

GODAVARI INSTITUTE OF ENGINEERING & TECHNOLOGY
((AUTONOMOUS))

Approved by AICTE, Accredited by NAAC 'A+' Grade, Recognized under 2(f) and 12(b) of UGC, Permanently Affiliated to JNTUK, Kakinada
DEPARTMENT OF MECHANICAL ENGINEERING

4 Years B.Tech. (Mechanical Engineering) Course Structure: (2021-22)

GRBT-20 COURSE STRUCTURE

DEPARTMENT OF MECHANICAL ENGINEERING



Godavari Institute of Engineering & Technology

Approved By AICTE NAAC 'A+' Grade Recognized by UGC, U/Sec.2(f)&12(B) Permanent
Affiliation by JNTUK, GIET Campus, Chaitanya Knowledge city, NH-16, Rajahmundry, East Godavari,
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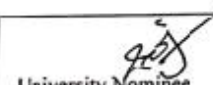
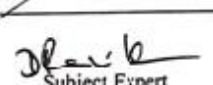
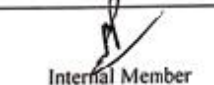
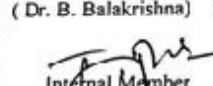
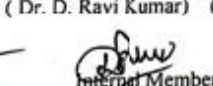
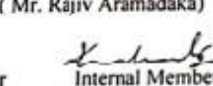
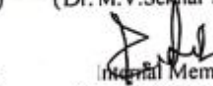
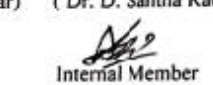
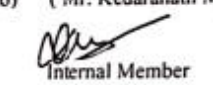
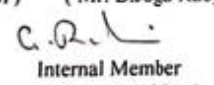
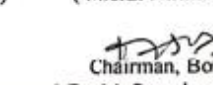


GRBT- 20 COURSE STRUCTURE

Mechanical Engineering

I B. Tech. I Semester

S. No	Category	Course Code	Subject Title	Hours per Week			Credits	Internal	External	Total
				L	T	P				
1	BSC	201HB101	Mathematics-I	3	0	0	3	30	70	100
2	HSMC	201HB102	Communicative English-I	3	0	0	3	30	70	100
3	BSC	201HB103b	Engineering Chemistry	3	0	0	3	30	70	100
4	ESC	201EE104	Basic Electrical and Electronics Engineering	3	0	0	3	30	70	100
5	ESC	201ME105	Engineering Graphics	1	0	4	3	30	70	100
6	BSC	201HB111b	Engineering Chemistry Laboratory	0	0	3	1.5	50	50	100
7	ESC	201EE112	Basic Electrical and Electronics Engineering Laboratory	0	0	3	1.5	50	50	100
8	ESC	201ME113d	Basic Engineering Workshop	0	0	3	1.5	50	50	100
			Total	13	0	13	19.5	300	500	800
	BSC =7.5	ESC=9	HSMC=3							

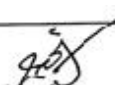
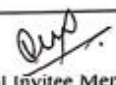
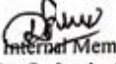
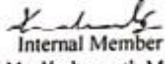
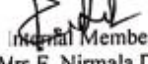
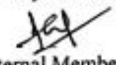
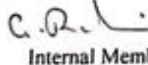
 University Nominee (Dr. B. Balakrishna)	 Subject Expert (Dr. D. Ravi Kumar)	 Industrial Expert (Mr. Rajiv Aramadaka)	 Internal Member (Dr. P.M.M.S. Sarma)	 Special Invitee Member (Dr. M.V. Sekhar Baba)
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 Internal Member (Mr. M. Balakrishna)	 Internal Member (Mr. A. Babji)	 Internal Member (Mr. D. Suman)	 Internal Member (Dr. G Ramakrishna)	 Chairman, BOS (Dr. M. Sreenivasa Rao)

