

# 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 Agricultural 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	10
9	I	191MC1A01	Environmental Science	25
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	55
14	II	191ES2T03	Essential Electrical & Electronics Engineering	10
15	II	191ES2T04	Engineering Mechanics	10

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16	II	191HS2L02	Communicative English Lab-II	0
17	II	191BS2L04	Engineering Chemistry Lab	50
18	II	191ES2L03	Essential Electrical and Electronics Engineering Lab	100
19	II	191ES2L14	Agricultural Engineering Workshop	100
20	II	191PR2P01	Engineering Exploration Project	100
21	III	171AG3T01	Principles of Soil Science and Agronomy	0
22	III	171AG3T02	Renewable Energy Sources	0
23	III	171AG3T03	Ground Water Hydrology, Wells and Pumps	0
24	III	171ES3T19	Properties and Strength of Materials	0
25	III	171ES3T20	Electrical and Electronics Engineering	0
26	III	171ES3T21	Surveying and Leveling	0
27	III	171AG3L01	Soil Science and Agronomy Field Lab	0
28	III	171ES3L11	Surveying and Leveling Lab	0
29	III	171HS3A10	Employability Skills - I	0
30	III	171HS3A09	Professional Ethics and Human Values	0
31	IV	171AG4T04	Thermodynamics and Refrigeration Systems	0
32	IV	171AG4T05	Heat and Mass Transfer	0
33	IV	171ES4T25	Fluid Mechanics and Open Channel Hydraulics	0
34	IV	171AG4T06	Soil Mechanics	0
35	IV	171AG4T07	Surface Water Hydrology	0
36	IV	171AG4T08	Engineering Properties of Biological Materials and Food Quality	0

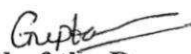
37	IV	171ES4L14	Fluid Mechanics and Open Channel Hydraulics Lab	0
38	IV	171ES4L15	Machine Drawing and Computer Graphics Lab	0
39	IV	171HS4A11	Employability Skills – II	0
40	IV	171HS4A08	Intellectual Property Rights and Patents	0
41	V	171AG5T09	Theory of Structures	0
42	V	171AG5T10	Irrigation and Drainage Engineering	0
43	V	171AG5T11	Agricultural Process Engineering	20
44	V	171AG5T12	Agricultural Extension Techniques and Business Management	0
45	V	171AG5T13	Farm Power and Tractor Systems	20
46	V	171AG5E01	Agro Industries and Bi-Product Utilization	0
47	V	171HS5E01	Managerial Economics and Financial Analysis	20
48	V	171AG5E02	Rural Water Supply, Sanitation and Environmental Engineering	100
49	V	171HS5T06	Employability Skills - III	100
50	V	171AG5L02	Agricultural Process Engineering Lab	0
51	V	171AG5L03	Field Operation and Maintenance of Tractors Lab	20
52	V	171AG5S01	MOOCs – I	100
53	VI	171AG6T14	Soil and Water Conservation Engineering	0
54	VI	171AG6T15	Farm Machinery and Equipment – I	0
55	VI	171AG6T16	Design of Soil, Water Conservation and Farm Structures	0
56	VI	171AG6T17	Post Harvest Engineering for Horticulture Produce	0
57	VI	171AG6E03	GIS and Remote Sensing	0

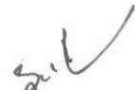
58	VI	171AG6E04	Human Engineering and Safety	0
59	VI	171AG6E05	Production Technology of Agricultural Machinery	10
60	VI	171AG6E06	Green House / Poly House Technology	100
61	VI	171AG6E07	Optimization, Operations Research and Systems Engineering	100
62	VI	171AG6E08	Industrial Engineering and Management	100
63	VI	171HS6T07	Employability Skills - IV	100
64	VI	171AG6L04	Farm Machinery Lab - I	20
65	VI	171AG6L05	Soil and Water Engineering Lab	0
66	VI	171AG6S02	MOOCs - II	100
67	VII	R1641351	Micro Irrigation Engineering	0
68	VII	R1641352	Farm Machinery and Equipment-II	0
69	VII	R1641353	Post- Harvest Engineering for Horticulture Produce	0
70	VII	R1641354	Mechanical Measurements and Instrumentation	0
71	VII	R164135A	Seed Processing and Storage Engineering	0
72	VII	R164135B	Green House Technologies	100
73	VII	R164135C	Food Processing Plant Design and Layout	0
74	VII	R164135D	Watershed Management	0
75	VII	R164135E	Food Packaging Technology	0
76	VII	R164135F	Minor Irrigation and Command area development	0
77	VII	R1641357	Farm Machinery Lab-2	0
78	VII	R1641358	Dairy and Food Engineering Lab	0

