

**NORTH MAHARASHTRA UNIVERSITY,**

**JALGAON (M.S.)**

Bachelor of Engineering

(Electrical Engineering)

Faculty of Science and Technology



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

**REVISED SYLLABUS STRUCTURE**

**W.E.F. 2017 – 18**

## Subject Group Code and Subject Groups

Sr. No.	GROUP	Category	Breakup of Credits
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]	
<b>Total</b>			<b>171</b>

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

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		
Applied Physics – I	B	3	-	-	3	40	60	-	-	100	3
Applied Chemistry – I	B	3	0	-	3	40	60	-	-	100	3
Applied Mathematics – I	B	3	1	-	4	40	60	-	-	100	4
Communicative English	A	3	-	-	3	40	60	-	-	100	3
Introduction to Civil Engineering and Mechanics	C	3	-	-	3	40	60	-	-	100	3
Introduction to Electrical Engineering	C	3	-	-	3	40	60	-	-	100	3
Workshop Practice – I	C	-	-	2	2	-	-	25	-	25	1
Applied Science Lab - I	B	-	-	*2	2	-	-	25	-	25	1
Introduction to Civil Engineering and Mechanics Lab	C	-	-	2	2	-	-	25	25(or al)	50	1
Introduction to Electrical Engineering Lab	C	-	-	2	2	-	-	25	25(or al)	50	1
Communicative English Lab	A	-	-	2	2	-	-	25	25(or al)	50	1
		<b>18</b>	<b>1</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**

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

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		
Applied Physics – II	B	3	-	-	3	40	60	-	-	100	3
Applied Chemistry –II	B	3	0	-	3	40	60	-	-	100	3
Applied Mathematics – II	B	3	1	-	4	40	60	-	-	100	4
Introduction to ‘C’ Programming	C	3	-	-	3	40	60	-	-	100	3
Introduction to Mechanical Engineering and Engineering Drawing	C	3	-	-	3	40	60	-	-	100	3
Introduction to Electronics Engineering	C	3	-	-	3	40	60	-	-	100	3
Workshop Practice – II	C	-	-	2	2	-	-	25	-	25	1
Applied Science Lab - II	B	-	-	*2	2	-	-	25	-	25	1
Introduction to Mechanical Engineering and Engineering Drawing Lab	C	-	-	2	2	-	-	25	25(OR)	50	1
Introduction to ‘C’ Programming Lab	C	--	-	2	2	-	-	25	25(OR)	50	1
Introduction to Electronics Engineering Lab	C	-	-	2	2	-	-	25	25(OR)	50	1
		<b>18</b>	<b>2</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) (Electrical) (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		
Mathematics – III	B	3	1	-	4	40	60	-	-	100	4
Numerical Techniques	C	3	-	-	3	40	60	-	-	100	3
Electrical Circuit Analysis	C	3	-	-	3	40	60	-	-	100	3
Electrical Machine-I	D	3	-	-	3	40	60	-	-	100	3
Industrial Organization and Management	A	3	-	-	3	40	60	-	-	100	3
Electrical Circuit Analysis Lab	C	-	-	2	2	-	-	25	25(PR)	50	1
Electrical Machine-I Lab	D	-	-	2	2	-	-	25	25(PR)	50	1
Electrical Workshop Laboratory	D	1	-	2	3	-	-	25	25(OR)	50	2
		<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) (Electrical) (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		
Biology	B	3	1	-	4	40	60	-	-	100	4
Electrical Engineering Materials	C	3	-	-	3	40	60	-	-	100	3
Analog and Digital Electronics	D	3	-	-	3	40	60	-	-	100	3
Electrical Machine-II	D	3	-	-	3	40	60	-	-	100	3
Entrepreneurship Development	A	3	-	-	3	40	60	-	-	100	3
Electrical Engineering Materials Lab	C	-	-	2	2	-	-	-	-	-	1
Analog and Digital Electronics Lab	D	-	-	2	2	-	-	25	25(PR)	50	1
Electrical Machine-II Lab	D	-	-	2	2	-	-	25	25(PR)	50	1
Measurement and Instrumentation Laboratory	D	1	-	2	3	-	-	25	25(OR)	50	2
Environmental Studies*	H	-	-	-	-	-	80	20	-	100	-
		<b>16</b>	<b>1</b>	<b>8</b>	<b>25</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**

