



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 2021-2022

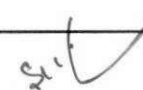
S.No	Semester	Course Code	Course Name	% of content revised for the existing year
1	I	201HS1T01	Communicative English	0
2	I	201BS1T01	Differential equations and Linear algebra	0
3	I	201BS1T02	Engineering Physics	0
4	I	201ES1T04	Principles of Agronomy and Soil Science	0
5	I	201ES1T05	Engineering Graphics	0
6	I	201HS1L01	Communicative English Lab	0
7	I	201BS1L01	Engineering Physics Lab	0
8	I	201ES1L04	Soil Science and Agronomy Field Lab	0
9	I	201MC1T01	Environmental Science	0
10	I	201BS2T05	Partial Differential Equations and Vector Calculus	0
11	II	201BS2T08	Chemistry of Materials	0
12	II	201ES2T06	Engineering Mechanics	0
13	II	201ES2T08	Programming for Problem Solving Using C	0
14	II	201ES2L07	Engineering Workshop	0
15	II	201ES2L12	Computer Aided Drafting Lab	0
16	II	201HS2L02	Professional communications skills Lab	0
17	II	201BS2L05	Engineering Chemistry Lab	0

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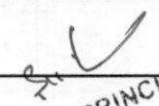
18	II	201ES2L10	Programming for Problem Solving Using C	0
19	II	201MC2T02	Constitution of India	0
20	III	201BS3T12	Integral Transforms and Applications of Partial Differential Equations	0
21	III	201AG3T01	Surveying and Levelling	0
22	III	201AG3T02	Fluid Mechanics and Open Channel Hydraulics	0
23	III	201AG3T03	Thermodynamics, Refrigeration and Air Conditioning	30
24	III	201AG3T04	Strength of Materials	5
25	III	201AG3L01	Surveying and Levelling Lab	0
26	III	201AG3L02	Fluid Mechanics and Open Channel Hydraulics Lab	0
27	III	201AG3L03	Thermodynamics, Refrigeration and Air Conditioning Lab	100
28	III	201SO3L10	1) Computer Aided Manufacturing	100
29	III	201SO3L11	2) Computer Aided Design using SolidWorks	100
30	III	201MC3T03	Biology for Engineers	0
31	IV	201ES4T21	Soil Mechanics	100
32	IV	201BS4T15	Numerical Methods and Statistical Techniques	0
33	IV	201AG4T05	Heat and Mass Transfer	0
34	IV	201AG4T06	Tractor Systems and Controls	30
35	IV	201HS4T07	Entrepreneurship Development and Business Management	100
36	IV	201ES4L17	Soil Mechanics Lab	15
37	IV	201AG4L04	Tractor Systems and Controls Lab	30
38	IV	201AG4L05	Heat and Mass Transfer Lab	0
39	IV	201SC4L22	1) Food Quality and Control	100
40	IV	201SC4L23	2) Analysis/Simulation using MATLAB	100
41	IV	201MC4T04	Essence of Indian Traditional Knowledge	0

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42	V	191AG5T09	Strength of Materials	0
43	V	191AG5T10	Theory and Design of Agricultural Machinery	30
44	V	191AG5T11	Agricultural Process Engineering and Food Quality	20
45	V	191AG5E01	Engineering Properties of Biological Materials	20
46	V	191AG5E02	Mechanical Measurement and Instrumentation	0
47	V	191AG5E03	Theory of Structures	0
48	V	191CE5O01	Basic Concrete Technology	100
49	V	191EE5O01	Electrical Safety	100
50	V	191EE5O02	Electrical Materials	100
51	V	191EE5O03	Basic Electrical Measurements	10
52	V	191ME5O02	Fundamentals of Mechanical Engineering	100
53	V	191ME5O03	Supply Chain Management	100
54	V	191ME5O04	3D Printing	100
55	V	191ME5O05	Entrepreneurship Development and Incubation	100
56	V	191EC5O01	Signals & Systems	100
57	V	191EC5O02	Digital Electronics and Logic Design	100
58	V	191EC5O03	Semi conductor devices	100
59	V	191CS5O01	Data Structures	100
60	V	191CS5O02	Object Oriented Programming through C++	100
61	V	191CS5O03	Java Programming	100
62	V	191CS5O04	R Programming	100
63	V	191IT5O01	Data Base Management Systems	100
64	V	191IT5O02	Computer Graphics	100
65	V	191MI5O01	Overview of Mining	100