  
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79	VIII	R1642351	Design of Agricultural Machinery	20
80	VIII	R1642352	Agricultural Extension Techniques and Business Management	0
81	VIII	R1642353	Agro Industries and Bi-product Utilization	0
82	VIII	R164235A	GIS and remote sensing	0
83	VIII	R164235B	Human engineering and safety	0
84	VIII	R164235C	Production Technology of Agricultural Machinery	0
85	VIII	R1642355	Seminar	0
86	VIII	R1642356	Project	0
Total number of courses in the academic year 2019-2020				86
Number of courses having revision in syllabus content $\geq 20\%$ in the academic year 2019-2020				28
Percentage of syllabus revision carried out in the academic year 2019-2020 = $(28/86) \times 100$				32.55

  
Program Coordinator

  
Head of the Department  
Head of the Department  
Department of Agricultural Engineering  
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Aditya Nagar, ADB Road, Surampalem-533 437, Near Kaklnada, E.G.Dt., Ph: 99498 76662, 99897 76661

## Department of Agricultural Engineering

Date: 24-07-2019

### Minutes of the IV meeting of BoS scheduled on 20-07-2019

The following points are discussed and recommended by the BoS members of Agricultural Engineering Department

#### Agenda 4.1: Welcome address by chairperson BoS

Mr. Y V Krishna Reddy chairman of BoS invited all the distinguished members of BOS to the fourth BOS meeting.

#### Agenda 4.2: Discussion and ratification 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

The BOS members have ratified 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 Ag.E Department.

#### Agenda 4.3: Discussion on new course structure for AR19 as per the guidelines of AICTE and APSCHE for B.Tech (Ag.E) program.

1. Suggested to avoid MS (Management Science) course, if possible.
2. Suggested to keep all fundamental courses as PCC (Professional Core Course's), which are essential for higher education and public service sectors.
3. Suggested to merge the courses theory of machines and thermodynamics as a new subject titled "theory and design of agricultural machinery" with concerned laboratory.
4. Suggested to merge the courses properties and strength of materials and soil mechanics to form a new subject titled mechanics of materials.
5. Suggested to change the title of farm machinery and equipment to Agricultural machinery and equipment.
6. Suggested to merge farm machinery and equipment -1 & 2 as a single course and titled as Agricultural machinery and equipment.

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7. Suggested to split the course design of soil and water conservation and farm structures as design of soil and water conservation structures and agricultural structures.
8. Suggested to change the title of heat and mass transfer to heat transfer and refrigeration system and include the lab laboratory also.
9. Suggested to interchange Groundwater Hydrology subject in III semester with Fluid Mechanics and Open Channel Hydraulics in IV semester courses as well as labs.
10. Suggested to shift dairy and food engineering subject from VI semester to VII semester.
11. Suggested to have the subjects Soil Dynamics in Tillage and Traction and Production Technology in Agricultural Machinery as professional elective 1 and Professional Elective 2 respectively in Farm Machinery Engineering track.
12. Suggested to include Testing of Agricultural Machinery syllabus by referring various testing procedures available at Southern Region Farm Machinery Testing and Training Institute to Design of Agricultural Machinery subject in professional Elective 3 of Farm Machinery Engineering track.
13. Suggested to incorporate two subjects titled as Agricultural Structures and Wastewater Treatment and Management as PE 2 and 4 respectively in Soil and Water Conservation Engineering track.
14. Suggested to rearrangement of subjects in Soil and Water Conservation Engineering tracks in the order of Theory of Structures, Agricultural Structures, Watershed Planning and Management, Wastewater Treatment and Management, Micro Irrigation Engineering and Introduction to Remote Sensing as PE 1, 2, 3, 4, 5 and 6 respectively.
15. Suggested to have Heat Transfer and Refrigeration System instead of Heat and Mass Transfer as Profession Core Course.
16. Suggested to keep Heat Transfer and Refrigeration Systems subject in 4<sup>th</sup> semester instead of Engineering Properties of Biological Materials and Food Quality (EPBM&FQ) and EPBM as single subject can be kept in Professional Elective 1 of Agricultural Process and Food Engineering track.
17. Suggested to incorporate Food Quality syllabus of EPBM&FQ in Agricultural Process Engineering (APE) subject and also that subject is titled as Agricultural Process Engineering and Food Quality (APE&FQ).

