

ADITYA ENGINEERING COLLEGE

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Recognised by UGC under sections 2(f) and 12(B) of UGC Act, 1956

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

Program Name : B.Tech. in Mechanical Engineering

Syllabus Revision for the Academic Year 2019-2020

S.No	Semester	Course Code	Course Name	% of content revised for the existing year
1	I	191HS1T01	Communicative English	90
2	I	191BS1T01	Differential Equations and Linear Algebra	20
3	I	191BS1T02	Engineering Physics	60
4	I	191ES1T01	Programming for problem solving using C	0
5	I	191HS1L01	Communicative English Lab-I	0
6	I	191BS1L01	Engineering Physics Lab	60
7	I	191ES1L01	Programming for problem solving using C Lab	0
8	I	191ES1L02	Basic Engineering Workshop	72
9	I	191MC1A01	Environment Science	50
10	I	191MC1A02	Constitution of India	100
11	II	191BS2T05	Partial Differential equations and vector calculus	40
12	II	191BS2T06	Chemistry of Materials	70
13	II	191ES2T02	Engineering Graphics and design	45
14	II	191ES2T03	Essential Electrical and Electronics Engineering	0
15	II	191ES2T04	Engineering Mechanics	20
16	II	191HS2L02	Communicative English Lab-II	0
17	II	191BS2L04	Engineering Chemistry Lab	50

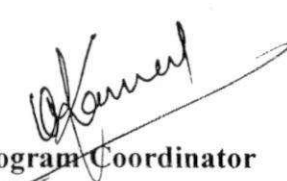
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S.No	Semester	Course Code	Course Name	% of content revised for the existing year
18	II	191ES2L03	Essential Electrical and Electronics Engineering Lab	0
19	II	191ES2L07	Mechanical Engineering Workshop	100
20	II	191PR2P01	Engineering Exploration Project	100
21	III	171ES3T13	Metallurgy & Materials Science	0
22	III	171ES3T11	Mechanics of Solids	0
23	III	171ES3T12	Thermodynamics	0
24	III	171HS3T04	Managerial Economics and Financial Analysis	0
25	III	171ES3T14	Fluid Mechanics & Hydraulic Machinery	0
26	III	171ME3T01	Computer Aided Engineering Drawing Practice	0
27	III	171ES3L05	Basic Electrical And Electronics Engg. Lab	0
28	III	171ES3L06	Mechanics of Solids and Metallurgy Lab	0
29	III	171HS3A09	Professional Ethics & Human Values	0
30	III	171HS3A10	Employability skills-I	0
31	IV	171ME4T02	Kinematics of Machinery	0
32	IV	171ME4T03	Thermal Engineering -I	0
33	IV	171ME4T04	Production Technology	0
34	IV	171ME4T05	Design of Machine members-I	0
35	IV	171ME4T06	Industrial Engineering and Management	0
36	IV	171ME4T07	Machine Drawing	0
37	IV	171HS4T08	Intellectual Property rights and patents ✓✓	0
38	IV	171ME4L01	Production Technology Lab	0

S.No	Semester	Course Code	Course Name	% of content revised for the existing year
39	IV	171ES4L07	Fluid mechanics and Hydraulic Machinery Lab	0
40	IV	171HS4A11	Employability Skills -II	0
41	V	171ME5T08	Dynamics of Machinery	0
42	V	171ME5T09	Metal Cutting and Machine Tools	0
43	V	171ME5T10	Thermal Engineering -II	0
44	V	171ME5T11	Design of Machine members-II	20
45	V	171ME5T12	Operations Research	0
46	V	171ME5E01	Automobile Engineering	36
47	V	171ME5E02	Mechanical Vibrations	100
48	V	171ME5E03	Additive Manufacturing	0
49	V	171HS5T06	Employability Skills -III	100
50	V	171ME5L02	Theory of Machines Lab	0
51	V	171ME5L03	Thermal Engineering Lab	28
52	V	171ME5S01	MOOCS-I	0
53	VI	171ME6T13	Heat Transfer	0
54	VI	171ME6T14	Refrigeration and Air Conditioning	0
55	VI	171ME6T15	Metrology and Instrumentation	48
56	VI	171ME6E04	Robotics	0
57	VI	171ME6E05	Design for Manufacturing	0
58	VI	171ME6E06	Non Destructive Evaluation	20
59	VI	171ME6E07	Unconventional Machining Processes	0


