

Annexure-V



VIGNAN'S
Foundation for Science, Technology & Research
(Deemed to be University)
-Estd. u/s 3 of UGC Act 1956

DEPARTMENT OF APPLIED ENGINEERING

CIRCULAR

Date: 25.03.2024

Department of Applied Engineering is going to conduct Board of Studies (BoS) meeting for the B.Tech (Ag. Engg) programme on **28.03.2024** from 4.00 pm in blended mode. <https://meet.google.com/isw-vuxf-shs>. All the members are requested to make it convenient to attend the meeting.

The members are

Sl. No	Name	Position
1.	Dr. N. Narayan Rao , Associate professor, HoD, AE	-Chairperson
2.	Prof. T. Ramesh Babu , Dean School of Agriculture and Food Technology, VFSTR	-Member
3.	Prof. P. S Rao , Department of Agricultural and Food Engineering, IIT KGP	-Member(Academic Institution)
4.	Dr. D. Prassanna , Founder & CEO, Way2Agribusiness India Pvt. Ltd; Bengaluru	-Member (Industry)
5.	Mr. Nilesh Chavan , Senior Process Engineer, Tetra Pak Southeast Asia Pvt. Ltd	-Member (industry)
6.	Mr. A.S. Subba Rao , Sr. Manager-Agronomy, SBU-South NETAFIM, India	-Invited Member (Industry)
7.	Dr. K.P. Vidhu , Joint Director NIPHM, Hyderabad	-Invited Member (Research Institution)
8.	Dr. P. L. N. Varma , Professor & Head, Department of Mathematics and Statistics	-Member
9.	Dr. Hadole Mahesh Vinayak , Assistant Professor & BoR, AE	-Member (Dean R&D nominee)
10.	Dr. Sanket Sawant , Assistant Professor & BoE, AE	-Member (School Dean nominee)
11.	Dr. T. Prabhakar , Assistant Professor, AE	-Member
12.	Dr. Ayyanna D. S. , Assistant Professor & BoA, AE	-Member Secretary

Agenda of the BoS Meeting:

1. Reconstitution of board of studies committee.
2. Approval for change of the name of department as an Agricultural Engineering.
3. Modification in the eligibility criteria for the admission of B. Tech (Agril. Engg.).
4. Revision of course curriculum.
5. Any other points with permission of chairperson.

N. Narayan Rao
Chairperson

Dr. N. NARAYAN RAO
Associate Professor & Head,
Department of Applied Engineering
VFSTR (Deemed to be) University
Vadlamudi, Guntur. AP. - 522 213.



DEPARTMENT OF AGRICULTURAL ENGINEERING

Date: 28.03.2024

Minutes of Board of Studies Meeting

Board of Studies (BoS) meeting of B. Tech. (Agricultural Engineering) was conducted on 28.03.2024 in blended mode from 4.00 pm to 6.30 pm. The following was the agenda points of the meeting.

Agenda of the BoS Meeting:

1. Reconstitution of board of studies committee.
2. Approval for change of the name of department as an Agricultural Engineering.
3. Modification in the eligibility criteria for the admission of B. Tech (Agril. Engg.).
4. Revision of course curriculum.
5. Any other points with permission of chairperson.

The following members were present either thorough offline or online.

Sl .N	Name and designation of the Member	Position	Signature
1.	Dr. N. Narayan Rao, Associate professor, HoD, AE	Chairperson	
2.	Prof. T. Ramesh Babu, Dean School of Agriculture and Food Technology, VFSTR	Member	
3.	Prof. P. S Rao, Department of Agricultural and Food Engineering, IIT KGP	Member (Academic Institution)	Online
4.	Dr. D. Prassanna, Founder & CEO, Way2Agribusiness India Pvt. Ltd; Bengaluru	Member (Industry)	Online
5.	Mr. Nilesh Chavan, Senior Process Engineer, Tetra Pak Southeast Asia Pvt. Ltd	Member (Industry)	Absence
6.	Mr. A.S. Subba Rao, Sr. Manager-Agronomy, SBU-South NETAFIM, India	Invited Member (Industry)	Online
7.	Dr. K.P. Vidhu, Joint Director NIPHM, Hyderabad	Invited Member (Research Institution)	Online
8.	Dr. P. L. N. Varma, Professor & Head, Department of Mathematics and Statistics	Member	
9.	Dr. Hadole Mahesh Vinayak, Assistant Professor & BoR, AE	Member (Dean R & D nominee)	
10.	Dr. Sanket Sawant, Assistant Professor & BoE, AE	Member (School Dean nominee)	
11.	Dr. T. Prabhakar, Assistant Professor, AE	Member	
12.	Dr. Ayyanna D. S. , Assistant Professor & BoA, AE	Member Secretary	

