

# ADITYA ENGINEERING COLLEGE

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Aditya Nagar, ADB Road, Surampalem - 533437, Near Kakinada, E.G.Dt., Ph:99498 76662

Program Name : B.Tech. in Electrical and Electronics Engineering

## Syllabus Revision for the Academic Year 2021-2022

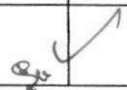
S.No	Semester	Course Code	Course Name	% of content revised for the existing year
1	I	201HS1T01	Communicative English	0
2	I	201BS1T01	Differential equations and Linear algebra	0
3	I	201BS1T03	Applied Physics	0
4	I	201ES1T02	Programming for Problem Solving using C	0
5	I	201ES1I01	Engineering Graphics and Design	0
6	I	201HS1L01	Communicative English Lab	0
7	I	201BS1L02	Applied Physics Lab	0
8	I	201ES1L02	Programming for Problem Solving using C Lab	0
9	I	201MC1T01	Environmental Science	0
10	II	201BS2T05	Partial Differential Equations and Vector Calculus	0
11	II	201BS2T06	Transform Techniques	0
12	II	201ES2T07	Data Structures through C	0
13	II	201ES2T09	Basic Electrical Circuits	0
14	II	201ES2T13	Basic Civil and Mechanical Engineering	0
15	II	201ES2L06	Data Structures through C Lab	0
16	II	201ES2L09	Electrical Engineering Workshop	0
17	II	201ES2L11	Basic Civil and Mechanical Engineering Lab	0
18	II	201MC2L01	Professional Communications Skills Lab	0

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19	II	201MC2T02	Constitution of India	0
20	III	201BS3T11	Numerical methods & Complex variables	0
21	III	201EE3T01	Analog Electronic Circuits	30
22	III	201EE3T02	Electrical Circuit Analysis	0
23	III	201EE3T03	DC Machines and transformers	20
24	III	201EE3T04	Electromagnetic Fields	0
25	III	201EE3L01	DC machines and transformers Lab	20
26	III	201EE3L02	Electrical Circuits Lab	10
27	III	201EE3L03	Analog Electronic Circuits Lab	0
28	III	201SO3L02	Design of Electrical Circuits using Engineering Software	100
29	III	201MC3T03	Biology For Engineers	0
30	IV	201EE4T05	Electrical Power Generation and Distribution Systems	0
31	IV	201EE4T06	Digital Electronics	5
32	IV	201EE4T07	Induction and Synchronous Machines	5
33	IV	201HS4T03	Managerial Economics and Financial Analysis	0
34	IV	201ES4T18	Python Programming	0
35	IV	201ES4L15	Python Programming Lab	0
36	IV	201EE4L04	Induction and Synchronous Machines Lab	0
37	IV	201EE4L05	Digital Electronics lab	0
38	IV	201SC4L14	IoT Applications of Electrical Engineering	100
39	IV	201MC4T04	Essence of Indian Traditional Knowledge	0
40	V	191EE5T10	Power Systems –II	0

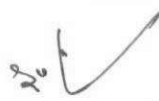
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41	V	191EE5T11	Power Electronics	5
42	V	191EE5T12	Electrical Measurements and Instrumentation	100
43	V	191HS5T05	Managerial Economics and Financial Analysis	0
44	V	191EE5E03	Renewable energy systems	15
45	V	191EE5E02	Electrical Machine Modeling and Analysis	0
46	V	191EE5E01	Advanced Control Systems	0
47	V	191EE5E03	Renewable energy systems	15
48	V	191ME5O02	Fundamentals of Mechanical Engineering	0
49	V	191ME5O03	Supply Chain Management	100
50	V	191ME5O04	3D Printing	100
51	V	191ME5O05	Entrepreneurship Development and Incubation	100
52	V	191CS5O02	Object Oriented Programming through C++	100
53	V	191CS5O03	Java Programming	100
54	V	191CS5O04	R Programming	100
55	V	191IT5O01	Data Base Management Systems	100
56	V	191IT5O02	Computer Graphics	100
57	V	191MI5O01	Overview of Mining	100
58	V	191PT5O01	Process Intensification in Petroleum Industry	100
59	V	191PT5O02	Fundamentals of Petroleum Industry	100
60	V	191AG5O01	Basic Crop Production Practices	100
61	V	191EE5L04	Electrical Machines-II Lab	5
62	V	191EE5L05	Control Systems Lab	0
63	V	191HS5T06	Employability Skills -III	0