**\* Only for direct second year admitted students and these marks are not added in Total.**

**Syllabus Structure for Third Year Engineering (Semester – V) (Electrical) (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		
Power Electronics	D	3	-	-	3	40	60	-	-	100	3
Power System-I	D	3	-	-	3	40	60	-	-	100	3
Electromagnetic Field	D	3	-	-	3	40	60	-	-	100	3
Professional Elective Course – I	E	3	-	-	3	40	60	-	-	100	3
Open Elective Course – I	F	3	-	-	3	40	60	-	-	100	3
Power Electronics Lab	D	-	-	2	2	-	-	25	25(PR)	50	1
Power System-I Lab	D	-	-	2	2	-	-	25	25(OR)	50	1
Electronics Design Laboratory	D	-	-	2	2	-	-	25	25(OR)	50	1
Minor Project	G	-	-	6	6	-	-	50	-	50	3
Constitution of India		-	-								-
		<b>15</b>	<b>0</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 – I		Open Elective Course – I	
1		1	
2		2	
3		3	
4		4	

**Syllabus Structure for Third Year Engineering (Semester – VI) (Electrical) (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		
Control System	D	3	-	-	3	40	60	-	-	100	3
Microprocessor and Microcontroller	D	3	-	-	3	40	60	-	-	100	3
Power System-II	D	3	-	-	3	40	60	-	-	100	3
Professional Elective Course – II	E	3	-	-	3	40	60	-	-	100	3
Open Elective Course – II	F	3	-	-	3	40	60	-	-	100	3
Control System Lab	D	-	-	2	2	-	-	25	25(OR)	50	1
Microprocessor and Microcontroller Lab	D	-	-	2	2	-	-	25	25(PR)	50	1
Power System-II Lab	D	-	-	2	2	-	-	25	-	25	1
Minor Project (Stage -I)	G	-	-	6	6	-	-	50	25(OR)	75	3
		<b>15</b>	<b>0</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	
1		1	
2		2	
3		3	
4		4	

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) (Electrical) (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		
Power System Protection	D	3	-	-	3	40	60	-	-	100	3
Professional Elective Course -III	E	3	-	-	3	40	60	-	-	100	3
Professional Elective Course -IV	E	3	-	-	3	40	60	-	-	100	3
Open Elective Course – III	F	3	-	-	3	40	60	-	-	100	3
Power System Protection Lab	D	-	-	2	2	-	-	25	25(PR)	50	1
High Voltage Laboratory	D	1	-	2	3	-	-	25	25(OR)	50	2
Project (Stage -I)	G	-	-	12	12	-	-	50	50(OR)	100	6
Essence of Indian Traditional Knowledge		-	-	-	-	-	-	-	-	-	-
		<b>13</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**

Professional Elective Course – III		Professional Elective Course – IV		Open Elective Course – III	
1		1		1	
2		2		2	
3		3		3	
4		4		4	

**Syllabus Structure for Fourth Year Engineering (Semester – VIII) (Electrical) (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		
Electrical Drives	D	3	-	-	3	40	60	-	-	100	3
Professional Elective Course - V	E	3	-	-	3	40	60	-	-	100	3
Professional Elective Course -VI	E	3	-	-	3	40	60	-	-	100	3
Open Elective Course - IV	F	3	-	-	3	40	60	-	-	100	3
Electrical Drives Lab	D	-	-	2	2	-	-	25	25(PR)	50	1
Computer Aided Power System Analysis Laboratory	D	2	-	2	4	-	-	25	25(OR)	50	3
Project	G		-	6	6	-	-	50	50(OR)	100	3
		<b>14</b>	<b>0</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**

Professional Elective Course – V		Professional Elective Course – VI		Open Elective Course – IV	
1		1		1	
2		2		2	
3		3		3	
4		4		4	