S.No	Semester	Course Code	Course Name	% of content revised for the existing year
60	VI	171ME6E08	Industrial Hydraulics and Pnuematics	15
61	VI	171ME6E09	Quality & Reliability Engineering	0
62	VI	171HS6T07	Employability Skills-IV	100
63	VI	171ME6L04	Machine Tools Lab	20
64	VI	171ME6L05	Heat Transfer Lab	0
65	VI	171ME6L06	Metrology & Instrumentation Lab	24
66	VI	171ME6S02	MOOCS-II	0
67	VII	R1641031	Mechatronics	0
68	VII	R1641032	CAD/CAM	0
69	VII	R1641033	Finite Element Methods	0
70	VII	R1641034	Power Plant Engineering	0
71	VII	R164103A	Computational Fluid Dynamics	0
72	VII	R164103B	Condition Monitoring	0
73	VII	R164103C	Additive Manufacturing	0
74	VII	R164103D	Advanced Materials	0
75	VII	R164103E	Design for Manufacture	0
76	VII	R164103F	Gas Dynamics and Jet Propulsion	0
77	VII	R1641037	CAD/CAM Lab	20
78	VII	R1641038	Mechatronics Lab	100
79	VIII	R1642031	Production Planning and Control	0
80	VIII	R1642032	Unconventional Machining Processes	0

S.No	Semester	Course Code	Course Name	% of content revised for the existing year
81	VIII	R1642033	Automobile Engineering	0
82	VIII	R164203A	Thermal Equipment Design	100
83	VIII	R164203B	Non Destructive Evaluation	16
84	VIII	R164203C	Quality & Reliability Engineering	0
85	VIII	R1642036	Project	0
Total number of courses in the academic year 2019-2020				= 85
Number of courses having revision in syllabus content $\geq 20\%$ in the academic year 2019-2020				= 27
Percentage of syllabus revision carried out in the academic year 2019-2020 = $(49/135) \times 100$				= 31.76


Program Coordinator


Head of the Department

Head of the Department
Department of Mechanical Engineering
Aditya Engineering College (A)
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Department of Mechanical Engineering

Date: 22-07-2019

Minutes of the IV meeting of BOS scheduled on 20-07-2019

The IV meeting of the BOS (Board of Studies) of ME was held on 20-07-2019 at 10:00 AM in the Ajivika Conference Hall, Bill Gates Bhavan, AEC. Dr.Bh.Vara Prasad, chairperson presided over the meeting.

Agenda 4.1: Welcome address by Chairperson-BOS

Prof Bh. Vara Prasad, BOS chairperson invited the distinguished members of BOS to the IV BOS Meeting.

Agenda 4.2: 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 12/11/2018.

Agenda 4.3: Discussion and ratification of the vision and mission of the department and Program Educational Objectives (PEOs). Program out Comes (POs) and Program Specific Outcomes (PSOs) of the programs under the department

The members of BOS discussed and ratified of the Vision and Mission of the department and Program Educational Objectives (PEOs), Program Outcomes (POs) and Program Specific Outcomes (PSOs) of the Programs under the Department.