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66	V	191PT5O01	Process Intensification in Petroleum Industry	100
67	V	191PT5O02	Fundamentals of Petroleum Industry	100
68	V	191AG5L07	Soil Mechanics Lab	100
69	V	191AG5L08	Theory and Design of Agricultural Machine LAB	100
70	V	191AG5L09	Agricultural Process Engineering and Food Quality LAB	10
71	V	191HS5T06	Employability Skills - III	0
72	V	191PR5P02	Socially Relevant Project	100
73	V	191MC5A08	Intellectual Property Rights and Patents	0
74	VI	191AG6T12	Irrigation and Drainage Engineering	10
75	VI	191AG6T13	Post-Harvest Engineering for Horticultural Produce	5
76	VI	191AG6T14	Agricultural Machinery and Equipment	40
77	VI	191AG6E06	Human Engineering and Safety	10
78	VI	191AG6E04	Agricultural Structures	10
79	VI	191AG6E05	Agro Industries and By- Product Utilization	10
80	VI	191AG6E07	Design of Agricultural Machinery	30
81	VI	191AG6E09	Watershed Planning and Management	15
82	VI	191AG6E08	Seed Processing and Storage Engineering	15
83	VI	191CE6O02	Disaster Management	100
84	VI	191EE6O04	Energy Audit and Conservation Management	100
85	VI	191EE6O05	Non Conventional Energy resources	100
86	VI	191ME6O08	Introduction to Hydraulics and Pneumatics	100
87	VI	191ME6O09	3D Printing	100
88	VI	191ME6O06	Robotics	100
89	VI	191ME6O09	Management Science	100


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90	VI	191ME6O07	Biomedical Instrumentation	100
91	VI	191ME6O08	ECAD Tools	100
92	VI	191CS6O05	Python Programming	100
93	VI	191CS6O06	Operating Systems	100
94	VI	191CS6O07	Web Technologies	100
95	VI	191CS6O08	Cyber Security	100
96	VI	191CS6O09	AR / VR	100
97	VI	191IT6O03	Computer Organization	100
98	VI	191IT6O04	AI Tools & Techniques	100
99	VI	191MI6O03	Electrical Equipment's in Mines	100
100	VI	191PT6O03	Unconventional Hydrocarbon Resources	100
101	VI	191PT6O04	Asset Management	100
102	VI	191ME6O12	Entrepreneurship Development and Incubation	100
103	VI	191AG6L10	Irrigation and Drainage Engineering LAB	100
104	VI	191AG6L11	Agricultural Machinery and Equipment Lab	30
105	VI	191HS6T07	Employability Skills – IV	0
106	VI	191MC6A09	Professional Ethics and Human Values	0
107	VII	171AG7T18	Micro Irrigation Engineering	0
108	VII	171AG7T19	Farm Machinery and Equipment – II	0
109	VII	171AG7T20	Dairy and Food Engineering	0
110	VII	171ES7T26	Mechanical Measurements and Instrumentation	0
111	VII	171AG7E09	Seed Processing and Storage Engineering	0
112	VII	171AG7E10	Food Processing Plant Design and Layout	0
113	VII	171AG7E11	Food Packaging Technology	0

