

JAGADAMBHA BAHUUDDESHIYA GRAMIN VIKAS SANSTH'S

JAGADAMBHA

COLLEGE OF ENGINEERING & TECHNOLOGY, YAVATMAL



Approved by A.I.C.T.E. & Government of Maharashtra, Affiliated to S.G.B. Amravati University, Amravati.

Dr. Hemant M. Baradkar

M.Tech. (Electronics), Ph.D. (E & TC. Engg.)
Principal

Dr. Shital A. Watile

M.Sc., Ph.D.
Secretary

JAGADAMBHA COLLEGE OF ENGINEERING AND TECHNOLOGY YAVATMAL

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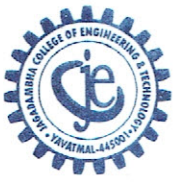
Criteria I

1.3.2 Average Percentage of courses that include experiential learning through project work/field work/internship during the Academic Year 2019-20

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1.3.2 Average Percentages of courses that include experiential learning through project work/field work/internship during the Academic Year 2019-20

SUMMARY SHEET

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**Dr. Hemant M. Baradkar**M.Tech. (Electronics), Ph.D. (E & TC. Engg.)
Principal**Dr. Shital A. Watile**M.Sc., Ph.D.
Secretary**1.3.2 Average percentage of courses that include experiential learning through project work/field work/internship during the Last five years****Academic Year 2019-20**

Sr. No.	Program name	Program code	Name of the Course that include experiential learning through project work/field work/internship	Course code	Year of offering
1	B.E. Electrical Engineering	112729310	Energy Resources & Generation	3EE03	2011-2012
2	B.E. Electrical Engineering	112729310	Electronic Devices & Circuits	3EE04	2011-2012
3	B.E. Electrical Engineering	112729310	Electrical Measurement & Instrumentation	3EE05	2011-2012
4	B.E. Electrical Engineering	112729310	Electronic Devices & Circuits – Lab	3EE07	2011-2012
5	B.E. Electrical Engineering	112729310	Electrical Measurement & Instrumentation-Lab	3EE08	2011-2012
6	B.E. Electrical Engineering	112729310	Electrical Machine-I	4EE01	2011-2012
7	B.E. Electrical Engineering	112729310	Analog & Digital Circuits	4EE03	2011-2012
8	B.E. Electrical Engineering	112729310	Electrical Machine-I-Lab	4EE06	2011-2012
9	B.E. Electrical Engineering	112729310	Microprocessor & Microcontroller	5EE02	2012-2013
10	B.E. Electrical Engineering	112729310	Electrical Machines-II	5EE03	2012-2013
11	B.E. Electrical Engineering	112729310	Free Elective-I : Electronic Test Instruments	5FEET5	2018-2019
12	B.E. Electrical Engineering	112729310	Electrical Machines-II – Lab	5EE09	2012-2013
14	B.E. Electrical Engineering	112729310	Electrical Power-I	6EE01	2012-2013
15	B.E. Electrical Engineering	112729310	Power Electronics	6EE03	2012-2013
16	B.E. Electrical Engineering	112729310	Computer Aided Machine Design	6EE04	2012-2013
17	B.E. Electrical Engineering	112729310	Free Elective-II : Non Conventional Energy Source	6FEEE05	2012-2013
18	B.E. Electrical Engineering	112729310	Electrical Energy Utilization	6EE06	2012-2013
19	B.E. Electrical Engineering	112729310	Power Electronics - Lab	6EE07	2012-2013
20	B.E. Electrical Engineering	112729310	Computer Aided Machine Design - Lab	6EE08	2012-2013
21	B.E. Electrical Engineering	112729310	Electrical Energy Utilization - Lab	6EE09	2012-2013
22	B.E. Electrical Engineering	112729310	Control System-II	7EE01	2013-2014
23	B.E. Electrical Engineering	112729310	Power System Operation & Control	7EE02	2013-2014
24	B.E. Electrical Engineering	112729310	Electrical Power-II	7EE03	2013-2014
25	B.E. Electrical Engineering	112729310	Switchgear & Protection	7EE04	2013-2014

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26	B.E. Electrical Engineering	112729310	Project & Seminar	7EE06	2013-2014
27	B.E. Electrical Engineering	112729310	Electrical Power-II - Lab	7EE07	2013-2014
28	B.E. Electrical Engineering	112729310	Switchgear & Protection - Lab	7EE08	2013-2014
29	B.E. Electrical Engineering	112729310	Power System Stability	8EE01	2013-2014
30	B.E. Electrical Engineering	112729310	High Voltage Engineering	8EE02	2013-2014
31	B.E. Electrical Engineering	112729310	Digital Signal Processing	8EE03	2013-2014
32	B.E. Electrical Engineering	112729310	Professional Elective-II : Electric Drives & Control	8EE04	2013-2014
33	B.E. Electrical Engineering	112729310	Digital Signal Processing - Lab	8EE06	2013-2014
34	B.E. Computer Engineering	112724510	Programing Methodology	3KE02	2011-2012
35	B.E. Computer Engineering	112724510	Electronic Devices and circuits	3KE03	2011-2012
36	B.E. Computer Engineering	112724510	Discret structure	3KE04	2011-2012
37	B.E. Computer Engineering	112724510	Computer organization	3KE05	2011-2012
38	B.E. Computer Engineering	112724510	Programing Methodology-Lab	3KE06	2011-2012
39	B.E. Computer Engineering	112724510	Computer Lab-I (Web Technology)	3KE08	2011-2012
40	B.E. Computer Engineering	112724510	Data structure	4KE01	2011-2012
41	B.E. Computer Engineering	112724510	Analog & Digital ICS	4KE02	2011-2012
42	B.E. Computer Engineering	112724510	Object oriented programing	4KE03	2011-2012
43	B.E. Computer Engineering	112724510	Assembly language programming	4KE04	2011-2012
44	B.E. Computer Engineering	112724510	Theory of computation	4KE05	2011-2012
45	B.E. Computer Engineering	112724510	Data structure-lab	4KE06	2011-2012
46	B.E. Computer Engineering	112724510	Analog & Digital ICS-lab	4KE07	2011-2012
47	B.E. Computer Engineering	112724510	Object oriented programing-lab	4KE08	2011-2012
48	B.E. Computer Engineering	112724510	Data Communication	5KE01	2012-2013
49	B.E. Computer Engineering	112724510	File structure and data processing	5KE02	2012-2013
50	B.E. Computer Engineering	112724510	System Software	5KE03	2012-2013
51	B.E. Computer Engineering	112724510	Free Elective-I (Production Mangement)	5FEME05	2012-2013
52	B.E. Computer Engineering	112724510	Communication skills	5KE06	2012-2013
53	B.E. Computer Engineering	112724510	System Software-lab	5KE07	2012-2013
54	B.E. Computer Engineering	112724510	Communication skills-lab	5KE09	2012-2013
55	B.E. Computer Engineering	112724510	Operating system	6KE01	2012-2013
56	B.E. Computer Engineering	112724510	Database System	6KE02	2012-2013
57	B.E. Computer Engineering	112724510	Computer Architecture	6KE04	2012-2013
58	B.E. Computer Engineering	112724510	Professional Ethics	6KE06	2012-2013
59	B.E. Computer Engineering	112724510	Operating system-lab	6KE07	2012-2013
60	B.E. Computer Engineering	112724510	Database System-lab	6KE08	2012-2013
61	B.E. Computer Engineering	112724510	Computer lab-II (Hardware)	6KE09	2012-2013
62	B.E. Computer Engineering	112724510	Computer Networks	7KE02	2013-2014
63	B.E. Computer Engineering	112724510	Microprocessor and Interfacing	7KE03	2013-2014
64	B.E. Computer Engineering	112724510	Mobile computing	7KE04	2013-2014
65	B.E. Computer Engineering	112724510	Professional Elective-I : Artificial Intelligiance	7KE05	2013-2014
66	B.E. Computer Engineering	112724510	Computer Networks-lab	7KE06	2013-2014
67	B.E. Computer Engineering	112724510	Microprocessor and Interfacing-lab	7KE07	2013-2014




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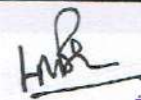
68	B.E. Computer Engineering	112724510	Mobile computing-lab	7KE08	2013-2014
69	B.E. Computer Engineering	112724510	Project and seminar	7KE09	2013-2014
70	B.E. Computer Engineering	112724510	Digital signal processing	8KE01	2013-2014
71	B.E. Computer Engineering	112724510	Embedded system	8KE02	2013-2014
72	B.E. Computer Engineering	112724510	Software engineering	8KE03	2013-2014
73	B.E. Computer Engineering	112724510	Digital signal processing-lab	8KE05	2013-2014
74	B.E. Computer Engineering	112724510	Project and seminar	8KE07	2013-2014
75	B.E.Elect.Tel.Comm.Engg	112737210	Object Oriented Programming	3ET2	2017-2018
76	B.E.Elect.Tel.Comm.Engg	112737210	Electronic Devices & Circuits	3ET3	2017-2018
77	B.E.Elect.Tel.Comm.Engg	112737210	Intrumentation & Sensors	3ET4	2017-2018
78	B.E.Elect.Tel.Comm.Engg	112737210	Electromagnetic Fields	3ET5	2017-2018
79	B.E.Elect.Tel.Comm.Engg	112737210	Environmental Science	3ET6	2017-2018
80	B.E.Elect.Tel.Comm.Engg	112737210	Object Oriented Programming Lab	3ETp7	2017-2018
81	B.E.Elect.Tel.Comm.Engg	112737210	Electronic Devices & Circuits Lab	3ETp8	2017-2018
82	B.E.Elect.Tel.Comm.Engg	112737210	Network Analysis	4ET2	2017-2018
83	B.E.Elect.Tel.Comm.Engg	112737210	Analog Electronics - I	4ET3	2017-2018
84	B.E.Elect.Tel.Comm.Engg	112737210	Communication Engineering-I	4ET5	2017-2018
85	B.E.Elect.Tel.Comm.Engg	112737210	Environmental Science	4ET6	2017-2018
86	B.E.Elect.Tel.Comm.Engg	112737210	Analog Electronics - I Lab	4ETp7	2017-2018
87	B.E.Elect.Tel.Comm.Engg	112737210	Digital Electronics Lab	4ETp8	2017-2018
88	B.E.Elect.Tel.Comm.Engg	112737210	Communication Engineering-I Lab	4ETp9	2017-2018
89	B.E.Elect.Tel.Comm.Engg	112737210	Analog Electronics-II	5ET1	2018-2019
90	B.E.Elect.Tel.Comm.Engg	112737210	Power Electronics & Drives	5ET2	2018-2019
91	B.E.Elect.Tel.Comm.Engg	112737210	Microprocessor & Microcontroller	5ET3	2018-2019
92	B.E.Elect.Tel.Comm.Engg	112737210	Communication Engineering-II	5ET4	2018-2019
93	B.E.Elect.Tel.Comm.Engg	112737210	Analog Electronics-II Lab	5ETp6	2018-2019
94	B.E.Elect.Tel.Comm.Engg	112737210	Power Electronics & Drives Lab	5ETp7	2018-2019
95	B.E.Elect.Tel.Comm.Engg	112737210	Microprocessor & Microcontroller Lab	5ETp8	2018-2019
96	B.E.Elect.Tel.Comm.Engg	112737210	Microcontroller Programming & Application	6ET1	2018-2019
97	B.E.Elect.Tel.Comm.Engg	112737210	Control System Engineering	6ET2	2018-2019
98	B.E.Elect.Tel.Comm.Engg	112737210	Digital Communication	6ET3	2018-2019
99	B.E.Elect.Tel.Comm.Engg	112737210	Digital Signal Processing	6ET4	2018-2019
100	B.E.Elect.Tel.Comm.Engg	112737210	Free Elective II: Jawa Programming	6FEKE5	2012-2013
101	B.E.Elect.Tel.Comm.Engg	112737210	Digital Communication Lab	6ETp7	2018-2019
102	B.E.Elect.Tel.Comm.Engg	112737210	Communication Skill Lab	6ETp9	2018-2019
103	B.E.Elect.Tel.Comm.Engg	112737210	VLSI Design	7ET1	2019-2020
104	B.E.Elect.Tel.Comm.Engg	112737210	Digital Image Processing	7ET2	2019-2020
105	B.E.Elect.Tel.Comm.Engg	112737210	Satellite & Optical Fiber Communication	7ET3	2019-2020
106	B.E.Elect.Tel.Comm.Engg	112737210	Industrial Management & Quality Control	7ET4	2019-2020
107	B.E.Elect.Tel.Comm.Engg	112737210	Professional Elective-I: Computer Organization	7ET5	2019-2020