  
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64	V	191PR5P02	Socially Relevant Project	100
65	V	191MC5A08	Intellectual Property Rights and Patents	0
66	VI	191EE6T13	Microprocessor & Interfacing	35
67	VI	191EE6T14	Power System Analysis	0
68	VI	191EE6T15	Power Converter Drives	5
69	VI	191EE6E07	Electrical Distribution Systems	5
70	VI	191EE6E05	Advanced Power Electronics Converters	100
71	VI	191EE6E06	Digital Control Systems	0
72	VI	191EE6E08	Energy Audit, Conservation & Management	0
73	VI	191EE6E11	High Voltage Transmission	100
74	VI	191EE6E12	Switched mode power Converters	100
75	VI	191EE6E09	Control Systems Design	100
76	VI	191EE6E10	Electrical Safety	100
77	VI	191CE6O02	Disaster Management	100
78	VI	191ME6O06	Solar Energy Utilisation	100
79	VI	191ME6O08	Introduction to Hydraulics and Pneumatics	100
80	VI	191ME6O09	3D Printing	100
81	VI	191ME6O10	Robotics	100
82	VI	191ME6O11	Management Science	100
83	VI	191ME6O12	Entrepreneurship Development and Incubation	100
84	VI	191EC6O04	Biomedical Instrumentation	100
85	VI	191EC6O05	ECAD Tools	100
86	VI	191CS6O06	Operating Systems	100
87	VI	191CS6O07	Web Technologies	100
88	VI	191CS6O08	Cyber Security	100

89	VI	191CS6O09	AR / VR	100
90	VI	191IT6O03	Computer Organization	100
91	VI	191IT6O04	AI Tools & Techniques	100
92	VI	191IT6O05	Robotic Process Automation	100
93	VI	191MI6O02	Industrial Safety Practices	100
94	VI	191MI6O03	Electrical Equipment's in Mines	100
95	VI	191PT6O03	Unconventional Hydrocarbon Resources	100
96	VI	191PT6O04	Asset Management	100
97	VI	191AG6O02	Weather forecast in Agriculture	100
98	VI	191AG6O03	Bio-energy systems design and applications	100
99	VI	191EE6L06	Electrical Measurements & Instrumentation Lab	100
100	VI	191EE6L07	Power Electronics Lab	0
101	VI	191HS6T07	Employability Skills -IV	0
102	VI	191MC6A09	Professional Ethics and Human Values	100
103	VII	171EE7T18	Utilization of Electrical Energy	0
104	VII	171EE7T19	Linear and Digital IC Applications	0
105	VII	171EE7T20	Power System Operation and Control	0
106	VII	171EE7T21	Switch Gear and Protection	0
107	VII	171EE7E11	Optimization Techniques	0
108	VII	171EE7E12	Digital Signal Processing	0
109	VII	171EE7E13	Special Electrical Machines	0

  
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110	VII	171EE7E14	High Voltage Engineering	0
111	VII	171EE7E15	Electric Power Quality	0
112	VII	171EE7E16	EHVAC Transmission	0
113	VII	171EE7L09	Power Systems Simulation Lab	0
114	VII	171EE7L10	Micro Processor and Micro Controllers Lab	0
115	VII	171EE7P01	Industry Oriented (Internship) Minor Project	0
116	VIII	171EE8E17	HVDC Transmission	0
117	VIII	171EE8E18	Flexible AC Transmission Systems	0
118	VIII	171EE8E19	Power System Reforms	0
119	VIII	171EE8E20	Digital Control Systems	0
120	VIII	171EE8O01	Energy Audit, Conservation and Management	0
121	VIII	171EE8O02	VLSI Design	0
122	VIII	171EE8O03	Unix and Shell Programming	0
123	VIII	171EE8O04	Neural Networks And Fuzzy Logic	0
124	VIII	171EE8O05	Robotics	0
125	VIII	171EE8O06	Vehicular Electric Power Systems	0
126	VIII	171EE8O07	Internet of Things	0
127	VIII	171EE8O08	Cyber Security	0
128	VIII	171EE8P02	Major Project	0
Total number of courses in the academic year 2021-2022				= 128
Number of courses having revision in syllabus content $\geq 20\%$ in the academic year 2021-2022				= 49
Percentage of syllabus revision carried out in the academic year 2021-22 = $(49/128)*100$				= 38.28%

