MUZAFFARPUR INSTITUTE OF TECHNOLOGY

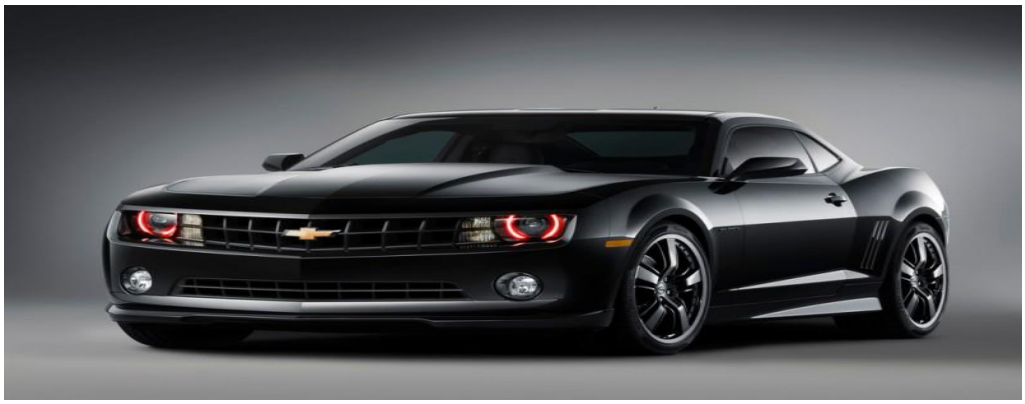
MUZAFFARPUR

COURSE FILE

OF

AUTOMOTIVE MECHANICS

(021724)



Faculty Name:

MD. IRSHAD ALAM

ASSISTANT PROFESSOR

DEPARTMENT OF MECHANICAL ENGINEERING

विज्ञान एवं प्रावैधिकी विभाग

Department of Science and Technology

Government of Bihar

CONTENTS

Department of Mechanical Engineering

Vision

- To strengthen the region through imparting superior quality technical education and research; which enables the fulfillment of industrial challenge and establish itself as a Centre of Excellence in the field of Mechanical Engineering.

Mission

- To build an academic environment of teaching and lifelong learning for students to make them competitive in context with advance technological, economical and ecological changes.
- To enable the students to enhance their technical skills and communications through research, innovation and consultancy projects.
- To share and explore the accomplishments through didactic, enlightenment, R & D programs with technical institution in India and abroad.

Mechanical Engineering Program Educational Objectives

After 4 year of graduation a B.TECH (ME) graduate would be able to

- Graduates will spread and enhance their technical capability and proficiency through vital domain of economical, environmental and social concerns affiliated with the mankind and industry.

- Graduates will able to work professionally with modern methods in the area of Thermal, Mechanical System Design, Manufacturing, Measurement, Quality control and other interdisciplinary fields of concerns.

- Graduates will practice Mechanical engineering in sensible, flexible and ethical manner to benefit the society, industry and nation toward the rapidly changing global technical standards.

- Graduates will serve as ambassadors for engineering by their knowledge, creativity, imagination and innovation and set new extremes in their profession through lifelong learning.

Mechanical Engineering Student Outcomes

Students who complete the B.TECH degree in ME will be able to:

1. An ability to apply the knowledge of mathematics, basic sciences and engineering concepts to solve the complex engineering problems.
2. The ability to conduct experiments and to critically analyze and interpret the experimental data to reach at substantial outcomes.
3. An ability to design systems, components, or processes to meet appropriate needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability.
4. An ability to identify, formulates, and solves the complex engineering problems.
5. An ability to function on multi-disciplinary teams that leads the multi-disciplinary projects.
6. An understanding of professional and ethical responsibility.

7. An ability to communicate effectively with written, oral, and visual means.
8. An ability to understand the impact of engineering solutions in a global, environmental, economical and societal context.
9. An ability to recognize the need to engage in life-long learning.
10. An ability to attain knowledge of contemporary issues.
11. An ability to use the techniques, skills, and modern tools necessary for Mechanical engineering practice.
12. Possess ability to estimate costs, estimate quantities and evaluate materials for design and manufacturing purposes.

SYLLABUS B. Tech. 7th Semester

ME- 021724 **Automotive Mechanics**

L T P Credit		
3-1-0 4	Max Marks:	100
	Final Exam:	70 Marks
	Sessional:	20 Marks
	Internals:	10 Marks.

1. **Description of power unit**: Fuel supply system and engine lubrication.
2. **Transmission requirements,** Fluid and automatic transmission system along with their performance requirements, tractive resistance.
3. **Different types of steering systems** and performance requirements, Stability of vehicles on level road and curve path.
4. **General braking requirements**, weight transfer during braking, different types of brakes.
5. **General consideration of strength** and stiffness of vehicle frame, various suspension systems, shock absorber and engine mountage, Tyre pavement interaction forces, tyre wear & SAE terminology.
6. **Various types of ignition systems with wiring diagram**
7. **Testing of vehicles and handling characteristics.**
8. **Preventive maintenance**, troubleshooting & tuning of power unit
9. **Pollution due to vehicles emission,** Effect of design and operating condition on pollution.