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108	B.E.Elect.Tel.Comm.Engg	112737210	VLSI Design-Lab	7ETp6	2019-2020
109	B.E.Elect.Tel.Comm.Engg	112737210	Project	7ETp8	2019-2020
110	B.E.Elect.Tel.Comm.Engg	112737210	Seminar	7ETp9	2019-2020
111	B.E.Elect.Tel.Comm.Engg	112737210	UHF & Microwave	8ET1	2019-2020
112	B.E.Elect.Tel.Comm.Engg	112737210	Wireless Communication	8ET2	2019-2020
113	B.E.Elect.Tel.Comm.Engg	112737210	Data Communication Network	8ET3	2019-2020
114	B.E.Elect.Tel.Comm.Engg	112737210	Wireless Sensor Network	8ET4	2019-2020
115	B.E.Elect.Tel.Comm.Engg	112737210	UHF & Microwaves-Lab	8ETp5	2019-2020
116	B.E.Elect.Tel.Comm.Engg	112737210	Project	8ETp7	2019-2020
117	B.E. Mechanical Engineering	112761210	Mechanics of Materials	3ME02	2011-2012
118	B.E. Mechanical Engineering	112761210	Fluid Power -I	3ME03	2011-2012
119	B.E. Mechanical Engineering	112761210	Engineering Thermodynamics	3ME04	2011-2012
120	B.E. Mechanical Engineering	112761210	Manufacturing Process-I	3ME05	2011-2012
121	B.E. Mechanical Engineering	112761210	Mechanics of Material	3ME06	2011-2012
122	B.E. Mechanical Engineering	112761210	Fluid Power -I	3ME07	2011-2012
123	B.E. Mechanical Engineering	112761210	Manufacturing Process-I	3ME08	2011-2012
124	B.E. Mechanical Engineering	112761210	Basic Electrical Drives & Control	4ME01	2011-2012
125	B.E. Mechanical Engineering	112761210	Engineering Metallurgy	4ME02	2011-2012
126	B.E. Mechanical Engineering	112761210	Energy Conversion -I	4ME03	2011-2012
127	B.E. Mechanical Engineering	112761210	Manufacturing Process -II	4ME04	2011-2012
128	B.E. Mechanical Engineering	112761210	Machine Design & Drawing -I	4ME05	2011-2012
129	B.E. Mechanical Engineering	112761210	Basic Electrical Drives & Control-Lab	4ME06	2011-2012
130	B.E. Mechanical Engineering	112761210	Engineering Metallurgy-Lab	4ME07	2011-2012
131	B.E. Mechanical Engineering	112761210	Energy Conversion -I-Lab	4ME08	2011-2012
132	B.E. Mechanical Engineering	112761210	Manufacturing Process -II-Lab	4ME09	2011-2012
133	B.E. Mechanical Engineering	112761210	Machine Design & Drawing -I-Lab	4ME10	2011-2012
134	B.E. Mechanical Engineering	112761210	Production Technology	5ME01	2012-2013
135	B.E. Mechanical Engineering	112761210	Heat Transfer	5ME02	2012-2013




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136	B.E. Mechanical Engineering	112761210	Mesurment Systems	5ME03	2012-2013
137	B.E. Mechanical Engineering	112761210	Theory of Mechines - I	5ME04	2012-2013
138	B.E. Mechanical Engineering	112761210	Production Technology-Lab	5ME06	2012-2013
139	B.E. Mechanical Engineering	112761210	Heat Transfer-Lab	5ME07	2012-2013
140	B.E. Mechanical Engineering	112761210	Mesurment Systems-Lab	5ME08	2012-2013
141	B.E. Mechanical Engineering	112761210	Theory of Mechines - I-Lab	5ME09	2012-2013
142	B.E. Mechanical Engineering	112761210	Fluid Power - II	6ME01	2012-2013
143	B.E. Mechanical Engineering	112761210	Control System Engineering	6ME03	2012-2013
144	B.E. Mechanical Engineering	112761210	Theory of Mechines - II	6ME04	2012-2013
145	B.E. Mechanical Engineering	112761210	Free Elective-II: Power Supply System	6FEEEE05	2012-2013
146	B.E. Mechanical Engineering	112761210	Fluid Power - II-Lab	6ME07	2012-2013
147	B.E. Mechanical Engineering	112761210	Computer Software Applications - II-Lab	6ME08	2012-2013
148	B.E. Mechanical Engineering	112761210	Theory of Mechines - II-Lab	6ME09	2012-2013
149	B.E. Mechanical Engineering	112761210	Machine Design & Drawing - II	7ME01	2013-2014
150	B.E. Mechanical Engineering	112761210	Energy Conversion - II	7ME02	2013-2014
151	B.E. Mechanical Engineering	112761210	Industrial Management & Costing	7ME03	2013-2014
152	B.E. Mechanical Engineering	112761210	Automation Engineering	7ME04	2013-2014
153	B.E. Mechanical Engineering	112761210	Project & Seminar	7ME06	2013-2014
154	B.E. Mechanical Engineering	112761210	Machine Design & Drawing - II-Lab	7ME07	2013-2014
155	B.E. Mechanical Engineering	112761210	Energy Conversion - II-Lab	7ME08	2013-2014
156	B.E. Mechanical Engineering	112761210	Automation Engineering-Lab	7ME09	2013-2014
157	B.E. Mechanical Engineering	112761210	Professional Elective-I: Tool Engineering-Lab	7ME10	2013-2014
158	B.E. Mechanical Engineering	112761210	Professional Elective-II: Automobile Engineering	8ME01	2013-2014



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159	B.E. Mechanical Engineering	112761210	I.C. Engines	8ME03	2013-2014
160	B.E. Mechanical Engineering	112761210	Project & Seminar	8ME05	2013-2014
161	B.E. Mechanical Engineering	112761210	I.C. Engines-Lab	8ME07	2013-2014
162	B.E. Civil Engineering	112719110	Strength Of Materials	3CE02	2011-2012
163	B.E. Civil Engineering	112719110	Transportation Engineering-I	3CE03	2011-2012
164	B.E. Civil Engineering	112719110	Engineering Geology	3CE05	2011-2012
165	B.E. Civil Engineering	112719110	Strength Of Materials - Lab	3CE06	2011-2012
166	B.E. Civil Engineering	112719110	Transportation Engineering - Lab	3CE07	2011-2012
167	B.E. Civil Engineering	112719110	Engineering Geology - Lab	3CE09	2011-2012
168	B.E. Civil Engineering	112719110	Geotechnical Engineering-I	4CE01	2011-2012
169	B.E. Civil Engineering	112719110	Fluid Mechanics-I	4CE02	2011-2012
170	B.E. Civil Engineering	112719110	Theory Of Structures-I	4CE03	2011-2012
171	B.E. Civil Engineering	112719110	Surveying-I	4CE04	2011-2012
172	B.E. Civil Engineering	112719110	Reinforced Cement Concrete-I	4CE05	2011-2012
173	B.E. Civil Engineering	112719110	Geotechnical Engineering-I -Lab	4CE06	2011-2012
174	B.E. Civil Engineering	112719110	Fluid Mechanics-I - Lab	4CE07	2011-2012
175	B.E. Civil Engineering	112719110	Surveying-I - Lab	4CE08	2011-2012
176	B.E. Civil Engineering	112719110	Reinforced Cement Concrete-II	5CE01	2012-2013
177	B.E. Civil Engineering	112719110	Fluid Mechanics-II	5CE02	2012-2013
178	B.E. Civil Engineering	112719110	Building Planning AND CAD	5CE03	2012-2013
179	B.E. Civil Engineering	112719110	Surveying-II	5CE04	2012-2013
180	B.E. Civil Engineering	112719110	Communication Skills	5CE06	2012-2013
181	B.E. Civil Engineering	112719110	Fluid Mechanics-II-Lab	5CE07	2012-2013
182	B.E. Civil Engineering	112719110	Surveying-II-Lab	5CE09	2012-2013
183	B.E. Civil Engineering	112719110	Communication Skills-Lab	5CE10	2012-2013
184	B.E. Civil Engineering	112719110	Water Resources Engineering-I	6CE03	2012-2013
185	B.E. Civil Engineering	112719110	Transportation Engineering-II	6CE04	2012-2013
186	B.E. Civil Engineering	112719110	Estimating AND Costing	6CE06	2012-2013
187	B.E. Civil Engineering	112719110	Structural Design-I-Lab	6CE08	2012-2013
188	B.E. Civil Engineering	112719110	Estimating AND Costing-Lab	6CE09	2012-2013
189	B.E. Civil Engineering	112719110	Minor Project-Lab	6CE10	2012-2013
190	B.E. Civil Engineering	112719110	Theory Of Structures-II	7CE01	2013-2014
191	B.E. Civil Engineering	112719110	Geotechnical Engineering-II	7CE02	2013-2014
192	B.E. Civil Engineering	112719110	Design of Steel Structures	7CE03	2019-2020
193	B.E. Civil Engineering	112719110	Environmental Engineering-I	7CE04	2013-2014
194	B.E. Civil Engineering	112719110	Computer Aided Analysis & Design - Lab	7CE06	2019-2020
195	B.E. Civil Engineering	112719110	Geotechnical Engineering-II - Lab	7CE07	2013-2014
196	B.E. Civil Engineering	112719110	Structural Design-II - Lab	7CE08	2013-2014
197	B.E. Civil Engineering	112719110	Project and Seminar	7CE09	2013-2014
198	B.E. Civil Engineering	112719110	Water Resources Engineering-II	8CE01	2013-2014
199	B.E. Civil Engineering	112719110	Environmental Engineering-II	8CE02	2013-2014
200	B.E. Civil Engineering	112719110	Project Planning AND Management	8CE03	2013-2014



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201	B.E. Civil Engineering	112719110	Water Resources Engineering-II - Lab	8CE05	2013-2014
202	B.E. Civil Engineering	112719110	Environmental Engineering-II - Lab	8CE06	2013-2014
203	B.E. Civil Engineering	112719110	Project AND Seminar	8CE07	2013-2014



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Dr. Shital A. Watile

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1.3.2 Average percentage of courses that include experiential learning through project work/field work/internship during the Last five years

Academic Year 2019-20

Sr. No.	Program name	Program code	Name of the Course that include experiential learning through project work/field work/internship	Course code	Project Work	Field work	Internship
1	B.E. Electrical Engg.	112729310	Energy Resources & Generation	3EE03	✓		✓
2	B.E. Electrical Engg.	112729310	Electronic Devices & Circuits	3EE04	✓		✓
3	B.E. Electrical Engg.	112729310	Electrical Measurement & Instrumentation	3EE05	✓		✓
4	B.E. Electrical Engg.	112729310	Electronic Devices & Circuits – Lab	3EE07	✓		
5	B.E. Electrical Engg.	112729310	Electrical Measurement & Instrumentation-Lab	3EE08	✓		✓
6	B.E. Electrical Engg.	112729310	Electrical Machine-I	4EE01	✓		
7	B.E. Electrical Engg.	112729310	Analog & Digital Circuits	4EE03	✓		
8	B.E. Electrical Engg.	112729310	Electrical Machine-I-Lab	4EE06	✓		✓
9	B.E. Electrical Engg.	112729310	Microprocessor & Microcontroller	5EE02	✓		✓
10	B.E. Electrical Engg.	112729310	Electrical Machines-II	5EE03	✓		✓
11	B.E. Electrical Engg.	112729310	Free Elective-I : Electronic Test Instruments	5FEET5	✓		✓
12	B.E. Electrical Engg.	112729310	Electrical Machines-II – Lab	5EE09	✓		✓
14	B.E. Electrical Engg.	112729310	Electrical Power-I	6EE01	✓		
15	B.E. Electrical Engg.	112729310	Power Electronics	6EE03	✓		✓
16	B.E. Electrical Engg.	112729310	Computer Aided Machine Design	6EE04	✓		✓
17	B.E. Electrical Engg.	112729310	Free Elective-II : Non Conventional Energy Source	6FEEEE05	✓		✓
18	B.E. Electrical Engg.	112729310	Electrical Energy Utilization	6EE06	✓		✓
19	B.E. Electrical Engg.	112729310	Power Electronics - Lab	6EE07	✓		✓
20	B.E. Electrical Engg.	112729310	Computer Aided Machine Design - Lab	6EE08	✓		✓