Mr. Nilesh Chavan., Senior Process Engineer, Tetra Pak Southeast Asia Pvt. Ltd was unable to join meeting due to network issue.

Chairperson **Dr. N. Narayan Rao**, Associate professor and Head, department of Applied Engineering, VFSTR opened the meeting by welcoming all external and internal members present for the meeting.

Dr. Ayyanna D. S. briefed about the agenda of meeting and initiated the presentation.

The following points were discussed in the BoS meeting:

Agenda 1: Reconstitution of the Board of Study Members

Dr. Ayyanna introduced reconstituted board of studies members and requested to give their opening remarks.

Discussion:

Dr. D. Prassanna, Mr. A. S Subbarao, Dr. K. P. Vidhu, Prof. P. S Rao and Prof. T. Ramesh Babu gave opening remarks by acknowledging invitation and agreed as a board of study member. All the members mentioned that there is huge scope for Agricultural Engineers and looking forward to guide and contribute as much as a BoS member.

Resolutions: Reconstitution of the Board of Study Members was approved.

Agenda 2: Changing the name of department as an Agricultural Engineering

Dr. Ayyanna has briefly presented the journey of Applied Engineering department and emphasized on the reasons of changing department name as an Agricultural Engineering.

Discussion:

In view of cease of admissions in Automobile Engineering and merging of Agricultural Engineering into School of Agriculture and Food Technology, all the members have agreed to change the department name as an Agricultural Engineering.

Resolutions: Changing the name of department as an Agricultural Engineering was approved.

Agenda 3: Modification in the eligibility criteria for the admission of B. Tech (Agril. Engg.)

Dr. Hadole Mahesh has presented the current AICTE norms, Gujarat SAU's decision on eligibility criteria for the admission of B. Tech (Agril. Engg.). He further presented declining graph of admissions in past five years into B. Tech (Agril. Engg.) in VFSTR. He mentioned that there are permissions given in above norms and decisions to allow Biology-Physics-Chemistry (Bi-P-C) group students of 12th

standard to take admission for B. Tech (Agril. Engg.) with provision of Bridge Course of Mathematics as a Non-gradual course.

Discussion:

In view of facts presented and changing admission criteria in other universities, all members have agreed to allow Bi-P-C students. However, all members have commonly acknowledged the importance of mathematics for B. Tech. (Agril. Engg.). Prof. T. Ramesh Babu mentioned the compatibility of Bi-P-C students for this programme. Dr. K. P. Vidhu commented that there is nothing wrong to change eligibility, however, he suggested there should be proper assessment of Bridge Mathematics course so as to bring Bi-P-C students compatible for B. Tech. (Agril. Engg.). Mr. A. S Subbarao also accepted the provision to allow Bi-P-C Students and suggested that there should be fundamental course on Biology for non Bi-P-C students as these are equally important for them as an Agricultural Engineer (Vice versa).

Resolutions: Modification in the eligibility criteria for the admission of B. Tech (Agril. Engg.) was commonly approved by all the members.

Agenda 4: Revision of course curriculum of B. Tech (Agril. Engg.)

In view of change in eligibility criteria, Dr. Hadole Mahesh has presented the proposed change in the semester wise (I to VIII) course structure after inclusion of Bridge Course on Mathematics. Further, Dr. P. L. N. Varma, have presented the prepared course content for Bridge course on Mathematics for Bi-P-C students. He also highlighted the modifications in current Engineering Mathematics courses in view of their importance to Agricultural Engineering.