Reference Books: 1.

TB1: 'Automative Mechanics by Crouse
TB2: 'Automobile Engineering by KM Gupta

Reference Books

RB1: Automobile Engineering by Newton & Steeds

7th Semester Mechanical MIT MUZAFFARPUR ROOM NO. 53

Day/ time	1st Period	2nd Period	3rd Period	4th Period	01:00AM to 02:00 AM	5TH to 7TH period
	9:00AM to 10:00 AM	10:00AM to 11:00 AM	11:00AM to 12:00 PM	12:00PM to 01:00PM		02:00PM to 05:00PM
MON			AUT.MEC(53)			AUT.MEC(53)TEST(2.30 to 3.00pm)
TUE		AUT.MEC(53)				
WED	AUT.MEC(53)					
THU				AUT.MEC(53)		AUT.MEC (53) T(4.00-5.00pm)
FRI	AUT.MEC (53) T					AUT.MEC (53) T(4.00-5.00pm)
SAT						AUT.MEC (53) T(2.00-3.00pm)

Automotive Mechanics

MUZAFFARPUR INSTITUTE OF TECHNOLOGY
MUZAFFARPUR

NAME LIST OF B. TECH. 7TH SEMESTER 2015 BATCH

MECHANICAL BRANCH

SL. NO.	ROLL NO.	AKU REG. NO.	NAME
1	15M01	15102107066	ASHISH CHAURASIA
2	15M02	15102107067	RAJ KAMAL
3	15M03	15102107068	VIVEK KUMAR
4	15M04	15102107069	RAM BHADRA JHA
5	15M05	15102107070	RITU RAJ
6	15M06	15102107071	SUMIT KUMAR
7	15M07	15102107072	PAWAN KUMAR PIYUSH
8	15M08	15102107073	HIMANSHU KUMAR
9	15M09	15102107074	ANMOL
10	15M10	15102107075	MADHU PRIYA
11	15M11	15102107076	SANJAN KUMAR YADAV
12	15M12	15102107077	PRAVEEN KUMAR
13	15M13	15102107078	VIKASH KUMAR KESHRI
14	15M14	15102107079	AHSAN SOHAIL
15	15M15	15102107080	MUKESH KUMAR ROY
16	15M17	15102107081	SUMAN KUMAR SINHA
17	15M18	15102107082	RITESH KUMAR
18	15M23	15102107084	SAROJ KUMAR PASWAN
19	15M24	15102107085	MAYANK
20	15M25	15102107086	ASHOK DAS
21	15M26	15102107087	ALOKRAJ
22	15M28	15102107089	ASHIWANI KUMAR
23	15M29	15102107090	NEHAL ANSARI
24	15M30	15102107091	DHARMENDRA KUMAR
25	15M31	15102107092	ASHVANI KUMAR
26	15M32	15102107093	DHANANJAY KUMAR
27	15M34	15102107094	RANJAN KUMAR
28	15M35	15102107095	ANURAG KUMAR RAVI
29	15M36	15102107096	RAVI RAJ
30	15M37	15102107097	ANKIT AKASH
31	15M38	15102107098	PRAMENDRA KUMAR
32	15M39	15102107099	RAMESH KUMAR
33	15M40	15102107100	GANGA RAM MANDAL
34	15M41	15102107101	ROHIT KUMAR
35	15M42	15102107102	UJJWAL KASHYAP

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36	15M44	15102107104	NISHANT KIRAN
37	15M46	15102107105	AMAN KUMAR JHA
38	15M47	15102107106	NITISH KUMAR
39	15M48	15102107107	NAVEEN KUMAR
40	15M49	15102107108	DHANANJAY KUMAR CHOUDHARY
41	15M50	15102107109	AAKASH KUMAR
42	15M51	15102107110	DEEPAK KUMAR
43	15M52	15102107111	SURANJAN KUMAR
44	15M53	15102107112	MONU KUMAR
45	15M54	15102107113	SANJEEV KUMAR ADITYA
46	15M55	15102107114	ISHA SHARMA
47	15M56	15102107115	NEETU GUPTA
48	15M57	15102107116	AMIT KUMAR
49	15M59	15102107117	MANISH KUMAR SINGH
50	15M60	15102107118	ABHINANDAN KUMAR
51	15M61	15102107119	RAM KUMAR MAHTO
52	15M62	15102107120	ROHIT RAJ
53	15M16	15102107121	SAJAN KUMAR
54	15M20	15102107122	MD AFTAB ALAM
55	15M21	15102107123	DHEERAJ KUMAR
56	15M58	15102107124	MERAJ AHMED
57	15M19	15102107125	SHANUR RAHMAN WAHID
58	15M33	15102107277	RAHUL KUMAR
59	15M65	15104107195	PRAKASH KUMAR
60	15M63	15104107198	VIKAS KUMAR SAXENA
61	15M66	15104107204	ANAND MOHAN DEO
62	15M67	15104107212	ADITYA KUMAR
63	15M64	15104107213	SUMIT KUMAR
64	16(LE)M09	16102107901	RAUSHAN KUMAR SINGH
65	16(LE)M10	16102107902	HIMANSHU CHANDRA
66	16(LE)M06	16102107903	KUMAR PRATIK VISHWAS
67	16(LE)M01	16102107904	ADITYA KUMAR
68	16(LE)M02	16102107905	SHAKTI KUMAR
69	16(LE)M08	16102107906	NIRBHAY KUMAR
70	16(LE)M03	16102107907	ROHIT KUMAR
71	16(LE)M05	16102107908	KAMLESH KUMAR
72	16(LE)M04	16102107909	KUMARI PRIYA RANJAN
73	16(LE)M07	16102107910	VIKRANT KUMAR