GRBT- 20 COURSE STRUCTURE

Mechanical Engineering

I B.Tech. II Semester

S. No	Category	Course Code	Subject Title	Periods per Week			Credits	Internal	External	Total
				L	T	P				
1	BSC	201HB201	Mathematics-II	3	0	0	3	30	70	100
2	BSC	201HB202b	Engineering Physics	3	0	0	3	30	70	100
3	ESC	201ME203a	Engineering Mechanics	3	0	0	3	30	70	100
4	ESC	201CS204a	Fundamentals of Computer Programming	3	0	0	3	30	70	100
5	ESC	201ME205	Material Science and Metallurgy	3	0	0	3	50	50	100
6	BSC	201HB211b	Engineering Physics Laboratory	0	0	3	1.5	50	50	100
7	HSMC	201HB212	Communicative English Laboratory	0	0	3	1.5	50	50	100
8	ESC	201CS213a	Fundamentals of Computer Programming Laboratory	0	0	3	1.5	50	50	100
9	MC	201HB296	Environmental Studies	2	0	0	0	100*	—	—
			Total	17	0	9	19.5	320	480	800
	BSC=7.5	ESC=10.5	HSMC=1.5							

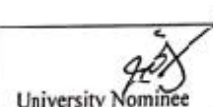
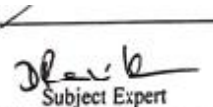
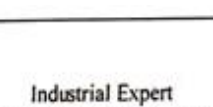
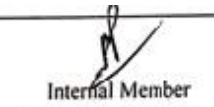
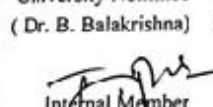
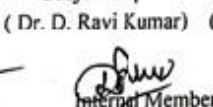
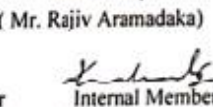
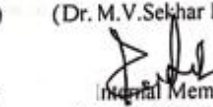
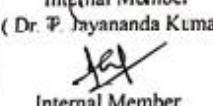
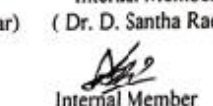
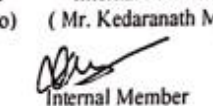
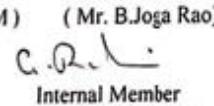
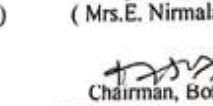
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GRBT- 20 COURSE STRUCTURE

Mechanical Engineering

II B.Tech. III Semester

S. No	Category	Course Code	Subject Title	Hours per Week			Credits	Internal	External	Total
				L	T	P				
1	BSC	201HB301	Mathematics-III	3	0	0	3	30	70	100
2	PCC	201ME302	Mechanics of Solids	3	0	0	3	30	70	100
3	PCC	201ME303	Production Technology	3	0	0	3	30	70	100
4	PCC	201ME304	Thermodynamics	3	0	0	3	30	70	100
5	PCC	201ME305	Fluid Mechanics & Hydraulic Machinery	3	0	0	3	30	70	100
6	PCC (LAB)	201ME311	Fluid Mechanics & Hydraulic Machinery Lab	0	0	3	1.5	50	50	100
7	PCC (LAB)	201ME312	Mechanics of Solids & Metallurgy lab	0	0	3	1.5	50	50	100
8	PCC (LAB)	201ME313	Computer Aided Design and Modelling Lab	0	0	3	1.5	50	50	100
9	SOC	201CS381	Programming with Python	0	1	2	2	----	50	50
10	MC	201CE391	Constitution of India	2	0	0	0	30	70*	100
Total				17	1	11	21.5	330	620	950
BSC =3		PCC=16.5	SOC=2							

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 Internal Member (Mr. M. Balakrishna)	 Internal Member (Mr. A. Babji)	 Internal Member (Mr. D. Suman)	 Internal Member (Dr. G. Ramakrishna)	 Chairman, BoS (Dr. M. Sreenivasa Rao)

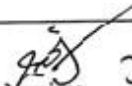
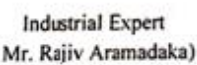
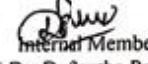
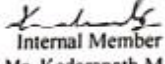
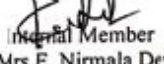
GRBT- 20 COURSE STRUCTURE

