

NORTH MAHARASHTRA UNIVERSITY,

JALGAON (M.S.)

Bachelor of Engineering

Automobile Engineering

Faculty of Science and Technology



'A' Grade  
NAAC Re-Accredited  
(3<sup>rd</sup> Cycle)

Syllabus Structure

w.e.f. 2017 – 18

## Subject Group Code and Subject Groups

Sr. No.	GROUP	Category	Breakup of Credits (Total 160)
1	A	Humanities and Social Sciences including Management Courses (HSMC)	10
2	B	Basic Science Courses (BSC)	30
3	C	Engineering Science Courses including workshop, drawing, basics of electrical/mechanical/computer etc. (ESC)	33
4	D	Professional Core Courses (PCC)	53
5	E	Professional Elective Courses relevant to chosen specialization/branch (PEC)	18
6	F	Open subjects – Electives from other technical and /or emerging subjects (OEC)	12
7	G	Project work, seminar and internship in industry or appropriate work place/ academic and research institutions in India/abroad (PROJ)	15
8	H	Mandatory Courses (MC) [Environmental Sciences, Induction program, Indian Constitution, Essence of Indian Traditional Knowledge]	(non-credit)
<b>Total</b>			<b>171</b>

**Syllabus Structure for First Year Engineering (Semester – I) ( Common to All Branches) (w.e.f. 2017 – 18)**

Course Code	Name of the course	Group	Teaching Scheme				Theory (Marks)		Practical (Marks)		Total (Marks)	Credits
			Teaching Hrs./week	Tut. Hrs./week	PR Hrs./week	Total Hrs./week	ISE	ESE	ICA	ESE		
FEN 101	Applied Physics -I	B	03	--	--	03	40	60	--	--	100	03
FEN 102	Applied Chemistry -I	B	03	--	--	03	40	60	--	--	100	03
FEN 103	Applied Mathematics -I	B	03	01	--	04	40	60	--	--	100	04
FEN 104	Communicative English	A	03	--	--	03	40	60	--	--	100	03
FEN 105	Introduction to Civil Engineering & Engineering Mechanics	C	03	--	--	03	40	60	--	--	100	03
FEN 106	Introduction to Electrical Engineering	C	03	--	--	03	40	60	--	--	100	03
FEN 107	Workshop Practice –I	C	-	--	02	02	--	--	25	--	25	01
FEN 108	Applied Sciences Lab -I	B	--	--	*02	02	--	--	25	--	25	01
FEN 109	Introduction to Civil Engineering & Engineering Mechanics Lab	C	--	--	02	02	--	--	25	25 (OR)	50	01
FEN 110	Introduction to Electrical Engineering Lab	C	--	--	02	02	--	--	25	25(OR)	50	01
FEN 111	Communicative English Lab	A	--	--	02	02	--	--	25	25(OR)	50	01
<b>Total</b>			<b>18</b>	<b>01</b>	<b>10</b>	<b>29</b>	<b>240</b>	<b>360</b>	<b>125</b>	<b>75</b>	<b>800</b>	<b>24</b>

**ISE:** Internal Sessional Examination, **ESE:** End Semester Examination, **ICA:** Internal Continuous Assessment, \*Alternate week