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**Agenda 4.4: Discussion on proposed AR19 B. Tech (Ag.E) program of I and II Semester syllabus and ratification of the same.**

Discussed on I and II semesters syllabus and accepted the same.,

**Agenda 4.5: Discussion on the courses having focus on employability/entrepreneurship/skill development in the B.Tech (Ag.E) program and ratification of the same.**

The members of BOS ratified the courses having focus on employability/entrepreneurship/skill development in the B.Tech. (Ag.E). program.

**Agenda 4.6: Discussion on the new courses offered in the B.Tech. (Ag.E), program and ratification of the same**

The BOS members have discussed and approved the new courses introduced in all the B.Tech. (Ag.E), program. The percentage of new courses introduced in the academic year 2019-2020 for B. Tech (Ag.E) is 15.12%. The list of new courses is enclosed as Annexure I.

**Agenda 4.7: Discussion on the B.Tech (Ag.E), Program 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 System (CBCS)/elective course system that is being implemented in B.Tech (Ag.E), program.

**Agenda 4.8: Discussion on the percentage of syllabus revision done in all the B.Tech. (Ag.E) programs and ratification of the same.**

BoS members discussed and ratified the percentage revision in the courses. The percentage of courses revised in the academic year 2019-2020 for B. Tech (Ag.E) is 32.55%. The percentage of the courses revised is enclosed as Annexure II.

**Agenda 4.9: Discussion on the value-added courses offered for students and ratification of the same.**

Members of BOS ratified the various value- added courses identified for the students to be offered.

**Agenda 4.10: Analysis of Results**

The BOS Chairperson presented the odd semester pass percentage for the A.Y.2018-2019. The BOS members noted the same.

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**Agenda 4.11: Analysis of Students Feedback & Action Taken Report**

Student feedback and action report is presented by BoS Chairperson to the BoS members and BoS members approved the same.

**Agenda 4.12: 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 advised to incorporate the suggestions as per the feasibility. The Action Taken Report is enclosed as Annexure-III.

**Agenda 4.13: Any other items with the approval of chairman**

Suggested to inculcate self-learning practices in students with the adoption of innovative teaching methods.

**Agenda 4.14: Scheduling of the next BOS meeting**

After discussions with BOS members, the next BOS meeting will be planned in the month of November 2019.

**Agenda 4.15: Vote of Thanks**

Mr. Y.V. Krishna Reddy, BOS chairperson presented the Vote of thanks.

  
BoS Chairperson  
Head of the Department  
Department of Agricultural Engineering  
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## Department of Agricultural Engineering

### Annexure-I

#### List of New Courses in the Academic Year 2019-2020

S. No	Program	Semester	Course Code	Course Name
1	B. Tech (Ag.E)	I	191MC1A02	Constitution of India
2	B. Tech (Ag.E)	II	191ES2T02	Engineering Graphics and Design
3	B. Tech (Ag.E)	II	191ES2L03	Essential Electrical and Electronics Engineering Lab
4	B. Tech (Ag.E)	II	191ES2L14	Agricultural Engineering Workshop
5	B. Tech (Ag.E)	II	191PR2P01	Engineering Exploration Project
6	B. Tech (Ag.E)	VI	171AG5E02	Rural Water Supply, Sanitation and Environmental Engineering
7	B. Tech (Ag.E)	VI	171AG5S01	MOOCs-I
8	B. Tech (Ag.E)	VI	171HS5T06	Employability Skills - III
9	B. Tech (Ag.E)	VI	171AG6E06	Green House / Poly House Technology
10	B. Tech (Ag.E)	VI	171AG6E07	Optimization, Operations Research and Systems Engineering
11	B. Tech (Ag.E)	VI	171AG6E08	Industrial Engineering and Management
12	B. Tech (Ag.E)	VI	171AG6S02	MOOCs - II
13	B. Tech (Ag.E)	VI	171HS6T07	Employability Skills - IV