Program Coordinator

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Aditya Engineering College  
SURAMPALAM  
Head of the Department  
Head of The Department  
Dept: Of Electrical & Electronics Engineering





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## Department of Electrical and Electronics Engineering

Date: 20-04-2022

### Minutes of the VIII meeting of BOS scheduled on 20-04-2022

The VIII meeting of the BOS of EEE was held on 20/04/2022 at 9.30 AM, Ajivika Conference Hall. Dr. V. Srinivasa Rao, Chairperson presided over the meeting.

#### **Agenda 8.1: Welcome address by Chairperson.**

Dr. V. Srinivasa Rao, BOS Chairperson invited the distinguished members of BOS to the VIII BOS Meeting.

#### **Agenda 8.2: Ratification of minutes of the previous Board of Studies meeting.**

The BOS members have ratified the points discussed in the previous Board of Studies meeting held on 28/09/2021.

#### **Agenda 8.3.: Discussion on proposed AR20B.Tech (EEE) V, VI, VII and VIII semesters syllabus and ratification of the same.**

The BOS members approved the AR20B.Tech (EEE) V, VI, VII and VIII semesters syllabus after incorporating the following changes in the proposed syllabi.

- Suggested that in Power Electronics course the Unit-IV: Basics of choppers can be removed. Dual converter to be added.
- Suggested that in Electrical Measurements and Instrumentation lab 10<sup>th</sup> experiment in the compulsory experiments is swapped with 5<sup>th</sup> experiment in the augmented list of experiments.
- Suggested that in Industrial Electrical systems in Unit V PLC is replaced by max DNA.
- Suggested that in Neural Networks and Fuzzy Logic in Unit IV Kolmogorov Theorem Learning Difficulties and Improvements and Associative memories is replaced with Bidirectional associative memory, architecture of discrete Hopfield network and In Unit V Neural network applications is removed.
- Suggested to remove fuel cell and ocean energy from non-conventional energy resources.
- Suggested to include PMSM drives basic operation in power converters and drives.
- Suggested to include k-factors and non-three phase transmission lines in electrical distribution systems.
- Suggested to remove power system stabilizers and calculation of damping torque from power system analysis.
- Suggested to include these four experiments in power system and simulation lab:
  - i. Performance of long transmission line without compensation
  - ii. Performance of long transmission line with shunt compensation

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- iii. Analyze the Ferranti effect on long transmission line
- iv. Transient Stability analysis of single machine connected to an infinite bus (SMIB) using equal area criterion.
- Suggested to include the experiment Determination of the characteristics of a LVDT in electrical measurements and instrumentation lab.

**Agenda 8.4: Discussion on proposed AR20 Honors and Minor Degree Courses syllabus and ratification of the same.**

The BOS Members ratified the syllabus of Honors and Minor Degree courses of AR20 V, VI and VII semesters.

**Agenda 8.5: Discussion on value added courses offered for the students and ratification of the same.**

Members of BOS ratified the following value- added courses identified for the students to be offered and suggested to include topics related to thrust areas.

**Agenda 8.6: Discussion on the new courses offered in the B. Tech (EEE) program and ratification of the same.**

Members of BOS noted the percentage of new courses offered for the academic year 2021-2022 in the B. Tech (EEE) is 12.63% and ratified the same. The list of new courses is enclosed as Annexure-I.