**Syllabus Structure for First Year Engineering (Semester – II) ( Common to All Branches) (w.e.f. 2017 – 18)**

Course Code	Name of the course	Group	Teaching Scheme				Theory (Marks)		Practical ( Marks)		Total ( Marks)	Credits
			Teaching Hrs./week	Tut. Hrs./week	PR Hrs./week	Total Hrs./week	ISE	ESE	ICA	ESE		
FEN 112	Applied Physics -II	B	03	--	--	03	40	60	--	--	100	03
FEN 113	Applied Chemistry -II	B	03	--	--	03	40	60	--	--	100	03
FEN 114	Applied Mathematics -II	B	03	01	--	04	40	60	--	--	100	04
FEN 115	Introduction to “C” Programming	C	03	--	--	03	40	60	--	--	100	03
FEN 116	Introduction to Mechanical Engineering & Engineering Drawing	C	03	--	--	03	40	60	--	--	100	03
FEN 117	Introduction to Electronics Engineering	C	03	--	--	03	40	60	--	--	100	03
FEN 118	Workshop Practice –II	C	-	--	02	02	--	--	25	--	25	01
FEN 119	Applied Sciences Lab -II	B	--	--	*02	02	--	--	25	--	25	01
FEN 120	Introduction to Mechanical Engineering & Engineering Drawing Lab	C	--	--	02	02	--	--	25	25 (OR)	50	01
FEN 121	Introduction to “C” Programming Lab	C	--	--	02	02	--	--	25	25(OR)	50	01
FEN 122	Introduction to Electronics Engineering Lab	C			02	02	--	--	25	25(OR)	50	01
<b>Total</b>			<b>18</b>	<b>01</b>	<b>10</b>	<b>29</b>	<b>240</b>	<b>360</b>	<b>125</b>	<b>75</b>	<b>800</b>	<b>24</b>

**ISE:** Internal Sessional Examination, **ESE:** End Semester Examination, **ICA:** Internal Continuous Assessment, \*Alternate week

**Syllabus Structure for Second Year Engineering (Semester – III) (Automobile Engineering) (w.e.f. 2018 – 19)**

Name of the Course	Group	Teaching Scheme				Evaluation Scheme					Credits
		Theory Hrs / week	Tutorial Hrs / week	Practical Hrs / week	Total	Theory		Practical		Total	
						ISE	ESE	ICA	ESE		
<b>Biology</b>	B	3	1	--	4	40	60	-	-	100	<b>4</b>
<b>Electrical Drives &amp; Controls</b>	C	3	--	--	3	40	60	-	-	100	<b>3</b>
<b>Automobile System</b>	C	3	--	-	3	40	60	--	--	100	<b>3</b>
<b>Thermodynamics</b>	D	3	--	-	3	40	60	--	--	100	<b>3</b>
<b>Industrial Psychology</b>	A	3	--	--	3	40	60	-	-	100	<b>3</b>
<b>Automobile System Lab</b>	C	--	--	2	2	--	--	25	25(OR)	50	<b>1</b>
<b>Thermodynamics Lab</b>	D	--	--	2	2	--	--	25	25(OR)	50	<b>1</b>
<b>Computer Graphics Lab</b>	D	1	--	2	3	-	-	25	25(PR)	50	<b>2</b>
		<b>16</b>	<b>1</b>	<b>6</b>	<b>23</b>	<b>200</b>	<b>300</b>	<b>75</b>	<b>75</b>	<b>650</b>	<b>20</b>

**ISE: Internal Sessional Examination**

**ESE: End Semester Examination**

**ICA: Internal Continuous Assessment**

**Syllabus Structure for Second Year Engineering (Semester – IV) (Automobile Engineering) (w.e.f. 2018 – 19)**

Name of the Course	Group	Teaching Scheme				Evaluation Scheme					Credits
		Theory Hrs / week	Tutorial Hrs / week	Practical Hrs / week	Total	Theory		Practical		Total	
						ISE	ESE	ICA	ESE		
<b>Mathematics – III</b>	B	3	1	--	4	40	60	--	--	100	<b>4</b>
<b>Automobile Chassis and Body Engineering</b>	C	3	--	--	4	40	60	--	--	100	<b>3</b>
<b>Applied Thermodynamics</b>	D	3	1	--	3	40	60	--	--	100	<b>4</b>
<b>Fluid Mechanics and Fluid Machines</b>	D	3	--	--	3	40	60	--	--	100	<b>3</b>
<b>Industrial Economics</b>	A	3	--	--	3	40	60	--	--	100	<b>3</b>
<b>Applied Thermodynamics Lab</b>	D	--	--	2	2	--	--	25	25(OR)	50	<b>1</b>
<b>Fluid Mechanics and Fluid Machines Lab</b>	D	--	--	2	2	--	--	25	25(OR)	50	<b>1</b>
<b>Drawing of Automotive Components Lab</b>	D	1	--	2	3	-	-	25	25(OR)	50	<b>2</b>
<b>Environmental Science</b>	H	--	--	--	--	--	--	--	--	--	<b>0</b>
		<b>16</b>	<b>2</b>	<b>6</b>	<b>24</b>	<b>200</b>	<b>300</b>	<b>75</b>	<b>75</b>	<b>650</b>	<b>21</b>

