mechanics	3	1	0	4
4	21ME205ES	Engineering Workshop	1	0	3	2.5
5	21EN205HS	English	2	0	0	2
6	21CH206BS	Engineering Chemistry Lab	0	0	3	1.5
7	21EN207HS	English Language and Communication Skills Lab	0	0	2	1
		Total Credits	12	3	8	19

II YEAR**I SEMESTER**

S. No.	Course Code	Course Title	L	T	P	Credits
1	21MA301BS	Probability and Statistics & Complex Variables	3	1	0	4
2	21ME302PC	Mechanics of Solids	3	1	0	4
3	21ME303PC	Material Science and Metallurgy	3	0	0	3
4	21ME304PC	Production Technology	3	0	0	3
5	21ME305PC	Thermodynamics	3	1	0	4
6	21ME306PC	Production Technology Lab	0	0	2	1
7	21ME307PC	Machine Drawing Practice	0	0	2	1
8	21ME308PC	Material Science and Mechanics of Solids Lab	0	0	2	1
9	21MC309	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	21EE401ES	Basic Electrical and Electronics Engineering	3	0	0	3
2	21ME402PC	Kinematics of Machinery	3	1	0	4
3	21ME403PC	Thermal Engineering – I	3	1	0	4
4	21ME404PC	Fluid Mechanics and Hydraulic Machines	3	1	0	4
5	21ME405PC	Instrumentation and Control Systems	3	0	0	3
6	21EE409ES	Basic Electrical and Electronics Engineering Lab	0	0	2	1
7	21ME407PC	Fluid Mechanics and Hydraulic Machines Lab	0	0	2	1
8	21ME408PC	Instrumentation and Control Systems Lab	0	0	2	1
9	21MC409	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	21ME501PC	Dynamics of Machinery	3	1	0	4
2	21ME502PC	Design of Machine Members-I	3	0	0	3
3	21ME503PC	Metrology & Machine Tools	3	0	0	3
4	21SM504MS	Business Economics & Financial Analysis	3	0	0	3
5	21ME505PC	Thermal Engineering-II	3	0	0	3
6	21ME506PC	Operations Research	3	0	0	3
7	21ME507PC	Thermal Engineering Lab	0	0	2	1
8	21ME508PC	Metrology & Machine Tools Lab	0	0	2	1
9	21ME509PC	Kinematics & Dynamics Lab	0	0	2	1
10	21* 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	21ME601PC	Design of Machine Members-II	3	0	0	3
2	21ME602PC	Heat Transfer	3	1	0	4
3	21ME603PC	CAD & CAM	3	0	0	3
4		Professional Elective - I	3	0	0	3
5		Open Elective - I	3	0	0	3
6	21ME604PC	Finite Element Methods	3	0	0	3
7	21ME605PC	Heat Transfer Lab	0	0	2	1
8	21ME606PC	CAD & CAM Lab	0	0	2	1
9	21EN608HS	Advanced Communication Skills lab	0	0	2	1
10	21MC609	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	21ME701PC	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	21ME702PC	Industrial Oriented Mini Project/ Summer Internship	0	0	0	2
7	21ME703PC	Seminar	0	0	2	1
8	21ME704PC	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	21ME801PC	Project Stage - II	0	0	14	7
		Total Credits	9	0	14	16

Professional Elective – I

21ME611PE	Unconventional Machining Processes
21ME612PE	Machine Tool Design
21ME613PE	Production Planning & Control

Professional Elective – II

21ME711PE	Additive Manufacturing
21ME712PE	Automation in Manufacturing
21ME713PE	MEMS

Professional Elective – III

21ME721PE	Power Plant Engineering
21ME722PE	Automobile Engineering
21ME723PE	Renewable Energy Sources

Professional Elective – IV

21ME731PE	Computational Fluid Dynamics
21ME732PE	Turbo Machinery
21ME733PE	Fluid Power Systems

Professional Elective – V

21ME811PE	Industrial Robotics
21ME812PE	Mechanical Vibrations
21MM813PE	Composite Materials

Professional Elective – VI

21ME821PE	Industrial Management
21ME822PE	Production and Operations Management
21ME823PE	Tribology