Agenda 4.4: Discussion on proposed AR19 B.Tech (ME) Program structure, AR 19 B. Tech (ME)Program-I&II semesters syllabus and ratification of the same

BOS members approved AR 19 B. Tech (ME) program structure and AR 19 B. Tech. Program-I&II semesters syllabus of Engineering Mechanics, Engineering Graphics and Design, Engineering Workshop, Workshop-II, Basic Civil and Mechanical Engineering & Basic Civil and Mechanical Engineering Lab and ratified the same. After long discussions with the BOS members on the

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proposed program structure of AR 19 B. Tech (ME) and AR 19 B.Tech. Program-I&II semester's syllabus, the following suggestions are made:

- Suggested to keep Physics/ Physics lab in I semester and Chemistry/ Chemistry lab in II semester for Mechanical Engineering.
- Suggested to add Robotics and 3D Printing, Introduction to material science, Operations Research, Introduction to Mechanics of Solids in Open Electives.
- Suggested to remove Solar Energy Utilization and add Advanced Fluid Mechanics in Program Elective IV.
- Suggested to add Lean Manufacturing in Program Elective III and Advanced Automobile Engineering from Program Elective III to Program Elective IV.
- Suggested to remove Black Smithy in work shop and increase one experiment in carpentry and one in Tin Smithy.
- Suggested to keep A. Nelson, F. L. Singer text books as the prescribed books for Engineering Mechanics.
- Suggested to keep Dieing and tapping in Work shop II for Mechanical and Mining Engineering.
- Suggested to follow university guidelines for Engineering Exploration Project in I semester.
- Suggested to remove Sections of Solids and Development of Surfaces in Unit III and keep Unit V as Unit IV and remove Conversion of Isometric to Orthographic representation in Engineering Graphics and Design, which is common for all the branches.
- Suggested to introduce Power Transmission in Unit IV of Basic Civil and Mechanical Engineering for Electrical Engineering.
- Suggested to keep six experiments for thermal engineering lab and six for Hydraulic Machinery lab and improve augmented experiments in basic Civil and Mechanical Engineering Lab for Electrical Engineering.
- Suggested to keep CAD/CAM subject in the Program Electives V.

Agenda 4.5: Discussion on proposed AR19 M.Tech (TE) Program structure, AR 19 M. Tech (TE) Program-I & II semesters syllabus and ratification of the same

BOS members approved the proposed AR19 M.Tech (TE) Program structure, AR 19 M. Tech (TE) Program-I&II semesters syllabus and ratified the same


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Agenda 4.6: Discussion on the courses having focus on employability/ entrepreneurship/ skill development in the programmes of B.Tech (ME), M.Tech (TE) and ratification of the same.

The members of BOS ratified the courses having focus on employability/ entrepreneurship/skill development in B.Tech (ME) and M.Tech (TE) programs.

Agenda 4.7: Discussion on the new courses offered in the B.Tech (ME) and M.Tech (T.E) programs and ratification of the same

The Members of BOS noted the new courses offered in B.Tech (ME) and M.Tech (TE) programs and ratified the same. The percentage of courses introduced in the academic year 2019-20 for B.Tech (ME) Program is 9% and for M.Tech (TE) Program is 27.5 %. The List of courses introduced is enclosed as Annexure-I.

Agenda 4.8: Discussion on the B.Tech (ME), M.Tech (TE) programmes in which Choice Based Credit System (CBCS)/ Elective Course System(ECS) is being implemented and ratification of the same.

The Members of BOS ratified the Choice Based Credit System (CBCS)/Elective Course System that is being implemented in B.Tech (ME) and M.Tech (TE) programs.

Agenda 4.9: Discussion on the percentage of syllabus revision done in B.Tech (ME) and M.Tech (TE) programs and ratification of the same

The syllabus revisions were done in the B.Tech (ME) and M.Tech (TE) programs based on the stakeholder's feedback on Curriculum. The BOS members have approved all the syllabus revisions in the B.Tech (ME) and M.Tech (TE) programs. The percentage of courses revised in the academic year 2019-20 for B.Tech (ME) Program is 31.76% and for M.Tech (TE) Program is 50%. The list of courses revised is enclosed as Annexure-II.

Agenda 4.10: Discussion on the value-added courses to be offered for students and ratification of the same

The BOS members ratified the various value-added courses identified for the students to be offered and suggested to include topics related to thrust areas.