Mechanical Engineering

II B. Tech. IV Semester

S. No	Category	Course Code	Subject Title	Periods per Week			Credits	Internal	External	Total
				L	T	P				
1	BSC	201HB401	Probability and Statistics	3	0	0	3	30	70	100
2	PCC	201ME402	Kinematics of Machinery	3	0	0	3	30	70	100
3	PCC	201ME403	Thermal Engineering	3	0	0	3	30	70	100
4	HSS	201ME404	Industrial Engineering and Management	3	0	0	3	30	70	100
5	PCC (LAB)	201ME411	Numerical Modelling for Mechanical Engineers	2	0	2	3	50	50	100
6	PCC (LAB)	201ME412	Production Technology Lab	0	0	3	1.5	50	50	100
7	PCC (LAB)	201ME413	Thermal Engineering Lab.	0	0	3	1.5	50	50	100
8	PCC (LAB)	201ME414	Computer Aided Machine Drawing	0	0	3	1.5	50	50	100
9	SOC	201HB481	English for Career	0	1	2	2	----	50	50
				14	1	13	21.5	320	530	850
Honors/Minor courses(The hours distribution can be 3-0-2 or 3-1-0 also)				4	0	0	4			
BSC=3 PCC=10.5 ESC=3 SOC=2 HSS=3										

At the end of II Year II semester, student must complete Summer Internship

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 Internal Member (Mr. M. Balakrishna)	 Internal Member (Mr. A. Babji)	 Internal Member (Mr. D. Suman)	 Internal Member (Dr. G. Ramakrishna)	 Chairman, Board (Dr. M. Sreenivasa Rao)

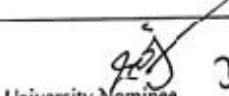
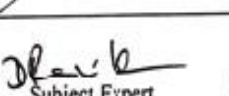
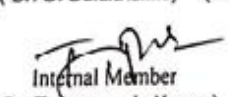
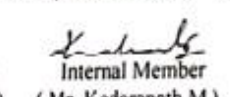
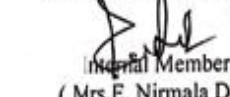
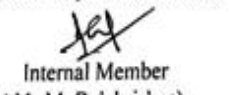
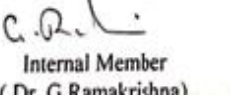
GRBT- 20 COURSE STRUCTURE

Mechanical Engineering

III B. Tech. V Semester

S. No	Category	Course Code	Subject Title	Periods per Week			Credits	Internal	External	Total
				L	T	P				
1	PCC	201ME501	Dynamics of Machinery	3	0	0	3	30	70	100
2	PCC	201ME502	Heat Transfer	3	0	0	3	30	70	100
3	PCC	201ME503	Metal Cutting and Machine Tools	3	0	0	3	30	70	100
4	PEC		Professional Elective -1	3	0	0	3	30	70	100
		201ME564A	A. Fuels Combustion and Emission control							
		201ME564B	B. Tribology							
		201ME564C	C. Industrial Robotics							
		201ME564D	D. Advanced Materials							
5	OEC	Open Elective-1		3	0	0	3	30	70	100
		201CE565a	a. Environmental Pollution & Control							
		201EE565a	b. Fundamentals of Utilization of Electrical Energy							
		201EC565a	c. Microprocessors and its Interfacing							
		201CS565a	d. Foundations of Operating Systems							
		201AM565a	e. Basic Automobile Engineering							
		201MM565a	f. Elements of Mining Technology							
		201PT565a	g. Fundamentals of Petroleum Engineering							
		201MB565a	h. Principles of Management							
6	MC	201MB591	IPR and Patents	2	0	0	0	30	70*	100
7	PCC (LAB)	201ME511	Theory of Machines Lab	0	0	3	1.5	50	50	100
8	PCC (LAB)	201ME512	Machine Tools Lab	0	0	3	1.5	50	50	100

9	SOC (LAB)	201ME581	Modelling and Simulation of Mechanical Systems	0	1	2	2	--	50	50
10	201ME531-Summer Internship/ 201ME521-Mini Project-1			0	0	0	1.5	100	--	100
			Total	16	1	10	21.5	380	500	850
	Honors/Minor courses(the hours distribution can be 3-0-2 or 3-1-0 also)			4	0	0	4			
	SOC = 2	OEC = 3	PCC = 12	Summer Internship=1.5		PEC=3				

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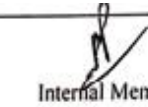
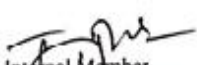
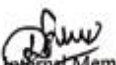
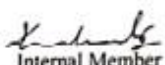
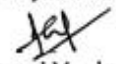
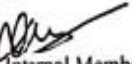
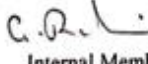
**GRBT- 20 Course Structure
Mechanical Engineering
III B. Tech. VI Semester**