Discussion:

All the members have accepted the content for the Bridge course and changes in the current Engineering mathematics. Dr. T. Ramesh Babu suggested to maintain maximum 25 credit load to each semester. Dr. K. P. Vidhu commented on 10 number of subjects in some semester. Mr. A. S. Subbarao and Dr. K. P. Vidhu suggested to consider designed skill development course of Govt. organization for the student ready program in final year. Dr. N Narayan Rao mentioned that we will send the modified structure and syllabus for further in depth suggestions from all the external members.

Resolutions: Revision of course curriculum of B. Tech (Agril. Engg.) is agreed by all the Members and decided to finalize it in next BoS meeting.

Agenda 5: Any other points with permission of chairperson

There was no other point raised by any member, therefor Dr. N Narayan Rao requested external members for their closing remarks.

Dr. D. Prassanna, Suggested incorporations of application of IoT, Like Artificial Neural Network, Machine Learning and robotics to B. Tech. Agricultural Engineering. **Dr. K. P. Vidhu**, advised inclusion of Drone based work and training as internship to B. Tech. students to industry as well as Govt. Institution. **Mr. A.S. Subba Rao**, recommended to allocate the final year projects essentially based on digital farming, community remote irrigation and mega irrigation systems. **Prof. P. S. Rao**, mentioned looking forward for detail course structure and syllabus for further comments. **Prof. T. Ramesh Babu**, appreciated the comments given by external members on all agenda items and suggested to meet physically in next meeting. Dr. N. Narayan Rao mentioned all the suggested points have been noted for consideration in the curriculum.

There being no further points for discussion. Dr. Ayyanna has given vote of thanks and meeting was adjourned with the permission of Chairperson.



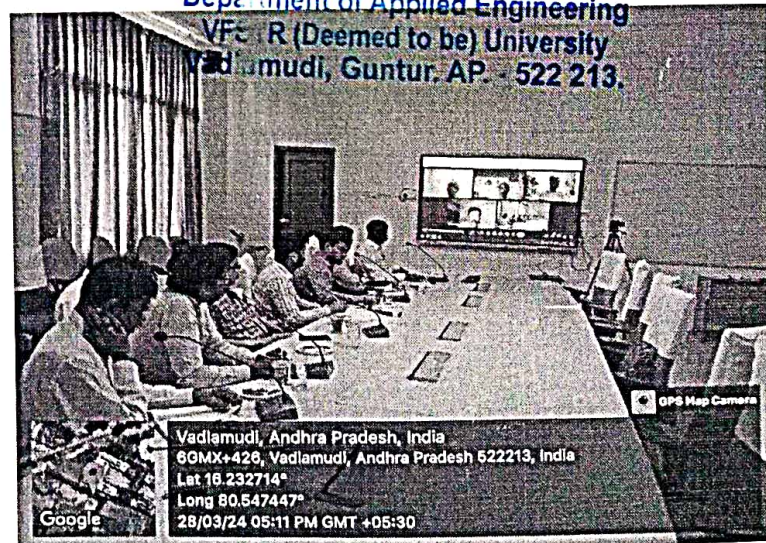
Member Secretary



Chairperson

Dr. N. NARAYAN RAO

Associate Professor & Head,
Department of Applied Engineering
VFSR (Deemed to be) University
Vadlamudi, Guntur, AP. - 522 213.



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DEPARTMENT OF APPLIED ENGINEERING**APPENDIX I****B. Tech (Agril. Engg.) Programme : Curriculum Structure****I Year I Semester Structure**

Sl. No.	Category	Course Name	L	T	P	C	Course Offered By
1	Basic Science	Introduction to Higher Mathematics/Introduction to plant Biology	0	0	3	3*	Mathematics/ BSc Agriculture
2	Basic Science	Physics For Agricultural Engineers	2	0	2	3	Physics
3	Basic Science	Chemistry For Agricultural Engineers	2	0	2	3	Chemistry
4	Basic Science	Principles of Agronomy	2	0	2	3	AE
5	Basic Engineering	Environmental Science And Disaster Management	2	0	2	3	Chemistry
6	Basic Engineering	Engineering Mechanics	2	2	0	3	AE
7	Basic Engineering	Engineering Drawing	0	0	3	2	Mechanical
8	Basic Science & Humanities	Communication Skills for Engineers	1	0	2	2	English
9	Basic Engineering	Workshop Technology And Practices	1	0	4	3	Mechanical
Total			12	2	20	22	

