

**VIGNAN'S FOUNDATION FOR SCIENCE, TECHNOLOGY AND RESEARCH**

**UNIVERSITY:: VADLAMUDI**

**Minutes of Board of Studies Meeting 16<sup>th</sup> April 2016**

The following members were present for the Board of Studies meeting for B.Tech in Agricultural Engineering held on 16-04-2016 at Vignans University, Vadlamudi.

1. Dr.V. K. Tewari, Prof & Head, Ag & Food Engineering Department, IIT Kharagpur (External member)
2. Dr. K. Madhu Murthy, Professor in Mechanical Engineering Department., NIT, Warangal (External member).
3. Dr. S M Bhawe, Scientist G, NSTL, Vizag (External member)
4. Prof. K. Annamalai, MIT, Anna University, Chennai (External member)
5. Mr. A. V. Krishna Kishore, Divisional Engineering (General Division), Stage -4, Dr. NT TPS, IbrahimPatanam-521456 (External member)
6. Mr. Pulkit Sharma, Tata Technologies, New Delhi (External member)
7. Mr. ZohebShadab, Tata Technologies, Bangalore (Invitee)
8. Dr. V. Madhusaudhan Rao, Dean (E&M), VFSTRU, (Internal member)
9. Dr. B. Seetha Ramanjaneyulu, Dean (Academics), VFSTRU (Internal Member)
10. Dr.Vidhu Kampurath P., Assoc Prof & Head, Applied Engineering Department. VFSTRU (Internal Member)
11. Mr. V R Bhaskara Rao, Visiting Faculty, Applied Engineering Department, VFSTRU (Internal Member)
12. Dr. Nanjappa Chetty. Visiting Faculty, Applied Engineering Department, VFSTRU (Internal Member)
13. Dr. A Sirisha, Asst Prof. Applied Engineering. VFSTRU (Internal Member)
14. Dr. D. Vinay Kumar, Asst Prof, Applied Engineering Department. VFSTRU (Internal Member)
15. Dr. Sanjeet Kumar, Asst Prof, Applied Engineering Department. VFSTRU (Internal Member)
16. Mr. Harish Babu. B, Asst Prof. Applied Engineering, VFSTRU (Internal Member)
17. Mr. S Krishna Chaitanya, Applied Engineering Department. VFSTRU (Internal Member)

**The following were the discussions of the meeting:**

Dr. Vidhu KP, Head, Agriculture engineering has invited all the external and internal members and presented the glimpses of R-16 Curriculum.

HoD has shared the procedures followed in the preparation of R-16 Course Contents.

1. Most of the members felt that providing special B.Tech (Hons) degree will discriminate the other students from the meritorious students, which will cause serious problem to students who are having less Percentage while facing recruitment drive. Hence it is suggested to have additional brainstorming before accepting the honors programme.
2. The R13 B.Tech Agriculture Engineering Curriculum is revised for R16 Curriculum with the 30 % of revision.
3. Minor degree needs to be specified in the certificate so that the student gets full advantage of taking that stream.
4. Skill component can be done as a group task also, where individual practice is not viable.
5. Include Variable frequency drive and inverter technologies for energy saving in syllabus, possibly in Products and solutions.

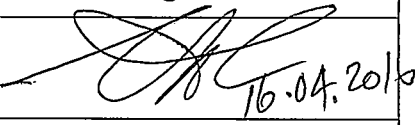
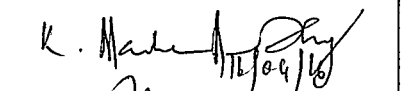
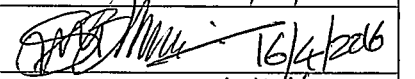
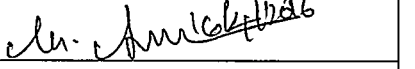
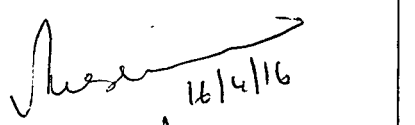
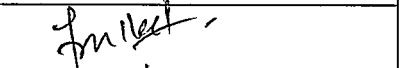
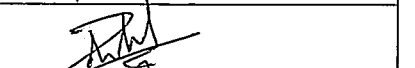
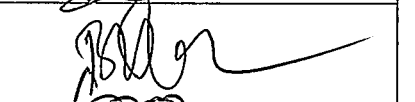

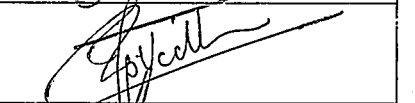

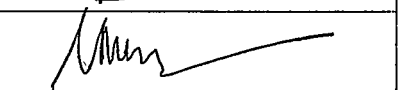


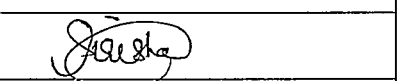
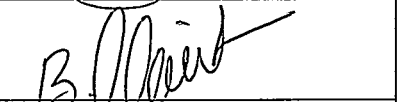