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114	VII	171AG7E12	Aqua Cultural Engineering	0
115	VII	171AG7E13	Soil Dynamics in Tillage and Traction	0
116	VII	171AG7E14	Computational Fluid Dynamics	0
117	VII	171AG7L06	Farm Machinery Lab – II	0
118	VII	171AG7L07	Dairy and Food Engineering Lab	0
119	VII	171AG7P01	Industry Oriented (Internship) Minor Project	0
120	VIII	171AG8E15	Hydraulic Devices and Control	0
121	VIII	171AG8E16	Watershed Management	0
122	VIII	171AG8E17	Design of Agricultural Machinery	0
123	VIII	171AG8O01	Digital Control systems	0
124	VIII	171AG8O02	Industrial Pollution Control Engineering	0
125	VIII	171AG8O03	Mechatronics	0
126	VIII	171AG8O04	Water Resources Systems Planning and Management	0
127	VIII	171CS8O04	Operations Research	0
128	VIII	171AG8O05	Image Processing Techniques	0
129	VIII	171AG8P02	Major Project	0
Total number of courses in the academic year 2021-2022				129
Number of courses having revision in syllabus content $\geq 20\%$ in the academic year 2021-2022				59
Percentage of syllabus revision carried out in the academic year 2021-2022 = $(25/88) \times 100$				45.73

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Program Coordinator

N.V. God
Head of the Department

Head of the Department
Department of Agricultural Engineering
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Department of Agricultural Engineering

Date: 03-05-2022

Minutes of the VIII meeting of BOS scheduled on 25-04-2022 and 30-04-2022

The VIII BOS meeting of Agricultural Engineering was virtually held in Microsoft Teams on 25-04-2022 and 30-04-2022 at 9.30 AM. Dr. N.V. Gowtham Deekshithulu, Chairperson presided over the meeting.

Agenda 8.1: Welcome address by chairperson BOS.

Dr. N.V. Gowtham Deekshithulu, Chairperson of BOS, invited all the distinguished members of BOS to the VIII BOS meeting.

Agenda 8.2: Ratification of minutes of VII BOS meeting.

The BOS members accepted and ratified the minutes of VII BOS meeting unanimously.

Agenda 8.3.: Discussion on proposed AR20 B. Tech Program – V, VI, VII & VIII semesters syllabus and ratification of the same.

The BOS members approved the AR20 B.Tech. (Ag.E) V, VI, VII and VIII semesters syllabus after making the following changes in the proposed syllabi.

1. Suggested to change CO's, add topics on creep, epicyclic gear train, speed of governors, coefficient of fluctuation of speed and energy, design of flywheel and add textbook in Theory of Machines.
2. Suggested to add minor changes in COB's, CO's and add direct and indirect methods of stream flow measurements, Simple storm and complex storm and Unit hydrograph derivation in Watershed Hydrology.
3. Suggested to add Modified Penman Monteith Method in Evapotranspiration estimation methods, List of irrigation water control & diversion structures instead of irrigation structures and add new text books and remove topics of Lacey's and Kennedy's theory in design of irrigation canal capacity in Irrigation and Drainage Engineering.
4. Suggested to improve COB's, CO's and to add head loss calculation of the sprinkler and drip irrigation system topics in Sprinkler and Micro Irrigation Systems.