L=Lecture; T= Tutorial; P= Practical; C=Credits

I Year II Semester Structure

Sl. No.	Category	Course Name	L	T	P	C	Course Offered By
1	Basic Science	Engineering Mathematics -I (Ordinary Differential Equations And Linear Algebra)	1	2	2	3	Mathematics
2	Basic Science	Surveying and Levelling	1	2	2	3	Civil
3	Basic Science	Fluid Mechanics and Open Channel Hydraulics	1	2	2	3	Civil
4	Basic Engineering	Principles of Soil Science	2	0	2	3	AE
5	Basic Engineering	Computer Programing and Data Structures	1	2	2	3	Computer Science
6	Basic Engineering	Applied Electronics and Instrumentation	2	0	2	3	EEE
7	Basic Engineering	Physical Education, Sports and Games-1	0	0	2	1*	Sports and Games
8	Basic Engineering	Strength of Materials	1	0	2	2	Civil
9	Physical fitness & Sports	Orientation Session	-	-	6	3*	Training and Placement
10	SA	Constitution of India	0	2	0	1*	Training and Placement
Total			9	10	22	20	

L=Lecture; T= Tutorial; P= Practical; C=Credits

II Year I Semester Structure

Sl. no.	Category	Course Name	L	T	P	C	Course Offered By
1	Basic Science	Engineering Mathematics – II (Advanced Calculus and Partial Differential Equations)	1	2	2	3	Mathematics
2	Basic Science	Principles of Horticultural Crops and Plant Protection	1	0	2	2	AE
3	Basic Engineering	Heat and Mass Transfer	1	2	0	2	AE
4	Basic Engineering	Soil Mechanics	1	0	2	2	Civil
5	Professional core	Ground Water, Wells and Pumps	2	0	2	3	AE
6	Professional core	Watershed Hydrology	1	0	2	2	AE
7	Basic Engineering	Theory of Machines	1	2	0	2	AE
8	Basic Engineering	Electrical Machines and Power Utilization	2	0	2	3	EEE
9	Basic Science & Humanities	Entrepreneurship Development and Business Management	2	0	2	3	Management
10	Professional Core	Fundamentals of Renewable Energy Sources	2	0	2	3	AE
Total			12	6	14	25	

L=Lecture; T= Tutorial; P= Practical; C=Credits

II Year II Semester Structure

Sl. no.	Category	Course Name	L	T	P	C	Course Offered By
1	Basic Science	Engineering Mathematics III (Mathematical Methods)	1	2	2	3	Mathematics
2	Basic Engineering	Thermodynamics, Refrigeration and Air Conditioning	2	0	2	3	AE
3	Basic Engineering	AutoCAD Applications	0	0	4	2	AE
4	Basic Engineering	Machine Design	1	2	0	2	AE
5	Professional Core	Tractor and Automotive Engines	2	0	2	3	AE
6	Professional Core	Engineering Properties of Agricultural Produce	1	0	2	2	AE
7	Professional Core	Irrigation Engineering	2	0	2	3	AE
8	Professional Core	Soil and Water Conservation Engineering	2	0	2	3	AE
9	Professional Core	Elective Course-1	2	0	2	3	AE
Total			15	4	20	24	

L=Lecture; T= Tutorial; P= Practical; C=Credits

III Year I Semester Structure

Sl. no.	Category	Course Name	L	T	P	C	Course Offered By
1	Basic Engineering	Building Construction and Cost Estimation	1	2	0	2	Civil
2	Professional Core	Tillage and Sowing Operation	2	0	2	3	AE
3	Professional Core	Agricultural Structures and Environmental Control	2	0	2	3	AE
4	Professional Core	Post-Harvest Engineering of Cereals, Pulses and Oilseeds	1	2	2	3	AE
5	Professional Core	Sprinkler and Micro Irrigation Systems	1	0	2	2	AE
6	Professional Core	Watershed Planning and Management	1	0	2	2	AE
7	Basic Engineering	Renewable Power Sources	1	2	2	3	AE
8	Basic Engineering	Design of Structures	1	0	2	2	Civil
9	Professional Core	Tractor and Farm Machinery Operation and Maintenance	0	2	2	2	AE
10	Professional Core	Elective Course-2	2	0	2	3	
Total			12	8	18	25	