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21	B.E. Electrical Engg.	112729310	Electrical Energy Utilization - Lab	6EE09	✓		
22	B.E. Electrical Engg.	112729310	Control System-II	7EE01	✓		
23	B.E. Electrical Engg.	112729310	Power System Operation & Control	7EE02	✓		✓
24	B.E. Electrical Engg.	112729310	Electrical Power-II	7EE03	✓		✓
25	B.E. Electrical Engg.	112729310	Switchgear & Protection	7EE04	✓		✓
26	B.E. Electrical Engg.	112729310	Project & Seminar	7EE06	✓		✓
27	B.E. Electrical Engg.	112729310	Electrical Power-II - Lab	7EE07	✓		✓
28	B.E. Electrical Engg.	112729310	Switchgear & Protection - Lab	7EE08	✓		✓
29	B.E. Electrical Engg.	112729310	Power System Stability	8EE01	✓		
30	B.E. Electrical Engg.	112729310	High Voltage Engg.	8EE02	✓		
31	B.E. Electrical Engg.	112729310	Digital Signal Processing	8EE03	✓		
32	B.E. Electrical Engg.	112729310	Professional Elective-II : Electric Drives & Control	8EE04	✓		✓
33	B.E. Electrical Engg.	112729310	Digital Signal Processing - Lab	8EE06	✓		✓
34	B.E. Computer Engg.	112724510	Programing Methodology	3KE02	✓		✓
35	B.E. Computer Engg.	112724510	Electronic Devices and circuits	3KE03	✓		✓
36	B.E. Computer Engg.	112724510	Discret structure	3KE04	✓		✓
37	B.E. Computer Engg.	112724510	Computer organization	3KE05	✓		✓
38	B.E. Computer Engg.	112724510	Programing Methodology-Lab	3KE06	✓		✓
39	B.E. Computer Engg.	112724510	Computer Lab-I (Web Technology)	3KE08	✓		✓
40	B.E. Computer Engg.	112724510	Data structure	4KE01	✓		
41	B.E. Computer Engg.	112724510	Analog & Digital ICS	4KE02	✓		
42	B.E. Computer Engg.	112724510	Object oriented programing	4KE03	✓		✓
43	B.E. Computer Engg.	112724510	Assembly language programming	4KE04	✓		
44	B.E. Computer Engg.	112724510	Theory of computation	4KE05	✓		✓
45	B.E. Computer Engg.	112724510	Data structure-lab	4KE06	✓		
46	B.E. Computer Engg.	112724510	Analog & Digital ICS-lab	4KE07	✓		
47	B.E. Computer Engg.	112724510	Object oriented programing-lab	4KE08	✓		✓
48	B.E. Computer Engg.	112724510	Data Communication	5KE01	✓		✓
49	B.E. Computer Engg.	112724510	File structure and data processing	5KE02	✓		✓
50	B.E. Computer Engg.	112724510	System Software	5KE03	✓		✓
51	B.E. Computer Engg.	112724510	Free Elective-I (Production Mangement)	5FEME05	✓		
52	B.E. Computer Engg.	112724510	Communication skills	5KE06	✓		✓
53	B.E. Computer Engg.	112724510	System Software-lab	5KE07	✓		✓
54	B.E. Computer Engg.	112724510	Communication skills-lab	5KE09	✓		✓
55	B.E. Computer Engg.	112724510	Operating system	6KE01	✓		✓
56	B.E. Computer Engg.	112724510	Database System	6KE02	✓		✓
57	B.E. Computer Engg.	112724510	Computer Architecture	6KE04	✓		✓



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58	B.E. Computer Engg.	112724510	Professional Ethics	6KE06	✓		
59	B.E. Computer Engg.	112724510	Operating system-lab	6KE07	✓		✓
60	B.E. Computer Engg.	112724510	Database System-lab	6KE08	✓		✓
61	B.E. Computer Engg.	112724510	Computer lab-II (Hardware)	6KE09	✓		✓
62	B.E. Computer Engg.	112724510	Computer Networks	7KE02	✓		✓
63	B.E. Computer Engg.	112724510	Microprocessor and Interfacing	7KE03	✓		✓
64	B.E. Computer Engg.	112724510	Mobile computing	7KE04	✓		✓
65	B.E. Computer Engg.	112724510	Professional Elective-I : Artificial Intelligence	7KE05	✓		✓
66	B.E. Computer Engg.	112724510	Computer Networks-lab	7KE06	✓		✓
67	B.E. Computer Engg.	112724510	Microprocessor and Interfacing- lab	7KE07	✓		✓
68	B.E. Computer Engg.	112724510	Mobile computing-lab	7KE08	✓		✓
69	B.E. Computer Engg.	112724510	Project and seminar	7KE09	✓		
70	B.E. Computer Engg.	112724510	Digital signal processing	8KE01	✓		
71	B.E. Computer Engg.	112724510	Embedded system	8KE02	✓		✓
72	B.E. Computer Engg.	112724510	Software Engg.	8KE03	✓		✓
73	B.E. Computer Engg.	112724510	Digital signal processing-lab	8KE05	✓		
74	B.E. Computer Engg.	112724510	Project and seminar	8KE07	✓		
75	B.E.Elect.Tel.Comm. Engg	112737210	Object Oriented Programming	3ET2	✓		
76	B.E.Elect.Tel.Comm. Engg	112737210	Electronic Devices & Circuits	3ET3	✓		✓
77	B.E.Elect.Tel.Comm. Engg	112737210	Intrumentation & Sensors	3ET4	✓		✓
78	B.E.Elect.Tel.Comm. Engg	112737210	Electromagnetic Fields	3ET5	✓		✓
79	B.E.Elect.Tel.Comm. Engg	112737210	Environmental Science	3ET6	✓		✓
80	B.E.Elect.Tel.Comm. Engg	112737210	Object Oriented Programming Lab	3ETp7	✓		✓
81	B.E.Elect.Tel.Comm. Engg	112737210	Electronic Devices & Circuits Lab	3ETp8	✓		✓
82	B.E.Elect.Tel.Comm. Engg	112737210	Network Analysis	4ET2	✓		
83	B.E.Elect.Tel.Comm. Engg	112737210	Analog Electronics - I	4ET3	✓		
84	B.E.Elect.Tel.Comm. Engg	112737210	Communication Engg.-I	4ET5	✓		
85	B.E.Elect.Tel.Comm. Engg	112737210	Environmental Science	4ET6	✓		
86	B.E.Elect.Tel.Comm. Engg	112737210	Analog Electronics - I Lab	4ETp7	✓		
87	B.E.Elect.Tel.Comm. Engg	112737210	Digital Electronics Lab	4ETp8	✓		



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88	B.E.Elect. Tel. Comm. Engg	112737210	Communication Engg.-I Lab	4ETp9	✓		✓
89	B.E.Elect. Tel. Comm. Engg	112737210	Analog Electronics-II	5ET1	✓		✓
90	B.E.Elect. Tel. Comm. Engg	112737210	Power Electronics & Drives	5ET2	✓		✓
91	B.E.Elect. Tel. Comm. Engg	112737210	Microprocessor & Microcontroller	5ET3	✓		✓
92	B.E.Elect. Tel. Comm. Engg	112737210	Communication Engg.-II	5ET4	✓		✓
93	B.E.Elect. Tel. Comm. Engg	112737210	Analog Electronics-II Lab	5ETp6	✓		✓
94	B.E.Elect. Tel. Comm. Engg	112737210	Power Electronics & Drives Lab	5ETp7	✓		
95	B.E.Elect. Tel. Comm. Engg	112737210	Microprocessor & Microcontroller Lab	5ETp8	✓		
96	B.E.Elect. Tel. Comm. Engg	112737210	Microcontroller Programming & Application	6ET1	✓		
97	B.E.Elect. Tel. Comm. Engg	112737210	Control System Engg.	6ET2	✓		
98	B.E.Elect. Tel. Comm. Engg	112737210	Digital Communication	6ET3	✓		
99	B.E.Elect. Tel. Comm. Engg	112737210	Digital Signal Processing	6ET4	✓		
100	B.E.Elect. Tel. Comm. Engg	112737210	Free Elective II: Jawa Programming	6FEKE5	✓		✓
101	B.E.Elect. Tel. Comm. Engg	112737210	Digital Communication Lab	6ETp7	✓		✓
102	B.E.Elect. Tel. Comm. Engg	112737210	Communication Skill Lab	6ETp9	✓		✓
103	B.E.Elect. Tel. Comm. Engg	112737210	VLSI Design	7ET1	✓		✓
104	B.E.Elect. Tel. Comm. Engg	112737210	Digital Image Processing	7ET2	✓		
105	B.E.Elect. Tel. Comm. Engg	112737210	Satellite & Optical Fiber Communication	7ET3	✓		✓
106	B.E.Elect. Tel. Comm. Engg	112737210	Industrial Management & Quality Control	7ET4	✓		✓
107	B.E.Elect. Tel. Comm. Engg	112737210	Professional Elective-I: Computer Organization	7ET5	✓		
108	B.E.Elect. Tel. Comm. Engg	112737210	VLSI Design-Lab	7ETp6	✓		
109	B.E.Elect. Tel. Comm. Engg	112737210	Project	7ETp8	✓		




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110	B.E.Elect.Tel.Comm. Engg	112737210	Seminar	7ETp9	✓		
111	B.E.Elect.Tel.Comm. Engg	112737210	UHF & Microwave	8ET1	✓		✓
112	B.E.Elect.Tel.Comm. Engg	112737210	Wireless Communication	8ET2	✓		✓
113	B.E.Elect.Tel.Comm. Engg	112737210	Data Communication Network	8ET3	✓		✓
114	B.E.Elect.Tel.Comm. Engg	112737210	Wireless Sensor Network	8ET4	✓		✓
115	B.E.Elect.Tel.Comm. Engg	112737210	UHF & Microwaves-Lab	8ETp5	✓		
116	B.E.Elect.Tel.Comm. Engg	112737210	Project	8ETp7	✓		
117	B.E. Mechanical Engg.	112761210	Mechanics of Materials	3ME02	✓		
118	B.E. Mechanical Engg.	112761210	Fluid Power -I	3ME03	✓		
119	B.E. Mechanical Engg.	112761210	Engineering Thermodynamics	3ME04	✓		
120	B.E. Mechanical Engg.	112761210	Manufacturing Process-I	3ME05	✓		✓
121	B.E. Mechanical Engg.	112761210	Mechanics of Material	3ME06	✓		✓
122	B.E. Mechanical Engg.	112761210	Fluid Power -I	3ME07	✓		✓
123	B.E. Mechanical Engg.	112761210	Manufacturing Process-I	3ME08	✓		✓
124	B.E. Mechanical Engg.	112761210	Basic Electrical Drives & Control	4ME01	✓		✓
125	B.E. Mechanical Engg.	112761210	Engineering Metallurgy	4ME02	✓		
126	B.E. Mechanical Engg.	112761210	Energy Conversion -I	4ME03	✓		
127	B.E. Mechanical Engg.	112761210	Manufacturig Process -II	4ME04	✓		
128	B.E. Mechanical Engg.	112761210	Machine Design & Drawing -I	4ME05	✓		
129	B.E. Mechanical Engg.	112761210	Basic Electrical Drives & Control-Lab	4ME06	✓		✓
130	B.E. Mechanical Engg.	112761210	Engineering Metallurgy-Lab	4ME07	✓		✓
131	B.E. Mechanical Engg.	112761210	Energy Conversion -I-Lab	4ME08	✓		✓
132	B.E. Mechanical Engg.	112761210	Manufacturig Process -II-Lab	4ME09	✓		✓
133	B.E. Mechanical Engg.	112761210	Machine Design & Drawing -I-Lab	4ME10	✓		✓
134	B.E. Mechanical Engg.	112761210	Production Technology	5ME01	✓		✓
135	B.E. Mechanical Engg.	112761210	Heat Transfer	5ME02	✓		✓
136	B.E. Mechanical Engg.	112761210	Mesurment Systems	5ME03	✓		✓
137	B.E. Mechanical Engg.	112761210	Theory of Mechines - I	5ME04	✓		✓
138	B.E. Mechanical Engg.	112761210	Production Technology-Lab	5ME06	✓		