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## Department of Agricultural Engineering

### Annexure-II

#### List of Revised Courses in the Academic Year 2019-2020

Times	Program	Semester	Course Code	Course Name
1	B. Tech (Ag.E)	I	191HS1T01	Communicative English
2	B. Tech (Ag.E)	I	191BS1T01	Differential Equations and Linear Algebra
3	B. Tech (Ag.E)	I	191BS1T02	Engineering Physics
4	B. Tech (Ag.E)	I	191BS1L01	Engineering Physics Lab
5	B. Tech (Ag.E)	I	191MC1A01	Environmental Science
6	B. Tech (Ag.E)	II	191BS2T05	Partial Differential Equations and Vector Calculus
7	B. Tech (Ag.E)	II	191BS2T06	Chemistry of Materials
8	B. Tech (Ag.E)	II	191ES2T02	Engineering Graphics and Design
9	B. Tech (Ag.E)	II	191BS2L04	Engineering Chemistry Lab
10	B. Tech (Ag.E)	V	171AG5T11	Agricultural Process Engineering
11	B. Tech (Ag.E)	V	171AG5T13	Farm Power and Tractor Systems
12	B. Tech (Ag.E)	V	171HS5E01	Managerial Economics and Financial Analysis
13	B. Tech (Ag.E)	V	171AG5L03	Field Operation and Maintenance of Tractors Lab
14	B. Tech (Ag.E)	VI	171AG6L04	Farm Machinery Lab - I
15	B. Tech (Ag.E)	VIII	R1642351	Design of Agricultural Machinery

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BoS Chairperson  
Head of the Department

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## Department of Agricultural Engineering

### Annexure-III

#### Action Taken Report on Stakeholders Feedback in the Academic Year 2019-2020

S. No	Agenda Item No.	Stakeholders Recommended	Action Taken
1	4.11	Suggested to add the courses to improve employability skills for better employability.	As per suggestions, Employability Skills- III & IV will be included in the course curriculum.
2	4.8	Suggested to include courses which helps the student to improve their skills.	VAC will be included in the course curriculum as per suggestions.
3	4.11	Suggested to add machine and structure, cam follower, and springs & removal of governors topics in T&DAM course.	As per suggestions, modifications will be included in the course T& DAM.
4		Suggested to add advanced machine designing course	As per suggestions, Computer Aided Drafting Lab will be included in the course curriculum
5	4.3	Suggested to split the course design of soil and water conservation and farm structures as design of soil and water conservation structures and agricultural structures.	As per suggestions, modifications will be included in the course curriculum.
6	4.11	Suggested to keep all the experiments in order in survey and levelling lab as per theory.	As per suggestions, changes will be included in the course curriculum.
7	4.3	Suggested to remove food quality topic from EPBM and include in APE.	As per suggestions, modifications will be included in EPBM & APE courses.
8	4.11	Suggested to add courses related to watershed and unit hydrographs.	As per suggestions, Watershed Management will be included in the course curriculum.
9	4.3	Suggested to merge farm machinery and equipment -1 & 2 as a single course and titled as Agricultural machinery and equipment.	Suggested to merge farm machinery and equipment -1 & 2 as a single course and titled as Agricultural machinery and equipment.
10	4.10	More exposure to field visits to gain practical knowledge.	As per suggestions, more field visits will be conducted in coming semesters.

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11		Suggested to reduce the syllabus of principle of agronomy and soil science course.	As per suggestions and discussions made, certain topics in soil science and agronomy removed in the subject of principle of agronomy and soil science.
12		Suggested to include more field visits/ industrial visits.	As per suggestions, required steps will be taken.

  
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