1. Course Plan

Lecture Number	Date of Lecture	Topics	Web Links for video lectures	Text Book / Reference Book / Other reading material	Page numbers of Text Book(s)
1-6		**Description of power unit: Fuel supply system and engine lubrication**		TB1,TB2 RB1	
7-11		**Transmission requirements,** Fluid and automatic transmission system along with their performance requirements, tractive resistance.		TB1,TB2 RB1	
12-15		**Different types of steering systems** and performance requirements, Stability of vehicles on level road and curve path.		TB1,TB2 RB1	
16-20		**General braking requirements**, weight transfer during braking, different types of brakes.		TB1,TB2 RB1	
21-26		**General consideration of strength** and stiffness of vehicle frame, various suspension systems, shock absorber and engine mountage, Tyre pavement interaction forces, tyre wear & SAE terminology.		TB1,TB2, RB1	

27-30		**Various types of ignition systems with wiring diagram**		TB1,TB2, RB1	
31-34		**Testing of vehicles and handling characteristics.**		TB1,TB2, RB1	
35-38		**Preventive maintenance**, troubleshooting & tuning of power unit		TB1,TB2, RB1	
39-42		**Pollution due to vehicles emission,** Effect of design and operating condition on pollution.		TB1,TB2, RB1	

1. **Evaluation Scheme:**

Component 1	Mid Semester Exam	20
Component 2	Assignment Evaluation	05
Component 2	Attendance	05
Component 3**	End Term Examination**	70
	Total	**100**

****** The End Term Comprehensive examination will be held at the end of semester. The mandatory requirement of 75% attendance in all theory classes is to be met for being eligible to appear in this component.

SYLLABUS

Topics	No of lectures	Weightage
Description of power unit: Fuel supply system and engine lubrication.	6	14.28%
Transmission requirements, Fluid and automatic transmission system along with their performance requirements, tractive resistance.	5	11.90%
Different types of steering systems and performance requirements, Stability of vehicles on level road and curve path.	4	9.52%
General braking requirements, weight transfer during braking, different types of brakes	5	11.90%
General consideration of strength and stiffness of vehicle frame, various suspension systems, shock absorber and engine mountage, Tyre pavement interaction forces, tyre wear & SAE terminology.	6	14.28%
Various types of ignition systems with wiring diagram	4	9.52%
Testing of vehicles and handling characteristics.	4	9.52%
Preventive maintenance, troubleshooting & tuning of power unit	4	9.52%
Pollution due to vehicles emission, Effect of design and operating condition on pollution.	4	9.52%

This Document is approved by:

Designation	Name	Signature
Course Coordinator	Mr. Md.Irshad Alam	
H.O.D	Dr. Vikas Kumar	
Principal	Dr. J.N Jha	
Date		

MIT MUZAFFARPUR

Institute / College Name :	Muzaffarpur Institute of Technology, Muzaffarpur		
Program Name	**B.Tech.**		
Course Code	021724		
Course Name	AUTOMOTIVE MECHANICS		
Lecture / Tutorial (per week):	3/1	**Course Credits**	4
Course Coordinator Name	Mr Md. Irshad Alam		

LECTURE PLAN

Topics	**Lecture Number**	**Date on which the Lecture was taken**
Description of power unit: Fuel supply system and engine lubrication	**1-6**	
Description of power unit	1-2	
Fuel supply system	3-4	
engine lubrication	5-6	
Transmission requirements, Fluid and automatic transmission system along with their performance requirements, tractive resistance	**7-11**	
Transmission requirements	7	
Fluid and automatic transmission system along with their performance requirements	8-9	
tractive resistance	10-11	
Different types of steering systems and performance requirements, Stability of vehicles on level road and curve path.	**12-15**	
Different types of steering systems	12-13	
performance requirements, Stability of vehicles on level road and curve path.	13-15	
General braking requirements, weight transfer during braking, different types of brakes.	**16-20**	
General braking requirements	16-17	
weight transfer during braking	18	