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139	B.E. Mechanical Engg.	112761210	Heat Transfer-Lab	5ME07	✓		
140	B.E. Mechanical Engg.	112761210	Mesurment Systems-Lab	5ME08	✓		
141	B.E. Mechanical Engg.	112761210	Theory of Mechines - I-Lab	5ME09	✓		
142	B.E. Mechanical Engg.	112761210	Fluid Power - II	6ME01	✓		✓
143	B.E. Mechanical Engg.	112761210	Control System Engg.	6ME03	✓		✓
144	B.E. Mechanical Engg.	112761210	Theory of Mechines - II	6ME04	✓		✓
145	B.E. Mechanical Engg.	112761210	Free Elective-II: Power Supply System	6FEEEE05	✓		✓
146	B.E. Mechanical Engg.	112761210	Fluid Power - II-Lab	6ME07	✓		
147	B.E. Mechanical Engg.	112761210	Computer Software Applications - II-Lab	6ME08	✓		
148	B.E. Mechanical Engg.	112761210	Theory of Mechines - II-Lab	6ME09	✓		
149	B.E. Mechanical Engg.	112761210	Machine Design & Drawing - II	7ME01	✓		✓
150	B.E. Mechanical Engg.	112761210	Energy Conversion - II	7ME02	✓		✓
151	B.E. Mechanical Engg.	112761210	Industrial Management & Costing	7ME03	✓		✓
152	B.E. Mechanical Engg.	112761210	Automation Engg.	7ME04	✓		✓
153	B.E. Mechanical Engg.	112761210	Project & Seminar	7ME06	✓		✓
154	B.E. Mechanical Engg.	112761210	Machine Design & Drawing - II-Lab	7ME07	✓		✓
155	B.E. Mechanical Engg.	112761210	Energy Conversion - II-Lab	7ME08	✓		✓
156	B.E. Mechanical Engg.	112761210	Automation Engg.-Lab	7ME09	✓		✓
157	B.E. Mechanical Engg.	112761210	Professional Elective-I: Tool Engg.-Lab	7ME10	✓		✓
158	B.E. Mechanical Engg.	112761210	Professional Elective-II: Automobile Engg.	8ME01	✓		
159	B.E. Mechanical Engg.	112761210	I.C. Engines	8ME03	✓		
160	B.E. Mechanical Engg.	112761210	Project & Seminar	8ME05	✓		
161	B.E. Mechanical Engg.	112761210	I.C. Engines-Lab	8ME07	✓		
162	B.E. Civil Engg.	112719110	Strength Of Materials	3CE02	✓		
163	B.E. Civil Engg.	112719110	Transportation Engg.-I	3CE03	✓		✓
164	B.E. Civil Engg.	112719110	Engineering Geology	3CE05	✓		✓
165	B.E. Civil Engg.	112719110	Strength Of Materials - Lab	3CE06	✓		✓




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166	B.E. Civil Engg.	112719110	Transportation Engg. - Lab	3CE07	✓		
167	B.E. Civil Engg.	112719110	Engineering Geology - Lab	3CE09	✓		
168	B.E. Civil Engg.	112719110	Geotechnical Engg.-I	4CE01	✓		
169	B.E. Civil Engg.	112719110	Fluid Mechanics-I	4CE02	✓		
170	B.E. Civil Engg.	112719110	Theory Of Structures-I	4CE03	✓		
171	B.E. Civil Engg.	112719110	Sureveying-I	4CE04	✓	✓	
172	B.E. Civil Engg.	112719110	Reinforced Cement Concrete-I	4CE05	✓		✓
173	B.E. Civil Engg.	112719110	Geotechnical Engg.-I -Lab	4CE06	✓		✓
174	B.E. Civil Engg.	112719110	Fluid Mechanics-I - Lab	4CE07	✓		✓
175	B.E. Civil Engg.	112719110	Surveying-I - Lab	4CE08	✓	✓	✓
176	B.E. Civil Engg.	112719110	Reinforced Cement Concrete-II	5CE01	✓		
177	B.E. Civil Engg.	112719110	Fluid Mechanics-II	5CE02	✓		
178	B.E. Civil Engg.	112719110	Building Planning AND CAD	5CE03	✓		✓
179	B.E. Civil Engg.	112719110	Surveying-II	5CE04	✓	✓	✓
180	B.E. Civil Engg.	112719110	Communication Skills	5CE06	✓		✓
181	B.E. Civil Engg.	112719110	Fluid Mechanics-II-Lab	5CE07	✓		✓
182	B.E. Civil Engg.	112719110	Surveying-II-Lab	5CE09	✓	✓	
183	B.E. Civil Engg.	112719110	Communication Skills-Lab	5CE10	✓		
184	B.E. Civil Engg.	112719110	Water Resources Engg.-I	6CE03	✓	✓	
185	B.E. Civil Engg.	112719110	Transportation Engg.-II	6CE04	✓		
186	B.E. Civil Engg.	112719110	Estimating AND Costing	6CE06	✓		
187	B.E. Civil Engg.	112719110	Structural Design-I-Lab	6CE08	✓		✓
188	B.E. Civil Engg.	112719110	Estimating AND Costing-Lab	6CE09	✓		✓
189	B.E. Civil Engg.	112719110	Minor Project-Lab	6CE10	✓	✓	✓
190	B.E. Civil Engg.	112719110	Theory Of Structures-II	7CE01	✓		✓
191	B.E. Civil Engg.	112719110	Geotechnical Engg.-II	7CE02	✓		
192	B.E. Civil Engg.	112719110	Design of Steel Structures	7CE03	✓		
193	B.E. Civil Engg.	112719110	Environmental Engg.-I	7CE04	✓		
194	B.E. Civil Engg.	112719110	Computer Aided Analysis & Design - Lab	7CE06	✓		✓
195	B.E. Civil Engg.	112719110	Geotechnical Engg.-II - Lab	7CE07	✓		✓
196	B.E. Civil Engg.	112719110	Structural Design-II - Lab	7CE08	✓		✓
197	B.E. Civil Engg.	112719110	Project and Seminar	7CE09	✓		✓
198	B.E. Civil Engg.	112719110	Water Resources Engg.-II	8CE01	✓	✓	
199	B.E. Civil Engg.	112719110	Environmental Engg.-II	8CE02	✓	✓	
200	B.E. Civil Engg.	112719110	Project Planning AND Management	8CE03	✓		✓
201	B.E. Civil Engg.	112719110	Water Resources Engg.-II - Lab	8CE05	✓	✓	✓
202	B.E. Civil Engg.	112719110	Environmental Engg.-II - Lab	8CE06	✓		
203	B.E. Civil Engg.	112719110	Project AND Seminar	8CE07	✓		




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5. Measurement of unknown Inductance using Maxwell Bridge/Hay Bridge/Anderson Bridge
6. Measurement of Unknown Capacitance by Desauty Bridge/Schering Bridge
7. Measurement of frequency using Wien Bridge
8. Extension of range of ammeter using shunt/CT.
9. Extension of range of voltmeter using multiplier/PT.
10. Calibration of Wattmeter by Phantom loading
11. Calibration of energy meter to detect the error in it.
12. Measurement of active & reactive power measurement in 1 phase / 3 phase circuit.
13. Measurement of rotational speed using stroboscope
14. Conversion of non electrical quantity into its equivalent electrical quantity using proper transducer.
15. Compare the accuracy, preciseness, sensitivity of Analog & Digital Measuring Instruments.

4EP07 CONTROL SYSTEM LAB

Minimum eight experiments based on the syllabus content of 4EP03Control System. The intensive list of experiment is given below.

1. Study of Potentiometer
2. Study of A.C. Synchro and its characteristics
3. Determination of Transfer Function of D.C. Generator
4. Determination Of Transfer Function of D.C.Servomotor and Its Characteristics
5. Performance Characteristics of a D.C. Motor Angular Position Control System
6. Determination Of Frequency Response of Given R-C Network
7. Determination Of Transfer Function of A.C. Tacho-Generator
8. Experimental Study Of The Operating Characteristics of a Small Stepper Motor and Its Controller
9. Study Closed Loop PI Controller System and Its Time Response to Different Input.
10. Experimental Study of Position Control of DC Motor using Arduino
11. Experimental Study of Time Domain Analysis of Second Order Control System
12. Study AC Position Control System

4EE09/ 4EP08 /4EX08 ANALOG AND DIGITAL CIRCUIT LAB

Minimum eight experiments based on the syllabus content of 4EP05Analog & Digital Circuit. The intensive list of experiment is given below.

1. To Plot Frequency Response Of Non-Inverting Mode Of Op-Amp Using IC741 and Determine the Bandwidth & Maximum Gain
2. To Plot Frequency Response Of Inverting Mode Of Op-Amp Using IC741 and Determine the Bandwidth & Maximum Gain
3. To Perform Op-Amp as Differentiator Using IC741 .
4. Design The Circuit for Supplying 5V,25mA As A Low Voltage Regulator Using IC 723
5. Verification Of Truth Table Of Various Logic Gates Using ICs
6. To Study and Verify The Operation Of SR and MS JK Flip Flop
7. To Verify The Operation Of Multiplexer Using IC74153.
8. To Design And Verify Function Of Decade Counter using IC 7490
9. To Verify The Truth Table Of 4 Bit Comparator
10. To Perform Op-Amp As Integrator Using IC741
11. A stable Multi-vibrator Using IC 555timer
12. To Study And Verify The Operation Of Half-Adder And Full-Adder.

4EE10/ 4EP09 /4EX09 ELECTRONIC TECHNOLOGY LAB

Perform Minimum Eight experiments / demonstration based on the following content and prepare the report as a term work for this laboratory.

- **Study of electronic Components:** Identification of components, name, types, symbol, size, rating and application.
- **Handling Electronic Components:** Finding values and testing (using DMM), test working condition, fault detection.
- **Working with breadboards:** understanding the breadboards for component mounting, working with small circuits on breadboard

Unit IV : Load flow studies: Load flow problem, classification of buses, network modelling, Y-bus matrix, load flow equation, Gauss-Seidel and Newton-Raphson methods, and comparison of these methods.

Unit V :

Mechanical design: Materials used, types of insulators, comparison of pin type and suspension type insulators, voltage distribution and string efficiency, methods of increasing string efficiency, grading rings and arcing horns. Line supports for LV, HV and EHV, sag calculation.

Unit VI :

Underground cables: Material used for conductor & insulation, different types of cables and their manufacture, parameters of underground cable, grading of cable.

Text Book: C.L.Wadhwa Engineering Electrical Power Systems, , 6th Edition 2010, New Age International Pub.

Reference Books:

- 1.Power System Engineering by D.P.Kothari, I.J.Nagrath TMH 2nd edition, 9th reprint 2010
- 2.Power System Analysis, N.V.Ramana, PEARSON education, 2010.
- 3.Power System Analysis, Arthur R. Bergen, Vijay Vittal,2nd Edition, 2009, Pearson Education.