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5. Suggested to add mean areal rainfall measurement topic instead of rainfall measurement and shift exercise on unit hydrograph lab from augmented experiments to main list of experiments in Watershed Hydrology Lab.
6. Suggested to change CO5 in Irrigation and Drainage Engineering Lab.
7. Suggested a minor change in CO's and add term tillage implements instead of tillage implement, levelers instead of levelled, combine harvester instead of combine, types of threshers and losses and troubleshooting in Farm Machinery and Equipment.
8. Suggested to add splash erosion, roughness coefficient instead of roughness and add a book from reference books to textbooks in Soil and Water Conservation Engineering.
9. Suggested to add methods of drying topic in Post Harvest Engineering of Cereals, Pulses and Oil Seeds.
10. Suggested to add wider and narrow tools topic in Mechanics of Tillage and Traction.
11. Suggested to add a minor change in COB and add planning of warabandhi irrigation system, Water control and diversion structures topics in Management of Canal Irrigation System.
12. Suggested to change COB1 and CO1 and add CIP principals- techniques, FSSAI standards and regulations for dairy products topics in Dairy and Food Engineering.
13. Suggested to add Short-term harvesting techniques - contour bunds, semicircular hoop, trapezoidal bunds, graded bunds, rock catchment and ground catchment, Design of Gabion structures, drop inlet spillway- design criteria topics in Water Harvesting and Soil Conservation Structures.
14. Suggested to change Wastewater treatment and management course title as Agricultural Structures and Protected Cultivation.
15. Suggested to add combine harvester instead of combine and add experiment on land levelling using the laser guided land leveler in augmented experiments list in Farm Machinery and Equipment Lab.
16. Suggested to add visit to watershed project for studying erosion control and water conservation measures in list of experiments and move Study of rainfall simulator for erosion assessment to list of augmented experiments and add Field Manual on Watershed Management in Soil and Water Conversation Engineering Lab.


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4. Suggested to add simulation topics and keep it as a complete unit in Computer Aided Manufacturing course.
5. Suggested to keep Entrepreneurship Development and Business Management course under HSS category.
6. Suggested to elaborate HACCP concept in skill oriented course in Food Quality and Control.

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

The BOS members approved the list of value-added courses offered to students and ratified the same.

Agenda 8.6: 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 2021-2022 for B. Tech (Ag.E) is 15.73%. The list of new courses is enclosed as Annexure I.

Agenda 8.7: Discussion on the percentage of the syllabus revision done in the B. Tech (Ag.E) program 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 2021-2022 for B. Tech (Ag.E) is 45.7%. The percentage of the courses revised is enclosed as Annexure II.

Agenda 8.8: 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 8.9: 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.

The members discussed and approved the choice-based credit system for all the B.Tech. (Ag.E), program.


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Agenda 8.10: Analysis of Feedback on Curriculum from Stakeholders.

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 8.11: Analysis of results

The BOS chairperson presented the results. The BOS members appreciated the faculty for achieving better pass percentages

Agenda 8.12: Analysis of student's feedback

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

Agenda 8.13: Any other item/s with the approval of chairperson

Suggested to keep more basic professional core courses before starting of professional electives.

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

Agenda 8.14: Scheduling of next BOS meeting

After discussions with BOS members, the next BOS meeting will be planned in the month of March/April 2023.

Agenda 8.15: Vote of Thanks

Dr. N. V. Gowtham Deekshithulu, BOS chairperson presented the Vote of thanks.

N.V. Gowtham
BoS Chairperson
Head of the Department

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Annexure-I

List of New Courses in the Academic Year 2021-2022

S. No	Program	Semester	Course Code	Course Name
1	B. Tech (Ag.E)	III	201AG3L03	Thermodynamics, Refrigeration and Air Conditioning Lab
2	B. Tech (Ag.E)	III	201SO3L10	1) Computer Aided Manufacturing
3	B. Tech (Ag.E)	III	201SO3L11	2) Computer Aided Design using SolidWorks
4	B. Tech (Ag.E)	IV	201ES4T21	Soil Mechanics
5	B. Tech (Ag.E)	IV	201HS4T07	Entrepreneurship Development and Business Management
6	B. Tech (Ag.E)	IV	201SC4L22	1) Analysis/Simulation using MATLAB
7	B. Tech (Ag.E)	IV	201SC4L23	2) Food Quality and Control
8	B. Tech (Ag.E)	V	191AG5O01	Basic Crop Production Practices
9	B. Tech (Ag.E)	V	191AG5L07	Soil Mechanics Lab
10	B. Tech (Ag.E)	V	191AG5L08	Theory and Design of Agricultural Machine LAB
11	B. Tech (Ag.E)	V	191PR5P02	Socially Relevant Project
12	B. Tech (Ag.E)	VI	191AG6O02	Weather Forecast in Agriculture
13	B. Tech (Ag.E)	VI	191AG6O03	Bio-Energy Systems Design and Applications
14	B. Tech (Ag.E)	VI	191AG6L10	Irrigation and Drainage Engineering LAB