**Agenda 8.7: Discussion on the percentage of the syllabus revision has done in the B. Tech (EEE) & M. Tech (PED) programs and ratification of the same.**


The syllabus revisions done in B. Tech (EEE) & M. Tech (PED) programs based on the Stakeholders feedback on curriculum. The BOS members have approved all the percentage of syllabus revision for the academic year 2021-2022 in B. Tech (EEE) is 38.28% and M. Tech (PED) is 6.12%. The list of courses revised during is enclosed as Annexure-II.

**Agenda 8.8: Discussion on the courses having focus on employability/ entrepreneurship/ skill development in the program of B. Tech (EEE) & M. Tech (PED) programs and ratification of the same.**

The members of BOS ratified the courses having focus on employability/entrepreneurship/skill development in the B. Tech (EEE) & M. Tech (PED) programs.

**Agenda 8.9: Discussion on the B. Tech (EEE) & M. Tech (PED) programs in which Choice Based Credit System (CBCS)/elective course system is being implemented and ratification of the same.**

Members of BOS ratified the choice based credit systems (CBCS)/elective course system that is being implemented in B. Tech (EEE) & M. Tech (PED) programs.

  
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#### **Agenda 8.10: Analysis of Stakeholder's Feedback on Curriculum**

The BOS Chairperson presented the analysis report of Stakeholder's feedback on curriculum. The BOS members noted the same and the Action Taken Report is enclosed as Annexure-III.

#### **Agenda 8.11: Analysis of Results of the odd semester of the academic year 2021-22.**

The BOS Chairperson presented the odd semesters pass percentage for the A. Y. 2021-2022. The BOS members noted the same.

#### **Agenda 8.12: Analysis of students feedback in the odd semester of the academic year 2021-22**

BOS Chairperson expressed that the student feedback in academic year 2021-2022 for odd semester. The BOS members noted the same

#### **Agenda 8.13: Any other items with the approval of Chairperson.**

- Dr. M. Nageswara Rao suggested to prescribe relevant books for the new courses.
- Mr. M. Veera Suresh suggested to have relevant weblinks for all the courses.
- Dr. K Siva Kumar suggested to have remedial classes for the poor performers.
- Mr. N Siva Prasad suggested to frame syllabus with more emphasis on present practical requirement in the industry.
- Mr. N Siva Prasad suggested to use MAX DNA in place of PLC as per the present requirement of the industry.

#### **Agenda 8.14: Scheduling of next Board of Studies meeting.**


- The next BOS meeting is tentatively scheduled in the month of December 2022.

#### **Agenda 8.15: Vote of Thanks**

Dr. V. Srinivasa Rao, BOS Chairperson presented the Vote of thanks.



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**BOS Chairperson**  
Head of The Department  
Dept: Of Electrical & Electronics Engineering,  
Aditya Engineering College (AG)



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## Department of Electrical and Electronics Engineering

### Annexure-I

### List of New Courses in the Academic Year 2021-2022

S. No	Program	Semester	Course Code	Course Name
1	B. Tech (EEE)	III	201SO3L02	Design of Electrical Circuits using Engineering Software Tools
2	B. Tech (EEE)	IV	201SC4L14	IoT Applications of Electrical Engineering
3	B. Tech (EEE)	V	191EE5T12	Electrical Measurements and Instrumentation
4	B. Tech (EEE)	V	191EE5O02	Electrical Materials
5	B. Tech (EEE)	V	191EE5O03	Basic Electrical Measurements
6	B. Tech (EEE)	V	191PR5P02	Socially Relevant Project
7	B. Tech (EEE)	VI	191EE6E05	Advanced Power Electronics Converters
8	B. Tech (EEE)	VI	191EE6E11	High Voltage Transmission
9	B. Tech (EEE)	VI	191EE6E12	Switched mode power Converters
10	B. Tech (EEE)	VI	191EE6E09	Control Systems Design
11	B. Tech (EEE)	VI	191EE6E10	Electrical Safety
12	B. Tech (EEE)	VI	191EE6L06	Electrical Measurements & Instrumentation Lab

**BOS Chairperson**  
Head of The Department  
Dept. Of Electrical & Electronics Engineering  
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## Department of Electrical and Electronics Engineering