4EE04/ 4EP05 /4EX04

ANALOG AND DIGITAL CIRCUITS

Course Outcomes:

After completing the course, students will be able to

1. Explain the principles of operational amplifiers, parameters of op-amp
2. Illustrate the linear and nonlinear applications of op-amp
3. Demonstrate the knowledge of Voltage regulator and Timer ICs
4. Describe the working of Logic families and their applications.
5. Demonstrate the knowledge of combinational and sequential circuits and its application

Unit I:

Introduction to IC's: Operation amplifier; Block schematic internal circuits, Level shifting, overload protection, study of IC 741 op-amp, Measurement of op-amp parameter.

Unit II:

Linear and Non-linear Application of Op-amp: Inverting and non inverting amplifiers, voltage follower, integrator, differentiator differential amplifier, op amp as adder subtractor, op amp as a log and antilog amplifier

Sinusoidal RC-phase shift and Wein bridge oscillators, clipping, clamping and comparator circuits using op-amps.

Unit III:

Other linear IC's : Block schematic of regulator IC 723, and its applications, study of 78XX, 79XX and its applications, SMPS, Block schematic of timer IC 555 and its applications as a timer, a stable, mono stable, bistable multivibrator and other applications, Operation of phase lock loop system and IC 565 PLL, its application.

Unit IV:

Basic Logic Circuits : Logic gate characteristics, NMOS inverter, propagation delay, NMOS logic gate, CMOS inverter, CMOS logic gates, BJT inverter, TTL, NAND gate, TTL output, state TTL logic families, ECL circuits, composition logic families.

Unit V:


Combinational Digital Circuits: Standard gate assemblies, Binary adder, Arithmetic functions, Digital comparator, Parity check generator, Decoder / demultiplexer, Data selector / multiplexer, Encoder

Unit VI:

Sequential Circuits and Systems: Bistable Latch, Flip-Flop clocked SR,J-K, T, D type shift Registers, counter. Design using flip-flops, Ripple and synchronous types, application of counters

Text Book: Millman, Microelectronics, 2nd Ed., McGraw Hill.




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DEPARTMENT OF ELECTRICAL ENGINEERING
JAGADAMBHA COLLEGE OF ENGINEERING & TECHNOLOGY,
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Sant Gadge Baba Amravati University, Amravati



CERTIFICATE

This is to certify that the dissertation entitled **“Digital Notice Board”** is a bonafide work done under our supervision and is submitted to Sant Gadge Baba Amravati University, Amravati in partial fulfillment of the requirement for the Bachelor of Engineering in Electrical.

Submitted by

Pallavi S Sonone

Arvind D. Rathod
Sanket D. Bhabute

Piyush S Uike
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Project Guide
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2019-2020

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'Digital Notice Board'

Abstract

In the present era, the usage of paper has been increases and the cost of paper also increases. In the offices, schools, colleges there are number of notices has been made and stick on the notice board but sometimes no one can see them. Therefore to reduce the usage of paper, time consumption of printing of paper and also to save the nature by cutting of trees for making the paper, digital notice board is used.

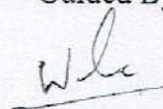
In the digital notice board, Raspberry PI, GSM SIM 900A and Monitor is used. Raspberry PI has the speed of the processor is 700MHz and therefore it will work just like a small computer and this is the heart of the project. GSM SIM 900A is used to receive the message and also monitor is used to display the notice on the monitor.

When the message is sent to the GSM SIM 900A , it gives the command to the Raspberry PI and Raspberry PI also give the command to the monitor to show the output on the screen of the monitor which is message sent by the sender and it acts as a digital notice board.

Group Members:


- 1) Piyush S. Uikey
- 2) Arvind Rathod
- 3) Pallavi Sonone
- 4) Sanket K. Bahute
- 5) Karan R. Jiddewar

Guided By



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CERTIFICATE

This is to certify that the dissertation entitled "**Wireless Agricultural Multipurpose Robot Using Solar Panel**" is a bonafide work done under our supervision and is submitted to Sant Gadge Baba Amravati University, Amravati in partial fulfillment of the requirement for the Bachelor of Engineering in Electrical.

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Ku. Mayuri V. Kohar
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WIRELESS AGRICULTURAL MULTIPURPOSE ROBOT USING SOLAR PANEL

Abstract

In recent years, robotics in agriculture sector with its implementation based on precision agriculture concept is the newly emerging technology. Its working is based on the precision agriculture which enables efficient seed sowing at optimal depth and it also tests the soil humidity at optimal distances between crops and their rows, specific for each crop type. This device also includes the two spray nozzles with an automatically adjustable spraying angle, distance sensors, all mounted on a pan tilt unit, for the ploughing purpose this device has ploughing blades and these blades will be operate at optimal depth of the land.

Keywords: Agricultural robot, Precision spraying, Seeding, Ploughing


Presented By:

1. Mayuri Kohar
2. Mrunal Dambhe
3. Dipak Bhalmé
4. Avadhut Suryavanshi



Guided By:

Prof. P.H. Kadam



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Unit IV: Subroutines & Macros (Hours: 7)
The 8086 stack segment and stack related instructions. 8086 I/O Address space. Subroutines and related instructions, Parameter passing, Concept of Macros, Status saving on stack. Concept of recursion at assembly program level. 8086 Programming using subroutines, recursion and macros.

Unit V: 8086 Interrupt (Hours: 7)
8086 Interrupts types, priority and instructions. Interrupt vector table, External hardware-interrupt interface signals & interrupts sequence. Software interrupts. Non-maskable interrupts. 8086 microprocessor interrupt programming.

Unit VI: Internet of Things (IoT) (Hours: 6)
Internet of things: An overview, IoT conceptual framework, IoT Architectural View, Technology behind IoT, Sources of IoT, M2M communication, Examples of IoT.

Text Book:

1. A. K. Ray & K. M. Bhurchandi: Advanced Microprocessors & Peripherals, Third Edition (TMH).
2. Raj Kamal: Internet of Things, Architecture and Design Principals, McGraw Hill Education (India) Private Limited

Reference Books:

1. W. A. Triebel & Avatar Singh: The 8088/8086 Microprocessors (4e) (PHI / Pearson Education)
2. Liu & Gibson: The 8088/8086 Microprocessor Architecture Programming and Interface (6/e) (PHI)

4KS05 THEORY OF COMPUTATION

Course Pre-requisite: Discrete Mathematics, Data Structures

Course Objectives:

1. To understand different automata theory and its operation.
2. To understand mathematical expressions for the formal languages
3. To study computing machines and comparing different types of computational models
4. To understand the fundamentals of problem decidability and Un-Decidability

Course Outcomes: On completion of the course, the students will be able to

1. To construct finite state machines to solve problems in computing.
2. To write regular expressions for the formal languages.
3. To construct and apply well defined rules for parsing techniques in compiler
4. To construct and analyze Push Down, Turing Machine for formal languages
5. To express the understanding of the Chomsky Hierarchy.
6. To express the understanding of the decidability and un-decidability problems.

Unit I: Finite State Machines (Hours: 8)
Alphabet, String, Formal and Natural Language, Operations, Definition and Design DFA (Deterministic Finite Automata), NFA (Non Deterministic Finite Automata), Equivalence of NFA and DFA: Conversion of NFA into DFA, Conversion of NFA with epsilon moves to NFA, Minimization Of DFA, Definition and Construction of Moore and Mealy Machines, Inter-conversion between Moore and Mealy Machines. Minimization of Finite Automata. (Construction of Minimum Automaton)

Unit II: Regular Expression and Regular Grammar (Hours: 8)
Definition and Identities of Regular Expressions, Construction of Regular Expression of the given Language, Construction of Language from the RE, Conversion of FA to RE using Arden's Theorem, Inter-conversion RE to FA, Pumping Lemma for RL, Closure properties of RLs (proofs not required), Regular grammar, Equivalence of RG (RLG and LLG) and FA.


Unit III: Context Free Grammar and Languages (Hours: 8)
Introduction, Formal Definition of Grammar, Notations, Derivation Process: Leftmost Derivation, Rightmost Derivation, Derivation Trees, Construction of Context-Free Grammars and Languages, Pumping Lemma for CFL, Simplification of CFG, Normal Forms (CNF and GNF), Chomsky Hierarchy.

Unit IV: Pushdown Automata (Hours: 8)
Introduction and Definition of PDA, Construction of PDA, Acceptance of CFL, Equivalence of CFL and PDA: Inter-conversion, Introduction of DCFL and DPDA, Enumeration of properties of CFL, Context Sensitive Language, Linear Bounded Automata.

Unit V: Turing Machines (Hours: 8)
Formal definition of a Turing Machine, Design of TM, Computable Functions, Church's hypothesis, Counter machine, Variants of Turing Machines: Multi-tape Turing machines, Universal Turing Machine.

Unit VI: Decidability and Un-Decidability (Hours: 8)
Decidability of Problems, Halting Problem of TM, Un-Decidability: Recursive enumerable language, Properties of recursive & non-recursive enumerable languages, Post Correspondence Problem, Introduction to Recursion Theory




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Text Books:

1. Hopcraft H.E. & Ullman J: Introduction to Automata Theory, Languages and Computation
2. Peter Linz: An Introduction to Formal Languages and Automata

Reference Books:

1. Rajesh K. Shukla: Theory of Computation, CENGAGE Learning, 2009.
2. K V N Sunitha and N Kalyani: Formal Languages and Automata Theory, McGraw Hill, 2010
3. Lewis H.P. and Papadimitriou C.H.: Elements of Theory of Computation
4. Mishra & Chandrashekharan: Theory of Computation
5. C.K.Nagpal: Formal Languages and Automata Theory, Oxford University Press, 2011.
6. Vivek Kulkarni : Theory of Computation, OUP India, 2013.

4KS06 DATA COMMUNICATION & NETWORKING LAB

Course Pre-requisite: Computer and Data Communication Requirements

Course Objectives:

1. To understand the working principle of various communication protocols
2. To understand and analyze the signal flow in a digital communication system.
3. To analyze error performance of a digital communication system in presence of noise and other interferences.
4. To evaluate the errors using various error detection & correction techniques.
5. To understand network based protocols in data communication and networking.

Course Outcomes : On completion of the course, the students will be able to

1. Analyze performance of various communication protocols
2. Implement Configure various network protocols.
3. Compare IP Address classes of networks

List of Experiments:

This is a sample list of Experiments; **minimum 12 experiments** are to be performed covering the entire syllabus. At least two experiments should be beyond syllabi based on learning of syllabi (Apply)

1. To study various LAN topologies and their creation using network devices, cables and computers. .
2. To connect the computers in Local Area Network.
3. Familiarization with Networking Components and devices: LAN Adapters, Hubs, Switches, Routers etc.
4. Write a program of bit stuffing used by Data Link Layer
5. Write a program to implement CRC(Cyclic Redundancy Check)
6. Write a program to implement Checksum
7. Write a program to implement Sliding window
8. Configure Internet connection and use IP-Config, PING / Tracer and Net stat utilities to debug the network issues.
9. Configuration of TCP/IP Protocols in Windows and Linux.
10. Transfer files between systems in LAN using FTP Configuration, install Print server in a LAN and share the printer in a network.
11. Write a C Program to determine if the IP Address is in Class A, B, C, D, or E
12. Write a C Program to translate Dotted Decimal IP Address into 32 Bit Address.
13. Configure Host IP, Subnet Mask and Default Gateway in a System in LAN(TCP/IP Configuration)

4KS07 OPERATING SYSTEM - LAB

Course Pre-requisite: Basic computer programming

Course Objectives:

1. To make students aware of the kernel and shell structure of the operating systems.
2. To make students aware of the purpose, structure and functions of operating systems
3. To equip students with understanding of the various scheduling algorithms in OS.
4. To make students aware of understanding of memory management in different OS.