**Syllabus:**

1. Engineering Properties of Biological materials and Food Quality:
2. Keeping food quality along with the EPBM is not suggestible. Instead it can be combined with the Dairy and food engineering subject. Also, IPR should be added to Agri Business Management.
3. Members suggested for removal of old referred text books. Maximum possible, new editions are required.
4. Departmental Certification courses also can have equivalent credits as PET/BEC.
5. Professional ethics in respect of food processing should be included somewhere in syllabus.
6. Hydrology course outcomes and objectives should be rewritten.
7. Tractor system and controls: Introduction to CVT should be included in UNIT I
8. Dairy and Food Engineering: Food quality should be removed from EPBM &FQ and should be added to this course, so that there will relevance with the subject preceding topics
9. Farm Machinery and Equipment I: It is good to refer Polish book and some Russian Author books

### **Outcomes of the meeting**

1. Choice Based Credit System (CBCS) will be followed in this R 16 Course Curriculum as in the past. R 16 Course Structure is attached as Appendix A.
2. Dr. Vidhu shared feedback of various stakeholders in the meeting. Major restructuring has taken place in the R16 B. Tech Agriculture Engineering curriculum wherein theory courses are amalgamated with laboratory sessions and skill components are embedded in the courses.
3. Dr. Vidhu also mentioned that the Curriculum comprises of the courses that enable employability or entrepreneurship or skill development as shown in Appendix-B.
4. List of new courses are included as Appendix C.

### Board of Studies Members

S No	Name and Address	Signature
1	Prof. V. K. Tewari, Professor & Head, Agril. & Food Engg Dept., IIT, Kharagpur	 16.04.2016
2	Dr. K. Madhu Murthy, Professor in Mech Engg Dept., NIT, Warangal	 16/04/16
3	Dr. S M Bhave, Scientist G, NSTL, Vizag	 16/4/2016
4	Prof. K. Annamalai, MIT, Anna University, Chennai	 16/4/2016
5	Mr. A. V. Krishna Kishore, Divisional Engg (General Division), Stage -4, Dr. NT TPS, Ibrahim Patanam-521456	 16/4/16
6	Mr. Pulkit Sharma, Tata Technologies, New Delhi	
7	Mr. Zoheb Shadab, Tata Technologies, Bangalore	
8	Dr. B Seetharamanjaneyulu, Dean Academics, VFSTRU	
9	Dr. V Madhusudhan Rao, Dean (E&M), VFSTRU	
10	Dr. Vidhu Kampurath P, Head, Applied Engg, VFSTRU	
11	Mr. V R Bhaskara Rao, Visiting Faculty, Applied Engg Dept, VFSTRU	
12	Dr. Nanjappa Chetty, Visiting Faculty, Applied Engg Dept, VFSTRU	
13	Dr. Vinay Kumar, Asst Prof. Applied Engg, VFSTRU	 16/4/16
14	Dr. Sanjeet Kumar, Asst Prof. Applied Engg, VFSTRU	 Sanjeet Kumar
15	Dr. A Sirisha, Asst Prof. Applied Engg, VFSTRU	
16	Mr. Harish Babu. B, Asst Prof. Applied Engg, VFSTRU	
17	Mr. S Krishna Chaitanya, Asst Prof. Applied Engg, VFSTRU	

## APPENDIX-A

### I year I semester

Course Title	L	T	P	C
Engineering Mathematics-I	3	1	2	5
Engineering Physics	3	-	-	3
Technical English Communication	3	-	2	4
Basics of Computers and Internet	3	-	2	4
Computer Programming	3	1	2	5
Basics of Engineering Products	3	-	2	4
English Proficiency and Communication Skills	-	-	2	1
Engineering Physics Laboratory	-	-	3	2
Total	18	2	15	28

### I year II semester

Course Title	L	T	P	C
Engineering Mathematics-II	3	1	2	5
Engineering Chemistry	3	-	-	3
Engineering Graphics	1	-	3	3
Basics of Electrical and Electronics Engineering	3	-	2	4
Engineering Chemistry Laboratory	-	-	3	2
Environmental Science and Technology	2	-	-	2
Engineering Mechanics	3	1	-	4
Work shop Practice	-	-	3	2
Total	15	1	15	25

**II year I semester**

Course Title	L	T	P	C
Engineering Properties of Biological Materials and Food Quality	3	-	0	3
Farm Power and Renewable Energy Sources	2	-	2	3
Probability and Statistics	3	1	-	4
Fluid Mechanics	2	1	2	4
Principles of Thermodynamics	2	-	2	3
Soil Mechanics	2	1	2	4
Soft Skills	0	0	2	1
Employability and Life Skills Elective*	-	-	-	1-3
Total	14	3	10	23-25