L=Lecture; T= Tutorial; P= Practical; C=Credits

III Year I Semester Structure

Sl. no.	Category	Course Name	L	T	P	C	Course Offered By
1	Professional Core	Intercultural, Harvesting and Threshing Equipment	2	0	2	3	AE
2	Professional Core	Post-Harvest Engineering of Horticultural Crops	1	0	2	2	AE
3	Professional Core	Water Harvesting and Soil Conservation Structures	2	0	2	3	AE
4	Professional Core	Dairy and Food Engineering	1	2	2	3	AE
5	Professional Core	Bio-Energy Systems: Design and Applications	2	0	2	3	AE
6	Basic Engineering	Web Designing and Internet Applications	1	0	2	2	IT
7	Basic Engineering	Design of Structures	1	0	2	2	Civil
8	Professional Core	Tractor and Farm Machinery Operation and Maintenance	2	0	2	3	AE
9	Professional Core	Elective Course-2	2	0	2	3	AE
Total			14	2	18	24	
Educational tour break							

L=Lecture; T= Tutorial; P= Practical; C=Credits

IV Year I Semester Structure

Sl. no.	Category	Course Name	L	T	P	C	Course Offered By
1	Student READY	Skill Development Training-I	0	0	10	10	
2	Student READY	Skill Development Training-II	0	0	10	10	
3	Student READY	Experiential Learning on Campus	0	2	18	10	AE
Total			2	38	20	30	

L=Lecture; T= Tutorial; P= Practical; C=Credits

IV Year I Semester Structure

Sl. no.	Category	Course Name	L	T	P	C	Course Offered By
1	Student READY	Internship	0	2	18	10	
2	Student READY	Educational Tour	0	0	4	2	
3	Student READY	Project Planning and Report Writing	0	2	18	10	AE
Total			0	4	40	22	

L=Lecture; T= Tutorial; P= Practical; C=Credits

List of Department Elective Courses

Sr.No.	Name of Elective Subject	L	T	P	C
1	Application of AI and ML Techniques for Agriculture	2	0	2	3
2	Wasteland Development	2	0	2	3
3	Remote Sensing and GIS Applications	2	0	2	3
4	Management of Canal Irrigation System	2	0	2	3
5	Precision Farming Techniques for Protected Cultivation	2	0	2	3
6	Application of Robotics in Agriculture	2	0	2	3
7	Tractor Design and Testing	2	0	2	3
8	Farm Machinery Design and Production	2	0	2	3
9	Food Quality and Control	2	0	2	3
10	Food Packaging Technology	2	0	2	3
11	Development of Processed Products	2	0	2	3
12	Process Equipment Design	2	0	2	3


Chairperson

Dr. N. NARAYAN RAO
Associate Professor & Head,
Department of Applied Engineering
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DEPARTMENT OF APPLIED ENGINEERING

APPENDIX II

List of Courses that Enables Employability or Entrepreneurship or Skill Development

S. No.	Year and Semester	Course Title	Employability / Entrepreneurship / Skill development
1.	I Year I Semester	Introduction to Higher Mathematics	
2.	I Year I Semester	Physics For Agricultural Engineers	
3.	I Year I Semester	Chemistry For Agricultural Engineers	
4.	I Year I Semester	Principles of Agronomy	Skill Development
5.	I Year I Semester	Environmental Science And Disaster Management	Entrepreneurship
6.	I Year I Semester	Engineering Mechanics	Employability
7.	I Year I Semester	Engineering Drawing	Skill Development
8.	I Year I Semester	Communication Skills for Engineers	
9.	I Year I Semester	Workshop Technology And Practices	Skill Development
10.	I Year I Semester	Engineering Mathematics – I (Ordinary Differential Equations And Linear Algebra)	
11.	I Year I Semester	Surveying and Levelling	Skill Development
12.	I Year I Semester	Fluid Mechanics and Open Channel Hydraulics	Skill Development
13.	I Year I Semester	Principles of Soil Science	Skill Development
14.	I Year I Semester	Computer Programing and Data Structures	Employability
15.	I Year I Semester	Applied Electronics and Instrumentation	Skill Development
16.	I Year I Semester	Physical Education, Sports and Games-1	
17.	I Year I Semester	Strength of Materials	Skill Development
18.	I Year I Semester	Orientation Session	
19.	I Year I Semester	Constitution of India	