N.V. Gadd

BoS Chairperson
Head of the Department

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Annexure-II

List of Revised Courses in the Academic Year 2021-2022

S. No	Program	Semester	Course Code	Course Name
1	B. Tech (Ag.E)	III	201AG3T03	Thermodynamics, Refrigeration and Air Conditioning
2	B. Tech (Ag.E)	IV	201AG4T06	Tractor Systems and Controls
3	B. Tech (Ag.E)	IV	201AG4L04	Tractor Systems and Controls Lab
4	B. Tech (Ag.E)	V	191AG5T10	Theory and Design of Agricultural Machinery
5	B. Tech (Ag.E)	V	191AG5T11	Agricultural Process Engineering and Food Quality
6	B. Tech (Ag.E)	V	191AG5E01	Engineering Properties of Biological Materials
7	B. Tech (Ag.E)	VI	191AG6T14	Agricultural Machinery and Equipment
8	B. Tech (Ag.E)	VI	191AG6E07	Design of Agricultural Machinery
9	B. Tech (Ag.E)	VI	191AG6L11	Agricultural Machinery and Equipment Lab

N.V. Ged

BoS Chairperson

Head of the Department

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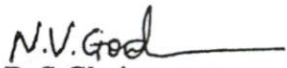
Annexure-III

Action Taken Report on Stakeholders Feedback in the Academic Year 2021-2022

S. No	Agenda Item No.	Stakeholders Recommended	Action Taken
1	8.10	Suggested to include more Skill Oriented Courses for better employability.	As per suggestions, Skill Oriented Courses will be included in course curriculum.
2	8.3	Suggested to add Modified Penman Monteith Method in Evapotranspiration estimation methods in Irrigation and Drainage Engineering.	As per suggestions, Modified Penman Monteith Method in Evapotranspiration estimation methods will be included in Irrigation and Drainage Engineering.
3		Suggested to add FSSAI standard codes for layout of Food Processing Plant in Food Processing Plant Design and Layout.	As per suggestions, FSSAI standard codes for layout of Food Processing Plant in Food Processing Plant Design and Layout.
4	8.10	More exposure to field visits to gain practical knowledge.	As per suggestions, more field visits will be conducted in coming semesters.
5	8.3	Suggested to add FSSAI standards and regulations for dairy products topics in Dairy and Food Engineering.	As per suggestions, FSSAI standards and regulations for dairy products topics will be included in Dairy and Food Engineering.
6	8.10	Suggested to bring more core companies for Internships and placements.	As per suggestions, necessary steps will be taken.
7	8.3	Suggested to add head loss calculation of the sprinkler and drip irrigation system topics in Sprinkler and Micro Irrigation Systems.	As per suggestions, head loss calculation of the sprinkler and drip irrigation system topics will be included in Sprinkler and Micro Irrigation Systems.
8	8.10	For better understanding of Thermodynamics, Refrigeration and Air Conditioning subject, practical knowledge is required.	As per suggestions, Thermodynamics, Refrigeration and Air Conditioning Lab will be included in course curriculum.

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9	8.3	Suggested to add direct and indirect methods of stream flow measurements, Simple storm and complex storm and Unit hydrograph derivation in Watershed Hydrology.	As per suggestions, mentioned topics will be included in Watershed Hydrology.
10	8.12	Suggested to modify some topics in Irrigation and Drainage Engineering.	As per suggestions, modifications will be included in course curriculum.
11		Suggested free access to online journals	As per suggestions and discussions made, Free access facility was provided to faculty and research scholars and students. Recently college has introduced mLibrary for off-campus access to cater its resources and services to the user community effectively.
12		Suggested to arrange some guest lectures with industry experts.	As per suggestions, guest lectures will be included in coming semesters.


 N.V. God
 BoS Chairperson
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