**ISE: Internal Sessional Examination**

**ESE: End Semester Examination**

**ICA: Internal Continuous Assessment**

**Syllabus Structure for Third Year Engineering (Semester – V) (Automobile Engineering) (w.e.f. 2019 – 20)**

Name of the Course	Group	Teaching Scheme				Evaluation Scheme					Credits
		Theory Hrs / week	Tutorial Hrs / week	Practical Hrs / week	Total	Theory		Practical		Total	
						ISE	ESE	ICA	ESE		
Heat Transfer	D	3	--	--	3	40	60	--	--	100	3
Manufacturing Processes	D	3	--	--	3	40	60	--	--	100	3
Strength of Materials	D	3	--	--	3	40	60	--	--	100	3
Machine Drawing Lab	D	--	--	2	2	-	-	25	25(OR)	50	1
Heat Transfer Lab	D	--	--	2	2	--	--	25	25(OR)	50	1
Manufacturing Processes Lab	D	--	--	2	2	--	--	25	25(OR)	50	1
Professional Elective Course – I	E	3	--	--	3	40	60	-	-	100	3
Open Elective Course – I	F	3	--	--	3	40	60	-	-	100	3
Minor Project – I (Stage –I)	G	--	--	6	6	-	-	50	-	50	3
MC-III – Constitution of India	H	--	--	--	--	--	--	--	--		0
		15	0	12	27	200	300	125	75	700	21

ISE: Internal Sessional Examination

ESE: End Semester Examination

ICA: Internal Continuous Assessment

Professional Elective Course – I	Open Elective Course – I

**Syllabus Structure for Third Year Engineering (Semester – VI) (Automobile Engineering) (w.e.f. 2019 – 20)**

Name of the Course	Group	Teaching Scheme				Evaluation Scheme					Credits
		Theory Hrs / week	Tutorial Hrs / week	Practical Hrs / week	Total	Theory		Practical		Total	
						ISE	ESE	ICA	ESE		
<b>Kinematics and Theory of Machines</b>	<b>D</b>	3	--	--	3	40	60	--	--	100	<b>3</b>
<b>Manufacturing Technology</b>	<b>D</b>	3	--	--	3	40	60	--	--	100	<b>3</b>
<b>Automobile Service &amp; Repairs</b>	<b>D</b>	3	--	--	3	40	60	--	--	100	<b>3</b>
<b>Professional Elective Course – II</b>	<b>E</b>	3	--	--	3	40	60	-	-	100	<b>3</b>
<b>Open Elective Course – II</b>	<b>F</b>	3	--	--	3	40	60	-	-	100	<b>3</b>
<b>Kinematics and Theory of Machines Lab</b>	<b>D</b>	--	--	2	2	--	--	25	25(OR)	50	<b>1</b>
<b>Manufacturing Technology Lab</b>	<b>D</b>	--	--	2	2	--	--	25	25(OR)	50	<b>1</b>
<b>Automobile Service &amp; Repairs Lab</b>	<b>D</b>	--	--	2	2	--	--	25	-	25	<b>1</b>
<b>Minor Project</b>	<b>G</b>	--	--	6	6	-	-	50	25(OR)	75	<b>3</b>
		<b>15</b>	<b>--</b>	<b>12</b>	<b>27</b>	<b>200</b>	<b>300</b>	<b>125</b>	<b>75</b>	<b>700</b>	<b>21</b>

**ISE: Internal Sessional Examination**

**ESE: End Semester Examination**

**ICA: Internal Continuous Assessment**

Professional Elective Course – II	Open Elective Course – II

**NOTE:** Every student should undergo Summer Internship during Summer Vacation of at least THREE weeks duration. Credits for Summer Internship shall be included in Project (Stage – I) of Semester – VII.