Course Outcomes : On completion of the course, the students will be able to

1. Explain memory management issues like external fragmentation, internal fragmentation.
2. Illustrate multithreading and its significance.
3. List various protection and security mechanisms of OS.
4. Analyze and solve the scheduling algorithms.
5. Analyze the deadlock situation and resolve it.
6. Compare various types of operating systems



[Handwritten Signature]

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CERTIFICATE

This is to certify that this Project Report titled

"E-FARMING"

By

Miss. Komal Rajurkar

Miss. Jagruti Sharma

Miss. Raksha Darak

Miss. Pooja Gulhane

of 4th year (B.E.) during the academic year 2019-2020 is submitted for partial fulfillment for requirement of the award of the degree of Bachelor of Engineer in Computer Engineering under Sant Gadge Baba Amravati University, Amravati

Prof. A.V. Mahalle
(Guided by)

Prof. R. S. Sawant
(Project Incharge)

Prof. S. A. Murab
(Head of Department)



Department of Computer Engineering
Jagadamba College of Engineering & Technology,
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Session 2019-2020



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ABSTRACT

The main objective of this project is to build a website which will help farmers from Indian villages to sell their products to different cities. Here if suppose some village farmers want to use this facility and want to learn how is it possible and how they can use e-farming to sell their products then if they have knowledge of computer then they can directly register in the site and sell their product otherwise they can contact company's computer professional who will schedule classes to teach them basics of computer and internet like how they can open the site and register to it and sell their products online etc. On the other side, wholesaler from town can also register and buy products as per their needs.



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Course Outcomes:

- After successfully completing the course, the students will be able to
1. Comprehend the knowledge of diode and its applications in rectifier and regulator circuits.
 2. Understand basics of BJT, JFET, MOSFET, UJT and their operational parameters.
 3. Understand feedback concept, topologies and their applications.
 4. Implement and analyze various electronic circuits.

Subject: Electronic Devices & circuits		L
Unit-1	PN junction diode: Formation of p-n junction, biasing the diode, current equation and V-I characteristics of diode, static and dynamic resistance, Analysis of Half Wave Rectifier (HWR), Full Wave Rectifier (FWR), introduction to filters C, L, LC and CLC filters, working of diode as a Switch, Zener diode and its application as voltage regulator.	06
Unit-2	Waveshaping: Analysis of RC low pass, and high pass filters for Sinusoidal, Step, Pulse, Square signal, analysis of clipping and clamping circuits using diodes.	06
Unit-3	Bipolar Junction Transistors: Operation of PNP and NPN transistor , CB, CE and CC configurations with characteristics and parameters, transistor as a switch, Transistor switching times, dc load line, transistor biasing methods, bias stability, Introduction to voltage divider biased CE amplifiers using h-parameter model.	06
Unit-4	Feedback amplifiers: Feedback concept, effects of negative feedback, basic feedback topologies Sinusoidal oscillators: Barkhausen's criteria, Hartley, Colpitts, RC Phase shift, Wein bridge and crystal oscillators.	06
Unit-5	Multistage Amplifiers: Need of multistage, direct coupled amplifier, RC coupled amplifier, transformer coupled amplifier, emitter follower, Darlington emitter follower, bootstrapping principle (analysis not expected).	06
Unit-6	JFET: Theory, construction and characteristics: parameters (μ , g_m & r_d) MOSFET: Theory, construction and characteristics of enhancement & depletion type MOSFET. UJT: Theory, construction and characteristics; UJT as relaxation oscillator.	06
Total		36

Text Books:

1. David Bell: Electronic Devices and Circuits, Oxford University Press, 2010.
2. Milliman and Halkias: Integrated Electronics, Tata McGraw Hill, New Delhi.

References:

1. Robert L. Boylestad, "Electronic Devices and Circuit theory", Publ. Pearson Education.
2. Floyd, "Electron Devices" Pearson Asia 5th Edition, 2001.
3. Donald A Neamen, "Electronic Circuit Analysis and Design" Tata McGraw Hill, 3rd Edition, 2003.

3ETC06 ELECTRONIC DEVICES AND CIRCUITS - LAB

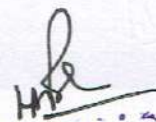
Course Requisite:

1. Engineering Physics
2. 3ETC02 Electronic Devices and Circuits

Course Objectives:

1. To verify characteristics of various semiconductor devices.
2. To determine and verify various performance parameters of electronic devices and circuits.
3. To provide basic experimental exposure about operation and applications of electronic devices.




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CERTIFICATE

This is to certify that the dissertation entitled **"Bus Safety System For School Children By Using RFID And GSM Modem"** is a bonafide work done under our supervision and is submitted to Sant Gadge Baba Amravati University, Amravati in partial fulfillment of the requirement for the Bachelor of Engineering in Electronics & Telecommunication.

Submitted by

Mr. Amol N. Raut

Miss. Vaishnavi P. Jamode

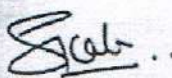
Miss. Vaishnavi R. Deshmukh

Mr. Vikas S. Jambhulkar


Prof. P. R. PATIL

Guide

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Prof. S. D. Kale

Project Co-ordinator
E&TC Engg. Dept.


Dr. A. D. Shelotkar

H.O.D.

E&TC Engg. Dept.


Dr. H. M. Baradkar

Principal,

J.E. Yavatmal


Dr. Hemant M. Baradkar
Principal

Jagadamba College of Engineering &
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ABSTRACT

Millions of children need to commute between homes to school every day. Safer transportation of school children has been a critical issue as it is often observed that, kids find themselves locked in the school bus at the bus stop after going to school, they miss the bus, or ride the wrong bus with no way to track them. This project intends to find yet another solution to solve this problem by developing a bus safety system that will control the entry and exit of students from the buses through an energy efficient methodology. The proposed system will control the entry and exit of students to and from the bus using RFID (Radio Frequency Identification) and GSM technologies to ensure the entering and exiting of all students to and from the school bus in a safer manner. The process, does not require any additional action by the student and drivers. The system will do all the process and allow the student to be tracked while entering and leaving the bus. If the bus journey is successful from the source to destination, it will send an SMS to the management to inform its departure and arrival

Keywords: – Bus Safety System, RFID (Radio Frequency Identification), GSM modem




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- c) Electric discharge Machining - Types die-sinking, wire cut EDM, Mechanism of material removal, process parameters, advantages and applications. (8 Hrs)

BOOKS RECOMMENDED :

Text Books:

1. Manufacturing Technology-Vol 1 & 2; R.L. Timings, S.P. Wilkinson; Pearson Publication.
2. Workshop Technology - By Hajra Choudhary Vol II.
3. Manufacturing Technology Vol. II P. N. Rao, McGraw Hill Publication

References:-

1. Pandya & Shah, Modern Machining process, Tata McGraw Hill 1998.
2. Workshop Technology, O.P. Khanna, Dhanpatrai & Sons.
3. Workshop Technology - By Raghuvanshi. Vol II.

4ME08 MANUFACTURING TECHNOLOGY - LAB

Practicals:-

1. Demonstration of operations related to lathe, shaper, slotter, drilling & grinding m/cs.
2. One job on lathe covering taper turning and threading.
3. One job on shaping covering plane and inclined surfaces.

The above jobs should include drilling, grinding, tapping etc. Term work should be submitted in the form of journal.

N.B. :- The practical examination shall consists of preparation of practical jobs and assessment by external and internal examiner.

4ME04 BASIC ELECTRICAL DRIVES AND CONTROL

Course Learning Objectives :

1. To study the working of electrical drives and their components
2. To study the basics of DC motors and their characteristics
3. To study the working of AC motors, Induction motors and concept of braking
4. To study the different speed control methods of A.C. and D.C. motors
5. To study and design of transducers and their applications
6. To study the industrial applications of different drives

Course Outcomes :

Students will be able to -

1. Understand the working of electrical drives and their components
2. Understand the basics of DC motors and their characteristics
3. Understand the working of AC motors, induction motors and concept of braking
4. Understand the different speed control methods of A.C. and D.C. motors
5. Understand the design of transducers and their applications
6. Understand the industrial applications of different drives

SECTION-A

Unit I : Concept of general electric drives, classification and comparison of electrical drive system, Cooling and heating of electric motors. Introduction to mechatronics, Theory and principle of Power Transistor, SCR. (8 Hrs)

Unit II : Basic characteristics of D.C. motor, Torque equation, Modified speed – Torque characteristics. Starting and braking of Electrical D.C. motors, comparison of mechanical and electrical braking methods. Introduction, Principle, construction and working of Servo motors, stepper motors, Brushless D.C. motors. (8 Hrs)

Unit III : Classification of A.C. motors, construction, types, principle of working and characteristics of 3 phase Induction motors, applications. Starting and braking of 3 phase induction motors. Classification of single phase induction motors. construction, principle and working and applications. Principle and working of universal motor. (8 Hours)

SECTION-B

Unit IV : Conventional methods of speed control of A.C. and D.C. motors. Thyristorized stator voltage control of 3 phase induction motor, (v/f) control method, slip-power recovery scheme. Thyristorized armature voltage control of D.C. motors using phase control & Thyristorized chopper. (8 Hours)



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CERTIFICATE

This is to Certify that the project report entitled "**DESIGN AND FABRICATION OF SOLAR HYBRID CAR**" has been successfully completed by MR. VAIBHAV B. UGEMUGE, MR. MITHILESH LANGOTE, MR. SWAPNIL V. BHONGADE, MR. NAYAN V. ZOTING under the guidance of PROF. V. L. BHAMBERE in recognition to the partial fulfillment for the award of the degree of Bachelor of Engineering in Mechanical Engineering at "Jagadamba College of Engineering & Technology Yavatmal - 445001. (An institution affiliated to Sant Gadge Baba Amravati University, Amravati)

Prof. Dr. V. L. Bhambere
Head of Department
Department of Mechanical Engineering

Dr. V. L. Bhambere
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ABSTRACT

The growth of world energy consumption and the increase of passenger vehicles are setting new challenges to environmental protection.


The advancement in 21st century, there has been increase in uses of oil and gas leading to problems like global warming, climate change, shortage of crude oil, etc. in today's world global warming is being increased day by day there are many reasons like pollution.

The fuel prices not only in india but throughout the world is increasing day by day thus there is a tremendous need to search for an alternative to conserve these natural resources, thus a solar and pedal used vehicle is an manually and electric operated vehicle that provides that alternative by harnessing solar energy to charge the battery and thus provide required voltage to run the motor .since india is blessed with nine months of sunny climate thus concept of solar vehicle is very friendly in india . it's also used the dynamo that run the vehicle.

Solar pedal vehicle with more advantages of no noise, no pollution, saving energy and reduce carbon dioxide emissions is to power driven vehicle with a motor drive wheels moving . solar pedal vehicle can make reduce our green house gas emission and other pollution .

Thus the solar pedal vehicle can become a very vital alternative to the fueled automobile thus its manufacturing is essential




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DEPARTMENT OF MECHANICAL ENGINEERING



CERTIFICATE

This is to Certify that the project report entitled **DESIGN AND FABRICATION OF RIVER CLEANING MACHINE** has been successfully completed by **MR. AKASH U. LAD, MR. PRANAY S. HASTE, MR. MANOJ R. RATHOD, MISS. SANCHITA T. GULHANE** under the guidance of **PROF. A. B. DHUMNE** in recognition to the partial fulfillment for the award of the degree of Bachelor of Engineering in Mechanical Engineering at "Jagadamba College of Engineering & Technology Yavatmal - 445001. (An institution affiliated to Sant Gadge Baba Amravati University, Amravati)

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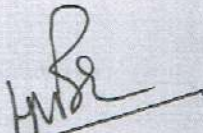


Abstract

This project emphasis on design and fabrication of the river waste cleaning machine. The work has done looking at the current situation of our national rivers which are dump with crore liters of sewage and loaded with pollutants, toxic materials, debris etc. The government of India has taken charge to clean rivers and invest huge capital in many river cleaning projects like "Namami Gange", "Narmada Bachao" and many major and medium projects in various cities like Ahmadabad, Varanasi etc. By taking this into consideration, this machine has designed to clean river water surface. Nowadays almost all the manufacturing process is being atomized in order to deliver the products at a faster rate. Automation plays an important role in mass production. In this project we have fabricated the manually operated river cleaning machine. The main aim of the project is to reduce time consumption for cleaning the river. In this project we have manufactured the manually operation of river cleaning with help of a watering fan and chain drive arrangement. By this project we introduced a model which would made a cleaning operation of floating debris easy and economical.

