



An Autonomous Institution **AUTOMOBILE ENGINEERING**

GRBT20

GODAVARI INSTITUTE OF ENGINEERING & TECHNOLOGY (A), Rajahmundry
DEPARTMENT OF AUTOMOBILE ENGINEERING
GRBT-20 Course Structure

I B.Tech., I SEMESTER

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

I B.Tech., II SEMESTER

S.No	Category	Course Code	Course Title	Hrs/Week			Credits	Internal	External	Total
				L	T	P				
1	BSC-3	201HB201	Mathematics-II	3	0	0	3	30	70	100
2	BSC-4	201HB202b	Engineering Physics	3	0	0	3	30	70	100
3	ESC-5	201ME203a	Engineering Mechanics	3	0	0	3	30	70	100
4	ESC-4	201CS204a	Fundamentals of Computer Programming	3	0	0	3	30	70	100
5	ESC-6	201AM205	Fundamentals of Automobile Engineering	3	0	0	3	30	70	100
6	MC-1	201HB296	Environmental Science	2	0	0	0	30*	-	-
7	BSCL-2	201HB211b	Engineering Physics Laboratory	0	0	3	1.5	50	50	100
8	HSMC-2	201HB212	Communicative English Laboratory	0	0	3	1.5	50	50	100
9	ESCL-2	201CS213a	Fundamentals of Computer Programming Laboratory	0	0	3	1.5	50	50	100
BSC=7.5	ESC=10.5	HSMC=1.5 MC=0	Total	17	0	9	19.5	300	500	800

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GRBT-20 Course Structure

II B.Tech., I SEMESTER

S.No	Category	Course Code	Course Title	Hrs/Week			Credits	Internal	External	Total
				L	T	P				
1	BSC-5	201HB301	Mathematics-III	3	0	0	3	30	70	100
2	ESC-6	201AM302	Metallurgy & Materials Science	3	0	0	3	30	70	100
3	PCC-1	201AM303	Strength of Materials	3	0	0	3	30	70	100
4	PCC-2	201AM304	Fluid Mechanics & Hydraulic Machines	3	0	0	3	30	70	100
5	PCC-3	201AM305	Automobile Chassis Components	3	0	0	3	30	70	100
6	PCC-L1	201AM311	Strength of Materials& Metallurgy Lab	0	0	3	1.5	50	50	100
7	PCC-L2	201AM312	Automobile Chassis Components Lab	0	0	3	1.5	50	50	100
8	PCC-L3	201AM313	Fluid Mechanics & Hydraulic Machines Lab	0	0	3	1.5	50	50	100
9	SOC-1	201HB381	English for Career	1	0	2	2	-	15+35	50
10	Proj	201AM321	Community Service Project	0	0	0	4	100	-	100
			Total	16	0	11	25.5	400	550	950

II B.Tech., II SEMESTER

S.No	Category	Course Code	Course Title	Hrs/Week			Credits	Internal	External	Total
				L	T	P				
1	BSC-6	201HB401	Probability & Statistics	3	0	0	3	30	70	100
2	PCC-4	201AM402	Thermodynamics	3	0	0	3	30	70	100
3	PCC-5	201AM403	Automobile Engines	3	0	0	3	30	70	100
4	HSC-2	201ME404	Industrial Engineering & Management	3	0	0	3	30	70	100
5	PCC-6	201AM405	Automobile Electrical & Autotronics	3	0	0	3	30	70	100
6	ESC-L4	201AM411	Automobile Assembly Drawing Lab	0	0	3	1.5	50	50	100
7	PCC-L6	201AM412	IC Engines & Fuels Lab	0	0	3	1.5	50	50	100
8	PCC-L7	201AM413	Automobile Electrical & Autotronics Lab	0	0	3	1.5	50	50	100
9	SOC-2	201CS481A	Programming with Python	1	0	2	2	-	15+35	50
10	MC-2	201CE491	Constitution of India	2	0	0	0	30*	70*	100*
			Total	18	0	11	21.5	300	550	850
			Honor course &/Minor course (Optional)				4			

Summer Internship after second year (to be evaluated during 5th sem)

Subjects for Honors Degree (The student need to complete any 4 subjects from each pool& 2 related MOOCS courses during his course study and fulfill the requirements as per the regulations GRBT20)

Pool 1	Pool 2	Pool 3	Pool 4
Two & Three wheeler Technology	Special Purpose Vehicles	Automotive Electronics for Electric Vehicles	Automotive Embedded Systems
Modern Vehicle Design	Computer Aided Vehicle Design	Automotive Aerodynamics	Race Car Design
Engine Design & Development	Industrial Automation & Robotics	Advanced Materials for Automobiles	Production of Automobile Components

Subjects offered for other branch students to acquire Minor Degree (The student need to complete any 4 subjects& 2 related MOOCS courses during his course study and fulfill the requirements as per the regulations GRBT20)