20.	II Year I Semester	Engineering Mathematics – II (Advanced Calculus and Partial Differential Equations)	
21.	II Year I Semester	Principles of Horticultural Crops and Plant Protection	Skill Development
22.	II Year I Semester	Heat and Mass Transfer	Skill Development
23.	II Year I Semester	Soil Mechanics	Skill Development
24.	II Year I Semester	Ground Water, Wells and Pumps	Skill Development
25.	II Year I Semester	Watershed Hydrology	Skill Development
26.	II Year I Semester	Theory of Machines	Skill Development
27.	II Year I Semester	Electrical Machines and Power Utilization	Skill Development
28.	II Year I Semester	Entrepreneurship Development and Business Management	Entrepreneurship
29.	II Year I Semester	Fundamentals of Renewable Energy Sources	Skill Development
30.	II Year II Semester	Engineering Mathematics III (Mathematical Methods)	
31.	II Year II Semester	Thermodynamics, Refrigeration and Air Conditioning	Skill Development
32.	II Year II Semester	AutoCAD Applications	Employability
33.	II Year II Semester	Machine Design	Employability
34.	II Year II Semester	Tractor and Automotive Engines	Employability
35.	II Year II Semester	Engineering Properties of Agricultural Produce	Skill Development
36.	II Year II Semester	Irrigation Engineering	Employability
37.	II Year II Semester	Soil and Water Conservation Engineering	Employability
38.	II Year II Semester	Elective Course-1	Employability
39.	III Year I Semester	Building Construction and Cost Estimation	Employability
40.	III Year I Semester	Tillage and Sowing Operation	Skill Development
41.	III Year I Semester	Agricultural Structures and Environmental Control	Skill Development
42.	III Year I Semester	Post-Harvest Engineering of Cereals, Pulses and Oilseeds	Employability
43.	III Year I Semester	Sprinkler and Micro Irrigation Systems	Employability
44.	III Year I Semester	Watershed Planning and Management	Skill Development
45.	III Year I Semester	Renewable Power Sources	Employability
46.	III Year I Semester	Design of Structures	Skill Development
47.	III Year I Semester	Tractor and Farm Machinery Operation and Maintenance	Skill Development

48.	III Year I Semester	Elective Course-2	Employability
49.	III Year I Semester	Intercultural, Harvesting and Threshing Equipment	Employability
50.	III Year I Semester	Post-Harvest Engineering of Horticultural Crops	Skill Development
51.	III Year I Semester	Water Harvesting and Soil Conservation Structures	Skill Development
52.	III Year I Semester	Dairy and Food Engineering	Employability
53.	III Year I Semester	Bio-Energy Systems: Design and Applications	Skill Development
54.	III Year I Semester	Web Designing and Internet Applications	Employability
55.	III Year I Semester	Design of Structures	Skill Development
56.	III Year I Semester	Tractor and Farm Machinery Operation and Maintenance	Skill Development
57.	III Year I Semester	Elective Course-3	Employability
58.	IV Year I Semester	Skill Development Training-I	Employability
59.	IV Year I Semester	Skill Development Training-II	Employability
60.	IV Year I Semester	Experiential Learning on Campus	Entrepreneurship
61.	IV Year II Semester	Internship	Employability
62.	IV Year II Semester	Educational Tour	Employability
63.	IV Year II Semester	Project Planning and Report Writing	Employability

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APPENDIX III

List of New Courses in the R22 Curriculum

S. No.	Year and Semester	Course Title	Employability / Entrepreneurship / Skill development
1.	I Year I Semester	Introduction to Higher Mathematics/Introduction to plant Biology	Skill development


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