Keywords - Motor, chain drive, propeller, Conveyor, Collector, debris.




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Concepts of Digitized / Smart Buildings, Internet of Things (IOT) in buildings and Green Buildings, Industrialized Buildings

SECTION -B

Unit-III: Building Bye-laws and Development Control Rules for D Class Municipal Corporations in the Maharashtra State under the provisions of the Maharashtra Regional & Town Planning Act, 1966. Conversion of land to non-agricultural lands, layout for a housing project. Types of public building and their requirements, planning of public building.

Preparing line plans of different public buildings such as schools, commercial market, primary health center, workshop, college building, post-office. Free hand sketching of components of buildings and elevation features of building such as balconies, chajjas, etc., Staircase planning & drawing.

Unit IV: Concept of line plan, working and submission drawings of the building. Details to be incorporated in the working drawing. Necessity and use of working and submission drawing. Concept of site plan, block plan and layout plan. Importance and details to be incorporated. Concept of foundation plan, importance and use. Developing working and submission drawings for load bearing and framed structures building from the given line plan (Develop plan, elevation, LHSV, RHSV, back side view, section, foundation plan, site plan and their detail). Plumbing ramp, Electric plan.

Books Recommended :

1. Shah, Kale & Patki, Building Planning & Drawing, Tata McGraw-Hill publication
2. Dr. Kumar Swamy & Rao Swamy, Charotar publications
3. CheryR, Auto cad Pocket reference, BPB Publication.

4CE02 - HYDROLOGY & WATER RESOURCE ENGINEERING

Learning Objectives of Subject:

1. To study the different hydrological parameters.
2. To understand hydrological statistics and design.
3. To characterize and mitigate natural and man-made hazard.
4. To understand the various irrigation systems and its design.

Course outcomes:

At the end of the subject the students will be able -

1. Explain the hydrology and hydrological data.
2. To analyze the hydrological methods for runoff.
3. Evaluate the ground water hydrological problems.
4. Explain the need of irrigation systems and its alternatives.

SECTION - A

Unit I: Introduction - Hydrologic cycle, applications in engineering, sources of data. Precipitation- Forms of precipitation, characteristics of precipitation in India, measurement of precipitation, rain gauge network, mean precipitation over an area, depth-area- duration relationships, maximum intensity/depth-duration-frequency relationship, Probable Maximum Precipitation (PMP).

Unit II: Abstractions from precipitation - evaporation process, analytical methods of evaporation estimation, reservoir evaporation and methods for its reduction, evapotranspiration, measurement of evapotranspiration, interception, depression storage, infiltration, infiltration capacity, measurement of infiltration, modeling infiltration capacity, classification of infiltration capacities, infiltration indices.

Unit III: Runoff - runoff volume, methods of estimating runoff volume, flow duration curve, flow-mass curve, hydrograph, factors affecting hydrograph, components of hydrograph, base flow separation, effective rainfall, unit hydrograph. Ground water and well hydrology - forms of subsurface water, saturated formation, aquifer properties,



Unit V: Distribution systems - canal systems, alignment of canals, canal losses, estimation of design discharge. Design of channels, Kennedy's and Lacey's theory of regime channels. Canal outlets: non-modular, semi-modular and modular outlets. Lining of canals, types of lining. Water logging problems, causes, effects and remedies.

Unit VI: Dams and spillways - Earthen dams: Classification, design considerations, selection of suitable site. Estimation and control of seepage, slope protection. Gravity dams: forces on gravity dams, causes of failure, stress analysis, elementary and practical profile. Economic height of dam, Spillways: components of spillways, types of gates for spillway.

Books Recommended:

1. K Subramanya, Engineering Hydrology, Mc-Graw Hill.
2. K N Muthreja, Applied Hydrology, Tata Mc-Graw Hill.
3. G L Asawa, Irrigation Engineering, Wiley Eastern

4CE03 SURVEYING

Learning Objectives of Subject:

1. To learn about the term surveying, various instruments and possible error.
2. To learn Linear Measurement methods and way of conduction.
3. To learn about the measurement at elevation and of Directions, contour development process.
4. To understand and learn performing Plane table surveying.

Course Outcomes:

At the end of the course the student will be able to:

1. Define principles of Surveying, Remote Sensing and Geomatics.
2. Describe different instruments, tools, applications and techniques to determine the positions on the surface of the earth, change detection.
3. To perform Linear measurement methods of surveying.
4. Differentiate the techniques for setting out alignments, curves, other layouts, modern survey systems etc.
5. To perform survey at elevation and conduct Plane Table survey.

SECTION-A

Unit I: INTRODUCTION: Geo-informatics- definition, disciplines covered, importance. Field Surveying- definition & objectives; concept of Geoids and reference spheroids, coordinate systems, plane and geodetic surveys. Methods of location of a point- classification of surveys; principles of surveying Errors in measurements- sources, types of errors and their treatment. Random error distribution, accuracy, precision and uncertainty. Surveying instruments- temporary and permanent adjustment concept, principle of reversal. Maps- types, importance, scales/CI, conventional symbols, and generalization; topographic maps projection systems, sheet numbering systems, map layout.

Unit II: LINEAR MEASUREMENTS: Direct and indirect methods; Chain and tape measurements- corrections to tape measurements; Optical methods- tachometers, sub tense bar; Electronic methods- EDMs, total stations.

Unit III: MEASUREMENT OF ELEVATIONS : Various terms; Methods of height determination; Spirit leveling- different types of levels and staves; booking and reduction of data, classification and permissible closing error; profile leveling and cross sectioning; curvature & refraction and collimation errors; reciprocal leveling. Contours- characteristics, uses and methods of contouring.

SECTION - B

Unit IV: MEASUREMENT OF DIRECTIONS: Bearings and angles; Compass surveying- magnetic bearings, declination, local attraction errors and adjustments.

Unit V: TRAVERSING: Purpose and classification of each; Compass and theodolite traverses, theodolites- different types, uses, methods of observation and booking of data, balancing of traverses, computation of coordinates, omitted measurements Gale's traverse table.

Unit VI: PLANE TABLING: Merits and demerits, accessories; orientation and resection; methods of plane tabling; three point problem and solutions; errors in plane tabling, least square principle. Error Technology, Am Road, Kinhi, Satmal



Principal
Sant Gadge Baba Amravati University
Am Road, Kinhi, Satmal

CERTIFICATE

This is to certify that the Project Entitled

**“Flood Control Technique by Underground water Tank
System at Bori Gosavi Village”**

Has been successfully completed by

Payal Kishorrao Bukne

Puja M. Rathod

Mayur P. Gore

Pratik S. Kapsekar

Vrushali Gahayar

Pooja V. Sabapure

Mayur G. Kamble

In partial fulfillment for the degree of

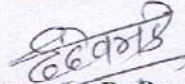
**Bachelor of Engineering in
Civil Engineering**

Awarded by

Sant Gadge Baba Amravati University, Amravati, (M. S)

During academic year 2019-2020 under my guidance

Guided by



Prof. Pranay P. Deogade

Assistant Professor

(Civil Engineering Department)

Jagadambha College of Engineering & Technology
Yavatmal.



Prof. A.R. Rode

Head of Civil Department
Jagadambha College of Engineering
& Technology, Yavatmal.

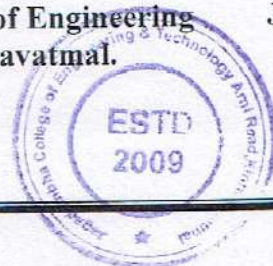


Dr. H.M. Baradkar
Principal

Jagadambha College of Engineering
& Technology, Yavatmal.

Dr. Hemant M. Baradkar
Principal

Jagadambha College of Engineering &
Technology, Arni Road, Kinhi, Yavatmal



ABSTRACT

Floods are frequent and devastating events worldwide. The Asian continent is much affected by floods, particularly in India. As the occurrence of flood events has become common, flood risk and flood prevention have raised public, political and scientific awareness. Floods cause extremely large numbers of fatalities in every country, but due to India's extremely high population density and often under development standards, a large amount of damages and many deaths occurred. India witnesses flood due to excessive rain which then results in overflow of rivers, lakes and dams, which adds to cause large amounts of damage to people's lives and property. In the past, India has witnessed many of the largest, most catastrophic floods, causing irreparable damage to people's livelihood, property, and crucial infrastructure.

Maharashtra is the state of India were affected by floods due to heavy rainfall. In yavatmal district the borigosavi village is mostly affected by flood in adan river due to heavy rainfall. This village out of 30 km from yavatmal taluka. The source of the Adan River is in the Washim district of Maharashtra. The Goki river is the tributary of Adan river passes from a Boori gosavi village. The depth of river basin in about 120 m. This village are affected by flood from past years, which causes damage of the houses, animal death, and the property, social and the economical loss. Because of this the villagers are troubles from few years and demand to Government authority of Maharashtra for rehibition.

According to this background we need a system to overcome such trouble the flood control technique by underground water tank system is refer as a solution. During floods, underground storage tank (UST) systems can become submerged or displaced by flood waters, leading to damaged UST systems or even releases of regulated substances into the environment. This system are used to reduce or prevent the detrimental effects of flood waters on a village.




Dr. Hemant M. Baradkar
Principal
Jagadamba College of Engineering & Technology

A
Report on
Field Project

**“DESIGN OF SEWERAGE SYSTEM FOR JAGADAMBHA
COLLEGE OF ENGINEERING AND TECHNOLOGY
YAVATMAL”**



JAGADAMBHA
COLLEGE OF ENGINEERING & TECHNOLOGY, YAVATMAL

Arni Road, Yavatmal - 445001 (M.S.)

Ph. 07232-244226, Fax : 07232-244226, Cell : 98 5005 3333

E-mail : principal.jcoet@gmail.com, principal@jcoet.org

Website : www.jcoet.org



SURVEYING:

Surveying is a branch of civil engineering and it is used to represent the general features of land in their proper relative positions. From these measurements, the drawings are prepared which may be in the form of a plan or a map.

The main objective of surveying is to prepare a map or a plan of the area surveyed. The map or plan is the horizontal projection of area on a horizontal plan. On plan, horizontal distances only are shown vertical distances between the points can be shown by contourlines.

TOTAL STATION:

1. A total station consists of a theodolite with a built-in distance meter (distancer), and so it can measure angles and distances at the same time.
2. Today's electronic total stations all have an auto-electronic distance meter (EDM) and electronic angle scanning. The coded scales of the horizontal and vertical circles are scanned electronically, and then the angles and distances are displayed digitally.
3. The horizontal distance, the height difference and the coordinates are calculated automatically and all measurements and additional information can be recorded.
4. Leica total stations are supplied with a software package that enables most survey tasks to be carried out easily, quickly and elegantly.
5. The most important of these programs are presented in the section "Applications programs". Total stations are used wherever the positions and heights of points, or merely their positions, need to be determined.



Total Station

LANDSCAPE DRAINAGE SYSTEM

Landscaping that sits in low-lying area of your property will most likely cause water to collect our pool as water flows downhill to the lowest point.

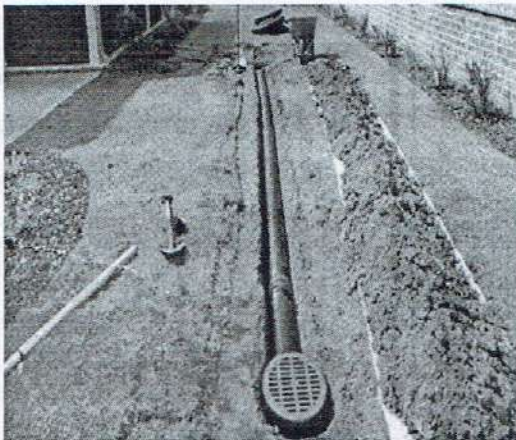
Even the slightest of slope of causes water to flow and erode the ground. Professional landscape drainage assistant may be necessary if your property become soggy or muddy with excess surface water.