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| <ol style="list-style-type: none"> 1. Basic Automobile Engineering 2. Fundamentals of Electric Vehicles 3. Automobile Electrical & Autotronics 4. Electric and Hybrid Vehicles Architecture 5. Modern Vehicle Technology 6. Electric Vehicle Design 7. Modern Vehicle Design 8. Autonomous Vehicles |
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GRBT-20 Course Structure

III B.Tech., I SEMESTER

S. No	Category	Course Code	Course Title	Hrs/Week			Credits	Internal	External	Total
				L	T	P				
1	PCC-7	201AM501	Kinematics of Machinery	3	0	0	3	30	70	100
2	PCC-8	201AM502	Production Technology	3	0	0	3	30	70	100
3	PCC-9	201AM503	Design of Automotive Elements	3	0	0	3	30	70	100
4	PEC-1	201AM564A 201AM564B 201AM564C 201AM564D	1. Hybrid, Electric & Fuel Cell Vehicles 2. Two and Three Wheelers 3. Vehicle Body Engineering & Safety 4. Measurements and Control Systems	3	0	0	3	30	70	100
5	OEC/JOE-1		Open Elective-1 (See enclosed table)	3	0	0	3	30	70	100
6	PCC-L8	201AM511	Production Technology Lab	0	0	3	1.5	50	50	100
7	PCC-L9	201AM512	Auto Scanning and Vehicle Testing Lab	0	0	3	1.5	50	50	100
8	SOC-3	201AM581	Electric Vehicle Design & Assembling	0	1	2	2	-	15+35	50
9	MC-3	201MB591	IPR and Patents	2	0	0	0	30*	70*	100*
10	Proj	201AM521	Mini Project/ Study Project	0	0	0	1.5	100	-	100
			Total	16	0	11	21.5	350	500	850

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GRBT-20 Course Structure

III B.Tech., II SEMESTER

S. No	Category	Course Code	Course Title	Hrs/Week			Credits	Internal	External	Total
				L	T	P				
1	PCC-10	201AM601	Dynamics of Machinery	3	0	0	3	30	70	100
2	PCC-11	201AM602	Heat Transfer	3	0	0	3	30	70	100
3	PCC-12	201AM603	Automotive Pollution & Control	3	0	0	3	30	70	100
4	PEC-2	201AM664A	1. CFD for Automobile Applications	3	0	0	3	30	70	100
		201AM664B	2. Alternative Energy Sources for Automobiles							
		201AM664C	3. Noise Vibrations and Harshness							
		201AM664D	4. Vehicle Maintenance							
5	OEC/JOE-2		Open Electrive-2 (See enclosed table)	3	0	0	3	30	70	100
6	PCC-L10	201AM611	Theory of Machines Lab	0	0	3	1.5	50	50	100
7	PCC-L11	201AM612	Vehicle Maintenance Lab	0	0	3	1.5	50	50	100
8	PCC-L12	201AM613	Heat Transfer Lab	0	0	3	1.5	50	50	100
9	SOC-4	201AM681	Accident Analysis	0	1	2	2	-	15+35	50
10	MC-4	201HB691	Quantitative Aptitude and Reasoning	2	0	0	0	30*	70*	100*
			Total	18	0	11	21.5	300	550	850

Summer Internship after third year (to be evaluated during 7th sem)

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IV B.Tech., I SEMESTER

S. No	Category	Course Code	Course Title	Hrs/Week			Credits	Internal	External	Total
				L	T	P				
1	PEC-3	201AM761A 201AM761B 201AM761C 201AM761D	1. Metal Cutting and Machine Tools 2. Automobile HVAC 3. Special Purpose Vehicles 4. Vehicle Infotronics	3	0	0	3	30	70	100
2	PEC-4	201AM762A 201AM762B 201AM762C 201AM762D	1. Automobile Certification and Homologation 2. Finite Element Analysis 3. Vehicle Transport Management 4. Electronic Engine & Vehicle Management Systems	3	0	0	3	30	70	100
3	PEC-5	201AM763A 201AM763B 201AM763C 201AM763D	1. Automobile Control Systems and Ergonomics 2. Vehicle Dynamics 3. CAD/CAM 4. Smart, Autonomous and Connected Vehicles	3	0	0	3	30	70	100
4	OEC/JOE-3		Open Elective-3 (See enclosed table)	3	0	0	3	30	70	100
5	OEC/JOE-4		Open Elective-4 (See enclosed table)	3	0	0	3	30	70	100
6	H&SSE	201HB796	UHV 2Understanding Harmony	3	0	0	3	30	70	100
7	SOC-5	201AM781	Additive Manufacturing	0	1	2	2	-	15+35	50
8	Proj	201AM731	Internship	0	0	0	3	100	-	100
Total				19	0	2	23	280	470	750



IV B.Tech., II SEMESTER

S. No	Category	Course Code	Course Title	Hrs/Week			Credits	Internal	External	Total
				L	T	P				
1	Major Project	201AM841	Project work	0	0	0	8	60	140	200
			Total	0	0	0	8	60	140	200