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Agenda 4.11: Analysis of results

The BOS chairperson presented odd semester pass percentage for the A.Y.2019-20. The BOS members noted the same.

Agenda 4.12: Analysis of student's feedback & Action Taken Report

BOS Chairperson expressed that the student feedback & action taken report process initiated at end of each semester

Agenda 4.13: Analysis of stakeholder's feedback on Curriculum

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 in Annexure III.

Agenda 4.14: Any other item with the approval of Chairman.

NIL


Agenda 4.15: Scheduling of next Board of Studies meeting.

The next BOS meeting is tentatively scheduled in the month of November 2019.

Agenda 4.16: Vote of Thanks

Prof Bh. Vara Prasad, BOS Chairperson presented the Vote of thanks.


BOS Chairperson
Head of the Department
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Department of Mechanical Engineering

Annexure-I

List of New Courses in the Academic Year 2019-20

S. No	Program	Semester	Course Code	Course Name
1	B. Tech (ME)	I	191MC1A02	Constitution of India
2	B. Tech (ME)	II	191ES2L07	Mechanical Engineering Workshop
3	B. Tech (ME)	II	191PR2P01	Engineering Exploration Project
4	B. Tech (ME)	V	171ME5E02	Mechanical Vibrations
5	B. Tech (ME)	V	171HS5T06	Employability Skills – III
6	B. Tech (ME)	VI	171HS6T07	Employability Skills – IV
7	B. Tech (ME)	VII	R1641038	Mechatronics Lab
8	B. Tech (ME)	VIII	R164203A	Thermal Equipment Design
9	M. Tech (TE)	I	192HS1T01	Research methodology and IPR
10	M. Tech (TE)	I/II	192MC1A01/192MC2A01	English for Research Paper Writing
11	M. Tech (TE)	I/II	192MC1A02/192MC2A02	Disaster Management
12	M. Tech (TE)	I/II	192MC1A03/192MC2A03	Sanskrit for Technical Knowledge
13	M. Tech (TE)	I/II	192MC1A04/192MC2A04	Value Education
14	M. Tech (TE)	I/II	192MC1A05/192MC2A05	Constitution of India
15	M. Tech (TE)	I/II	192MC1A06/192MC2A06	Pedagogy Studies
16	M. Tech (TE)	I/II	192MC1A07/192MC2A07	Stress Management by Yoga

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17	M. Tech (TE)	I/II	192MC1A08/192MC2A08	Personality Development through Life Enlightenment Skills
18	M. Tech (TE)	I/II	192MC1A09/192MC2A09	Soft Skills
19	M. Tech (TE)	II	192TE2E15	Modeling of I.C. Engines


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Annexure-II

List of Courses Revised in the Academic Year 2019-20

S. No	Program	Semester	Course Code	Course Name
1	B. Tech (ME)	I	191HS1T01	Communicative English
2	B. Tech (ME)	I	191BS1T01	Differential Equations and Linear Algebra
3	B. Tech (ME)	I	191BS1T02	Engineering Physics
4	B. Tech (ME)	I	191BS1L01	Engineering Physics Lab
5	B. Tech (ME)	I	191MC1A01	Environmental Science
6	B. Tech (ME)	I	191ES1L02	Basic Engineering Workshop
7	B. Tech (ME)	II	191BS2T05	Partial Differential Equations & Vector Calculus
8	B. Tech (ME)	II	191BS2T06	Chemistry of Materials
9	B. Tech (ME)	II	191ES2T02	Engineering Graphics and Design
10	B. Tech (ME)	II	191ES2T04	Engineering Mechanics
11	B. Tech (ME)	II	191BS2L04	Engineering Chemistry Lab
12	B. Tech (ME)	V	171ME5T11	Design Of Machine Members-II
13	B. Tech (ME)	V	171ME5E01	Automobile Engineering
14	B. Tech (ME)	V	171ME5L03	Thermal Engineering Lab
15	B. Tech (ME)	VI	171ME6T15	Metrology & Instrumentation
16	B. Tech (ME)	VI	171ME6E06	Non-Destructive Evaluation
17	B. Tech (ME)	VI	171ME6L04	Machine Tools Lab