S. NO	Category	Course Code	Subject Title	Periods per Week			Credits	Internal	External	Total
				L	T	P				
1	PCC	201ME601	Design of Machine Members	3	0	0	3	30	70	100
2	PCC	201ME602	Engineering Metrology and Instrumentation	3	0	0	3	30	70	100
3	PCC	201ME603	CAD/CAM	3	0	0	3	30	70	100
4	PEC	Professional Elective -2		3	0	0	3	30	70	100
		201ME664A	A. Refrigeration and Air Conditioning							
		201ME664B	B. Mechatronics							
		201ME664C	C. Advanced Foundry and Welding Technology							
		201ME664D	D. Non Destructive Evaluation							
5	OEC	Open Elective – 2		3	0	0	3	30	70	100
		201CE665a	a. Solid Waste Management							
		201EE665a	a. Concepts of Power System Engineering							
		201EC665a	a. IoT and its Applications							
		201CS665a	a. Fundamentals of Databases							
		201AM665a	a. Hybrid and Electric Vehicles							
		201MM665a	a. Open Pit Slope Analysis and Design							
		201PT665a	a. Basic Concepts in Petroleum Drilling Engineering							
		201MB665a	Operations Management							
	MC	201HB691	Quantitative Aptitude and Reasoning	2	0	0	0	30	70*	100
6	PCC (LAB)	201ME611	Heat Transfer Lab	0	0	3	1.5	50	50	100
7	PCC (LAB)	201ME612	Metrology and Instrumentation Lab	0	0	3	1.5	50	50	100

8	PCC (LAB)	201ME613	Computer Aided Manufacturing Lab	0	0	3	1.5	50	50	100
9	SOC (LAB)	201ME681	Finite Element Analysis	0	1	2	2	---	50	50
			Total	16	1	13	21.5	300	550	850
			Honors/Minor courses	4	0	0	4			

Industrial /Research Internship/Mini Project-2 months (Mandatory) during summer vacation

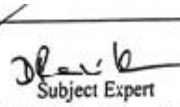
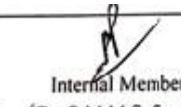
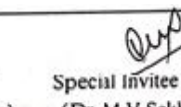
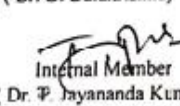
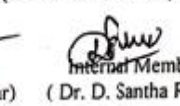
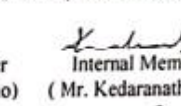
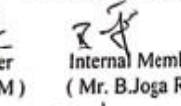
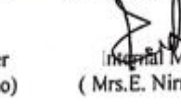
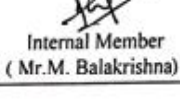
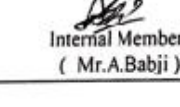
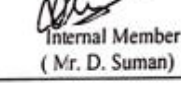
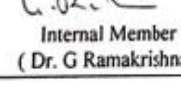
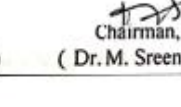
PEC = 3	OEC = 3	PCC = 13.5		SOC =2
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 University Nominee (Dr. B. Balakrishna)	 Subject Expert (Dr. D. Ravi Kumar)	 Industrial Expert (Mr. Rajiv Aramadaka)	 Internal Member (Dr. P.M.M.S. Sarma)	 Special Invitee Member (Dr. M.V.Sekhar Baba)
 Internal Member (Dr. P. Jayananda Kumar)	 Internal Member (Dr. D. Santha Rao)	 Internal Member (Mr. Kedaranath M)	 Internal Member (Mr. B.Joga Rao)	 Internal Member (Mrs.E. Nirmala Devi)
 Internal Member (Mr.M. Balakrishna)	 Internal Member (Mr.A.Babji)	 Internal Member (Mr. D. Suman)	 Internal Member (Dr. G Ramakrishna)	 Chairman, Board (Dr. M. Sreenivasa Rao)