### Annexure-II

#### List of Courses Revised in the Academic Year 2021-2022

S. No	Program	Semester	Course Code	Course Name
1	B. Tech (EEE)	III	201EE3T01	Analog Electronic Circuits
2	B. Tech (EEE)	III	201EE3L01	DC Machines and transformers
3	B. Tech (EEE)	VI	191EE6T13	Microprocessor & Interfacing
4	M. Tech (PED)	I	192PD1E03	Programmable Logic Controllers & Applications
5	M. Tech (PED)	I	192PD1E04	Artificial Intelligence Techniques
6	M. Tech (PED)	II	192PD2E09	Digital Control Systems
7	M. Tech (PED)	II	192PD2E10	Advanced Digital Signal Processing

  
BOS Chairperson

Head of The Department  
Dept: Of Electrical & Electronics Engineering  
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## Department of Electrical and Electronics Engineering

### Annexure-III

### Action Taken Report on Stakeholders Feedback in the Academic Year 2021-22


S. No	Agenda Item No.	Stakeholders Recommended	Action Taken
1.	8.10	As electrical vehicles are a trendy topic in the coming years. Students are encouraged to know about the Electric Vehicles.	Considering Employer Feedback, a value added course named "Electric Vehicles design-simulation" is included in the curriculum.
2.	7.6	The importance is step up and step down of voltage and current is gaining importance in industry sector. The concept of instrumentation transformers (CT, PT) are to be included in the power systems of AR20	The concept of instrumentation transformers will be added in power systems subject.
3.	8.13	The course "MAX DNA" should be considered in the place id "PLC" for the industry oriented jobs	Based on the suggestions given by the employer, steps will be taken to replace the "PLC" course with "MAX DNA".
4.	8.3	For students to work in core sectors, they must have practical knowledge of electrical programming ideas.	Power electronic programming topics will be thoroughly analysed and efficiently demonstrated through PPTs, online/offline classes, and video presentation.
5.	7.4	Course structure of some subjects are to be modified in such a way student can gain more knowledge.	Taking Alumni feedback the courses named "Microprocessor and interfacing, Power system-II, Power Electronics and Energy Audit Conversation and Management" are modified.
6.	7.4	The course content of "Power quality and FACTS" in AR19 is vast and is to be reduced.	Necessary arrangement are to be taken in order to reduce the course content of "Power quality and FACTS" in AR19
7.	8.5	The courses of "Applications of Artificial intelligence to Electrical Engineering and Python Programming" are to be offered to the students that shares the knowledge of coding in electrical applications	the following courses "Applications of Artificial intelligence to Electrical Engineering and Python Programming" will be considered as a value added courses for the students.

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8.	7.13	The software and hardware knowledge must be balanced by introducing more courses related to simulation and demo oriented expert talks.	New courses will be introduced as open electives that balances the software and hardware
9.	7.15	Web links are to be included in the course syllabus	Considering Teacher Feedback, web links are provided at the end of every course in the AR19 and AR20 curriculum.
10.	7.4	As stabilizing power system is an important topic, it is recommended that the concept of "power system stabilizer" should be included in the power system course	Based on the suggestions given by the faculty, necessary arrangements will be made to include the concepts of power system stabilizers in the power systems course
11.	8.13	Remedial classes should be conducted for poor performers	Steps are to be taken to conduct remedial classes for poor performers
12.	8.3	Students should know the basics of all the fundamentals of power electrical devices.	Effective demonstration of fundamentals and basics are thought using PPT, placards, animations and video demonstrations.
13.	8.10	Increase industrial training practically	Since internships are now required, students must complete industry training and complete a project as part of their internship.
14.	7.12	Value added courses are to be conducted.	Necessary arrangements will be taken to conduct the value added courses like "battery management system and machine learning".
15.	8.3	As it is difficult to understand the concepts of "Neural Networks and Fuzzy logic" it is suggested to remove it from the curriculum	The idea of Neural networks and fuzzy logic and its applications will be removed from the curriculum.
16.	7.10	The addition of a new lab course can enhance students communication skills and their command of the English language.	Considering student/parent feedback, necessary measures will be taken to enhance the communication skills among the students.

  
**BOS Chairperson**

Head of The Department  
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