**Syllabus Structure for Fourth Year Engineering (Semester – VII) (Automobile Engineering) (w.e.f. 2020 – 21)**

Name of the Course	Group	Teaching Scheme				Evaluation Scheme					Credits
		Theory Hrs / week	Tutorial Hrs / week	Practical Hrs / week	Total	Theory		Practical		Total	
						ISE	ESE	ICA	ESE		
<b>Design of Machine Elements &amp; Transmission Systems</b>	D	3	--	--	3	40	60	--	--	100	<b>3</b>
<b>Professional Elective Course – III</b>	E	3	--	--	3	40	60	-	-	100	<b>3</b>
<b>Professional Elective Course – IV</b>	E	3	--	--	3	40	60	-	-	100	<b>3</b>
<b>Open Elective Course – III</b>	F	3	--	--	3	40	60	-	-	100	<b>3</b>
<b>Design of Machine Elements &amp; Transmission Systems Lab</b>	D	--	--	2	2	--	--	25	25(OR)	50	<b>1</b>
<b>Autotronics Lab</b>	D	1	--	2	3	-	-	25	25(OR)	50	<b>2</b>
<b>Project ( Stage – I )</b>	G	--	--	12	12	-	-	50	50(OR)	100	<b>6</b>
<b>Essence of Indian Traditional Knowledge</b>	H	--	--	--	--	--	--	--	--	--	<b>0</b>
		<b>13</b>	<b>--</b>	<b>16</b>	<b>29</b>	<b>160</b>	<b>240</b>	<b>100</b>	<b>100</b>	<b>600</b>	<b>21</b>

**ISE: Internal Sessional Examination**

**ESE: End Semester Examination**

**ICA: Internal Continuous Assessment**

<b>Professional Elective Course – III</b>	<b>Professional Elective Course – IV</b>	<b>Open Elective Course – III</b>

**Syllabus Structure for Fourth Year Engineering (Semester – VIII) (Automobile Engineering) (w.e.f. 2020 – 21)**

Name of the Course	Group	Teaching Scheme				Evaluation Scheme					Credits
		Theory Hrs / week	Tutorial Hrs / week	Practical Hrs / week	Total	Theory		Practical		Total	
						ISE	ESE	ICA	ESE		
<b>Automobile System Design</b>	D	3	--	--	3	40	60	--	--	100	<b>3</b>
<b>Automobile System Design Lab</b>	D	--	--	2	2	--	--	25	25(OR)	50	<b>1</b>
<b>Finite Element Analysis &amp; Simulation Techniques Lab</b>	D	2	--	2	4	-	-	25	25(OR)	50	<b>3</b>
<b>Professional Elective Course – V</b>	E	3	--	--	3	40	60	-	-	100	<b>3</b>
<b>Professional Elective Course – VI</b>	E	3	--	--	3	40	60	-	-	100	<b>3</b>
<b>Open Elective Course – IV</b>	F	3	--	--	3	40	60	-	-	100	<b>3</b>
<b>Project</b>	G	--	--	6	6	-	-	50	50(OR)	100	<b>3</b>
		<b>14</b>	<b>--</b>	<b>10</b>	<b>24</b>	<b>160</b>	<b>240</b>	<b>100</b>	<b>100</b>	<b>600</b>	<b>19</b>

**ISE: Internal Sessional Examination**

**ESE: End Semester Examination**

**ICA: Internal Continuous Assessment**

<b>Professional Elective Course – V</b>	<b>Professional Elective Course – VI</b>	<b>Open Elective Course – IV</b>