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18	B. Tech (ME)	VI	171ME6L06	Metrology & Instrumentation Lab
19	B. Tech (ME)	VII	R1641037	CAD/CAM Lab
20	M. Tech (TE)	I	192TE1E05	Gas Turbines
21	M. Tech (TE)	I	192TE1E07	Energy Conservation and Management
22	M. Tech (TE)	I	192TE1L01	Computational Fluid Dynamics Lab-I
23	M. Tech (TE)	I	192TE1L02	Thermal Engineering lab-I
24	M. Tech (TE)	II	192TE2E11	Advanced Power Plant Engineering
25	M. Tech (TE)	II	192TE2E12	Combustion Emissions & Environment
26	M. Tech (TE)	II	192TE2E14	Automotive Engineering
27	M. Tech (TE)	II	192TE2L03	Computational Fluid Dynamics Lab-II
28	M. Tech (TE)	II	192TE2L04	Thermal Engineering Lab-II


BOS Chairperson

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Annexure III

Action Taken Report on Stakeholders Feedback in the Academic Year 2019-20

S. No	Agenda Item No.	Stakeholders Recommended	Action Taken
1	4.13	Better to introduce skill oriented courses so that student may get extra skill.	As suggested from the employer, value added courses will be initiated.
2		Students should have knowledge on turbines and its applications.	As suggested, introduction to performance of turbines and pumps will be introduced into the curriculum.
3		The bridge between the theoretical aspects and real world is project based learning. And this lack of application of knowledge in the real world throughout the course of study is what hinders us from truly appreciating the things that we study.	According to the suggestions, Socially Relevant Project will be introduced to the curriculum as a Mandatory course after discussion made with the experts and deanacademics.
4	4.13	Automotive companies need better drawing analysing capability for product design.	As per suggestion and discussions made, conventional drawing will be introduced to the CAEDP subject.
5	4.13	Students need to be industry ready with skill sets to gain job.	As per suggestion, additional skill programs in association with APSSDC will be initiated to make the student with technical skill.
6	4.4	Better to have knowledge on CAD and its applications.	According to the suggestion, industry drawings will be taught in the curriculum once after the discussion made with dean academics.
7	4.13	Students should have knowledge on water and its utilization in an efficient manner.	According to the feedback, water management will be introduced into the curriculum.

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8	4.4	Better to add advanced manufacturing techniques.	According to the suggestions, lean manufacturing course will be introduced.
9	4.4	It is better student have basic knowledge on how it is implemented.	According to the feedback given, Engineering Exploration project will be introduced to the curriculum once after the discussion made with Professionals and experts.
10	4.12	It is Suggested to increase fieldbased learning.	As per discussion with dean academics, students were encouraged to visit more industrial visits during their curriculum.
11		Please reduce mechanics of solid syllabus.	According to the feedback and discussions made, necessary actions will be implemented.
12		Better to add programming related subjects to syllabus to get IT job.	As per suggestions, other department courses will be given for choice in OE's.
13	4.13	Better to acquire multiple technical skills to perform well in the stream.	As per the suggestions received, CFD lab will be introduced with new experiments.
14		Student requires strong technical knowledge, critical thinking, communication skills are in demand.	According to the suggestion, soft skills will be introduced into the curriculum.
15		Acquiring knowledge on fluids and its interactions and advanced fuels may increase the student ability in the core sector.	As per the suggestions, more advanced courses will be introduced with advanced topics in the electives.
16	4.12	It is better to have interaction with the industry experts on the latest advancements in the industry.	According to the suggestion, Industry – Institute Relation will be made through MoU and industry workshops and webinars will be initiated.


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