Surface drainage systems:

This is a standard drainage system used for irrigation or in area of excess rainfall. This system work only do the application of gravity and come in either bedded inmate or graded system.

Subsurface drainage systems:

This is also standard type of drainage system that, although below ground, has similarities to surface drainage system. It also work due to gravity, but operates is regular and controlled manner.



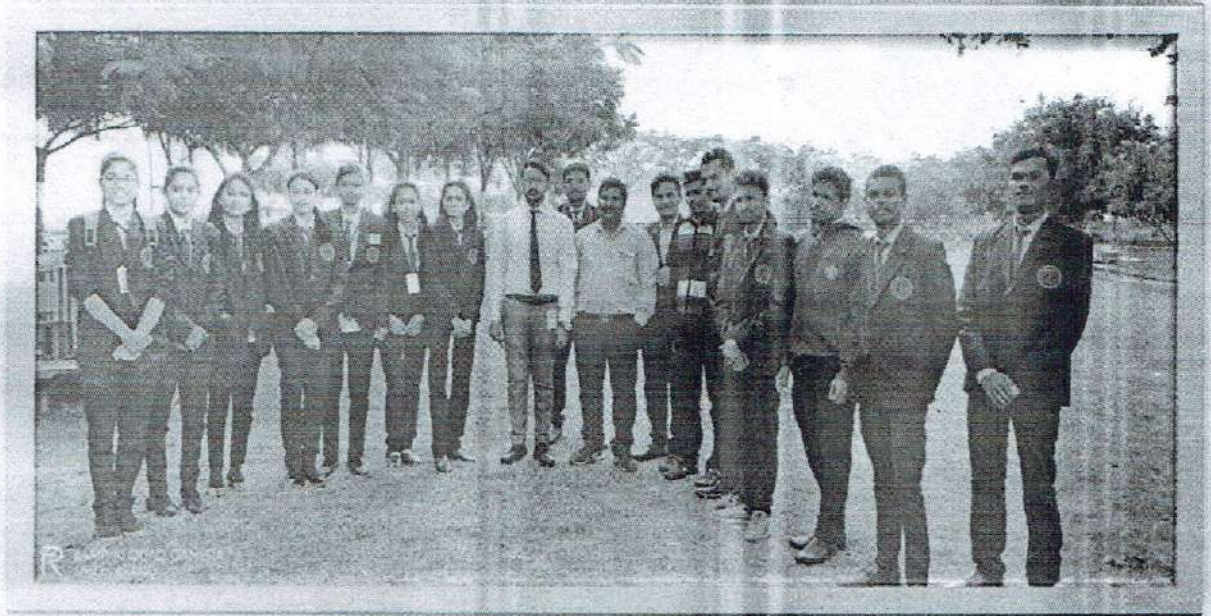
shutterstock.com • 1722409264

DESIGN OF DRAINAGESYSTEM

1 Sewers

Sewer pipes are available in a variety of materials. They can be made of cast and ductile iron, PVC, concrete, asbestos cement, HDPE (high density polyethylene), brick, and vitrified clay. Most new sewer pipe has a circular cross section, however, many older sewers, especially those made from brick, have cross sectional shapes.

PHOTOGRAPHS



Workshop Certificate:



NAAC ACCREDITED COLLEGE
JAGADAMBA
COLLEGE OF ENGINEERING & TECHNOLOGY, YAVATMAL

In nexus with
Vijay Engineering Services, Akola

Sr. No. 77

CERTIFICATE

This is to certify that Prof./Mr./Miss. Somnath Dhamankar
Faculty/Student of Civil Engineering Department has
participated and successfully Completed
**Three Days Onsite Training & Workshop on
"Total Station"**
From : 06th Feb 2020 To 08th Feb 2020

Palsukar
Mr. Vijay Palsukar
Director YES, Akola

Kendhe
Prof. S. S. Kendhe
HOD Civil Engineering

H.M.
Dr. H. M. Baradkar
Principal

Kendhe
Prof. S.S. Kendhe

HOD, Civil Engg.

Dr. H.M. Baradkar

Principal JE

To

14 January 2020

The Principal

JE Yavatmal

Subject: Permission to Technical Course in Collaboration with Minor Project at College Campus.

Respected sir,

We are requesting permission to use the college premises as the site for a Minor Project as well as for total station training site. We have already told our students to start preparing their pve-project work and they are really excited. The event will be held for three days from next week so I wanted to know in advance if I could use college campus for those three days.


As a part of SGBAU curriculum, B.E., III year student must prepare a mini project during their third year. It will be great privilege to our students to receive training and guidance for **minor project work**. Also we try to provide them a technical training of "How to use Total Station for Morden Surveying", which will help them to enhance their technical skill.

Yours faithfully


14/01/2020


Prof. R. J. Raut


(Technical Course Co-ordinator)


16/01/2020


(hod)

Prof. Shashank S. Kendhe
HOD, Civil Engineering
Jagadamba College of Engineering &
Technology, Arni Road, Kinhi, Yavatmal

1) Prof. A. H. Meshram  - 3rd yr. CL1

2) Prof. P. P. Deogade  - 3rd yr. CL-2

(Minor Project In-charge)


17/01/2020



CERTIFICATE OF TRAINING

The certificate is presented to

MAHAVIR RAJENDRA SISODIYA

For successfully completing 15 days "Solar Industrial Training" as part of the industrial training in our company for year June 2019.

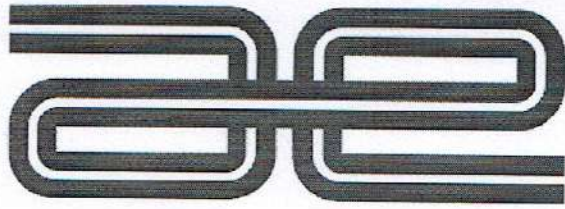


A handwritten signature in blue ink, appearing to read 'HMBR'.



Dr. Hemant M. Baradkar Managing Director
Principal

Jagadamba College of Engineering &
Technology, Ami Road, Kihni, Yavatmal



AUTOMATE ENGINEERING

Office Address 1st Floor, Malhar Pride, Shree Control Chowk, Narhe Industrial Area, Pune 43

Phone No: +91 7768999659

E-mail: connect.automate@gmail.com

Website: www.automateengg.com

INTERNSHIP CERTIFICATE

Name: Mr. Shubham Ramesh Rao Langade

College: Jagadamba college of engineering and technology, yavatmal

Department: Electrical Engineering

Domain of Internship: Factory Automation

Training date from: 10th June to 10th July 2020

During the period of Training Program at AUTOMATE ENGINEERING, the Candidate was found punctual, hardworking and inquisitive.

For AUTOMATE ENGINEERING,



Authorized Signature



Dr. Hemant M. Baradkar
Principal
Jagadamba College of Engineering &
Technology, Arni Road, Kinhi, Yavatmal

प्रति

दिनांक

15/12/2019

जगदंबा अभियांत्रिकी
मॅनॅज्मॅन्ट कॉलेज

विषय : Homedset Repeat Engineer या प्रशिक्षण
करीता.

महोदय,

प्रशासनाच्या कार्यालयीन कामकाज सोबतही जाणून
हे म.र.ए प्रशिक्षण उभारणे व त्याचा कार्यालयीन
दिनांक 25/12/19 ते 25/01/2020 पर्यंत
उत्सुन. याची बाबत 10 दिवस म.र.ए प्रकल्प
हीनला जाणार असून. तरही खालील विद्यार्थी
या कार्यालयीन कामकाज सोबतही जाणून. व प्रशिक्षण

विद्यार्थीची नावे

- 1) कुशाळ भजय कडे
- 2) शकुल प्रभाकर दामगाकर
- 3) वैभव कुणस हुबडे




Dr. Hemant M. Baradkar
Principal
Jagadamba College of Engineering &
Technology, Arni Road, Kinhi, Yavatmal

M/S. PACHKAWADE AGRO ENGINEERING CORPORATION

Deals in : • All Types of Pumps & Generators • HDPE/PVC Pipes and Cables • Raingun and Sprinkler Sets
• Solar and Agricultural Equipment • Oilmill / Ginning Spares Reconditioning and Fabrication Work

OFFICE : - Opposite S. T. Stand, Yavatmal, FACTORY / GODOWN : - Plot A-74, MIDC Lohara, Yavatmal
CONTACT : - 9422866992; 8975128153, E-MAIL:- pachkawadeengineering@gmail.com

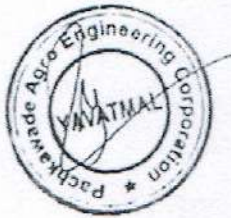
Date: 16/06/2019

TO WHOM IT MAY CONCERN

This is to certify that Pranay Vijay Satpute under (Dept of Mechanical Engg.) has successfully completed 15 days (From 2-06-2019 to 16-06-2019) long internship program at this Branch/Company. During the period of her internship program with us, they were found punctual, hardworking and inquisitive.

We wish her every success in life.

For, M/S Pachkawade Agro Engineering Corporation.



Authorised Signature



A handwritten signature in blue ink, appearing to read "HMB".

Dr. Hemant M. Baradkar
Principal
Jagadamba College of Engineering &
Technology, Arni Road, Kinhi, Yavatmal



Balaji Construction

Er.Santosh Sapate
Cell - 9726330460
9960109681

Consulting Civil Engineer
& Approved Valuer
• Plan • Estimate • Valuation
• 3D Elevation • R.C.C.Design

Office: Bharti Complex, in front Of Gramin Police Station Darwha Road, Yavatmal
Email- sapate_san@rediffmail.com

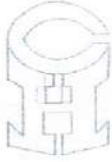
TO WHOM IT MAY CONCERN

This is certify that, Mr./Miss **Mangesh S. Navghare** students of JAGADAMBHA COLLEGE OF ENGINEERING AND TECHNOLOGY, YAVATMAL had successfully completed the industrial training at Balaji construction Yavatmal from 02/12/2019 to 30/12/2019.

From, Balaji Construction



Dr.Hemant M. Baradkar
Principal
Jagadamba College of Engineering &
Technology,Arni Road,Kinhi,Yavatmal



HARIKRUPA BUILDERS

509, Picasso Plaza, 5th Floor, S. No. 1A/1/2, NIBM Chowk, Above Jyoti Hotel, Pune - 411048.

Ph.: 020-26838888, 020-26837858 ♦ E-mail : krishnalohokare@ymail.com

Ref.:

Date :

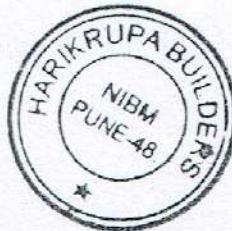
Date: 15/07/2019

TO WHOM IT MAY CONCERN

This is to certify that Ms. Shivani SanjayraoJumde (Dept. of Civil Engg.) has successfully completed one month (From 15th June, 2019 to 15th July, 2019) long internship programme at this Branch/Company. During the period of her internship programme with us, she was found punctual, hardworking and inquisitive.

We wish her every success in life.

For, HARIKRUPA BUILDERS



Authorized Signature



Dr. Hemant M. Baradkar
Principal
Jagadamba College of Engineering &
Technology, Arni Road, Kinhi, Yavatmal



SP Interiors & Construction Work

Dhamangaon Bypass, Lohara, Yavatmal-445001

+91 8149424278

shyam.Prajapati90@gmail.com

Date: 30/12/2019

TO WHOM IT MAY CONCERN

This is to certify that Mr. /Miss **Abhishek V.Gughane** (Dept. Of Civil Engg.) has successfully completed one month (From 1st Dec 2019 to 30th Dec 2019) long internship program at this Branch/ Company during the period of his/her internship program with us, it was found punctual, hardworking and inquisitive.

We wish you every success in life.



From, SP Interiors & Construction works

Dr. Hemant M. Baradkar
Principal
Jagadamba College of Engineering &
Technology, Arni Road, Kinhi, Yavatmal