**GRBT- 20 Course Structure
Mechanical Engineering
IV B. Tech. VII Semester**

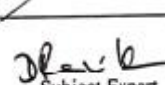
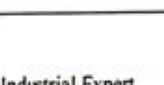
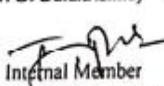
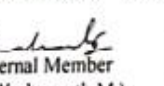
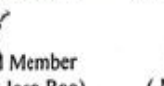
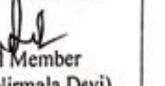
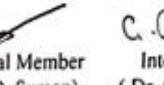
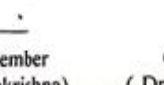
S. NO	Category	Course Code	Subject Title	Periods per Week			Credits	Internal	External	Total
				L	T	P				
1	PEC	Professional Elective -3		3	0	0	3	30	70	100
		201ME761A	A. Design of Transmission Elements							
		201ME761B	B. Mechanical Vibrations							
		201ME761C	C. Automobile Engineering							
		201ME761D	D. Advanced Manufacturing Processes							
2	PEC	Professional Elective - 4		3	0	0	3	30	70	100
		201ME762A	A. Operations Research							
		201ME762B	B. Micro Electro Mechanical Systems							
		201ME762C	C. Design for Manufacturing							
		201ME762D	D. Automation in Manufacturing							
3	PEC	Professional Elective-5		3	0	0	3	30	70	100
		201ME763A	A. Power Plant Engineering							
		201ME763B	B. Nano Technology							
		201ME763C	C. Additive Manufacturing							
		201ME763D	D. Production Planning and Control							
4	OEC	Open Elective-3		3	0	0	3	30	70	100
		201CE764a	a. Building Technology							
		201EE764a	b. Fundamentals of smart grid technologies							
		201EC764a	c. Introduction to Embedded Systems							
		201CS764a	d. Information Security							
		201AM764a	e. Modern Vehicle Technology							
		201MM764a	f. Mining and its Importance							
		201PT764a	g. Basic Concepts in Reservoir Engineering							
		201MB764a	h. Entrepreneurship for Engineers							

5	OEC	Open Elective-4		3	0	0	3	30	70	100
		201CE765a	a. Safety Engineering							
		201EE765a	b. Basics of Electrical Measurements and Instrumentation							
		201EC765a	c. Fundamentals of Digital Image Processing							
		201CS765a	d. Human computer Interaction							
		201AM765a	e. Alternative Energy Resources for Auto-motives							
		201MM765a	f. Remote Sensing & GIS in Mining							
		201PT765a	g. Introduction to Petroleum Production Engineering							
		201MB765a	h. Digital Marketing							
6	HSSC	201HB781	UHV 2 –Understanding Harmony	3	0	0	3	30	70	100
7	SOC	201ME781	Computational Fluid Dynamics Lab	0	1	2	2	---	50	50
8	201ME731-Industrial /Research Internship/ 201ME721-Mini Project-2			0	0	0	3	100	---	100
			Total	16	1	6	23	280	470	750
	Honors/Minor courses			4	-	0	4			
	PEC = 9	SOC=2	PROJ=3	OEC = 6			HSMC=3			

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 Internal Member (Mr. M. Balakrishna)	 Internal Member (Mr. A. Babji)	 Internal Member (Mr. D. Suman)	 Internal Member (Dr. G. Ramakrishna)	 Chairman, BOC (Dr. M. Sreenivasa Rao)

GRBT- 20 Course Structure
Mechanical Engineering
IV B. Tech VIII Semester

S. NO	Category	Code	Course Title	Hours per Week			Credits	Internal	External	Total
				L	T	P				
1	Major Project	201ME841	Project work	0	0	18	12	40	160	200
Total							12			

 University Nominee (Dr. B. Balakrishna)	 Subject Expert (Dr. D. Ravi Kumar)	 Industrial Expert (Mr. Rajiv Aramadaka)	 Internal Member (Dr. P.M.M.S. Sarma)	 Special Invitee Member (Dr. M.V. Sekhar Babu)
 Internal Member (Dr. P. Jayananda Kumar)	 Internal Member (Dr. D. Santha Rao)	 Internal Member (Mr. Kedaranath M)	 Internal Member (Mr. B.Joga Rao)	 Internal Member (Mrs.E. Nirmala Devi)
 Internal Member (Mr.M. Balakrishna)	 Internal Member (Mr.A. Babji)	 Internal Member (Mr. D. Suman)	 Internal Member (Dr. G Ramakrishna)	 Chairman, BOS (Dr. M. Sreenivasa Rao)