**II year II semester**

Course Title	L	T	P	C
Crop Production Technology	2	-	2	3
Strength of Materials	2	-	2	3
Surveying and Levelling	1	-	3	3
Theory of Machines	2	-	2	3
Principles of Heat and Mass Transfer	3	1	-	4
Professional Communication	-	-	2	1
Department Elective	-	-	-	3-4
Department / Open Elective	-	-	-	3-4
Employability and Life Skills Elective*	-	-	-	1-3
Total	10	1	11	24-28

III year I semester

Course Title	L	T	P	C
Crop Process Engineering	2	-	2	3
Drying and Storage Engineering	2	-	2	3
Hydrology	2	1	-	3
Machine Design	2	1	2	4
Tractor Systems and Controls	2	-	2	3
Department Elective	-	-	-	3-4
Department / Open Elective	-	-	-	3-4
Employability and Life Skills Elective*	-	-	-	1-3
Total	10	2	8	24-28

III year II semester

Course Title	L	T	P	C
Professional Ethics	2	0	0	2
Dairy and Food Engineering	2	0	2	3
Drainage Engineering	2	0	2	3
Farm Machinery and Equipment-1	2	0	2	3
Ground Water, Wells and Pumps	2	1	0	3
Irrigation Engineering	2	0	2	3
Department Elective	-	-	-	3-4
Department / Open Elective	-	-	-	3-4
Employability and Life Skills Elective*	-	-	-	1-3
Total	12	1	8	24-28

IV year I semester

Course Title	L	T	P	C
Agricultural Business Management	3	-	-	3
Farm Machinery and Equipment-II	2	-	2	3
Soil and Water Engineering	3	1	-	4
Refrigeration and Air Conditioning	3	-	2	4
Department Elective	-	-	-	3-4
Department / Open Elective	-	-	-	3-4
Employability and Life Skills Elective*	-	-	-	1-3
Total	11	1	4	21-25

IV year II semester

Course Title	L	T	P	C
Project work / Internship	-	-	30	15
Total	-	-	30	15

  
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# DEPARTMENT ELECTIVE STREAMS AND COURSES

## STREAM -1: FOOD PROCESS ENGINEERING DOMAIN

Course Title	L	T	P	C
Food Packaging Technology	3	-	2	4
Processing of Horticultural Produce	4	-	-	4
Bakery and Confectionary Technology	3	-	2	4
Agricultural Structures and Environment Control	3	1	-	4
Development of Processed Products and Equipment	4	-	-	4
Waste and By-Product Utilization	4	-	-	4
Automation in Food Industries	4	-	-	4
Food Processing Plant Design and Layout	3	1	-	4

## Stream-2 : Farm Power and Machinery Domain

Course Title	L	T	P	C
Applications of Hydraulics and Pneumatics in Agricultural Machinery	3	-	2	4
Biomass Management for Fodder and Energy	3	1	-	4
Farm Power and Machinery Management	3	1	-	4
Human Engineering and Safety	3	1	-	4
Hydraulic Drive and Controls	3	1	-	4
Machinery Systems for Precision Agriculture	3	1	-	4
Mechanics of Tillage and Traction	3	-	2	4
Production Technology for Agricultural Machinery	3	-	2	4
Tractor Design and Testing	3	1	-	4

### Stream-3: Soil and Water conservation Engineering

Course Title	L	T	P	C
Climate Change and Water Resource	3	1	-	4
Remote Sensing and GIS Applications	3	-	2	4
Gully and Ravine Control Structures	3	1	-	4
Micro Irrigation Systems Design	3	1	-	4
Minor Irrigation and Command Area Development	3	-	2	4
Non-Point Source Pollution and Management	3	1	-	4
Reservoir and Farm Pond Design	3	-	2	4
Watershed Planning and Management	3	1	-	4

### Individual electives courses

Course Title	L	T	P	C
Remote Sensing and GIS Applications	3	-	2	4
Human Engineering and Safety	3	1	-	4

“The courses that are highlighted denote implementation of Choice Based Credit System (CBCS)”



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## Appendix-B

List of Courses that enable employability or entrepreneurship or Skill development in the R16 B.Tech- Agriculture Engineering

Year	Course Name	Course Nature
I	Engineering Mathematics-I	Employability
I	Engineering Physics	Skill development
I	Technical English Communication	Employability
I	Basics of Computers and Internet	Skill development
I	Computer Programming	Skill development
I	Basics of Engineering Products	Employability
I	English Proficiency and Communication Skills	Employability
I	Engineering Physics Laboratory	Skill development
I	Engineering Mathematics-II	Skill development
I	Engineering Chemistry	Skill development
I	Engineering Graphics	Skill development
I	Basics of Electrical and Electronics Engineering	Skill development
I	Engineering Chemistry Laboratory	Employability
I	Environmental Science and Technology	Employability
I	Engineering Mechanics	Employability
I	Work shop Practice	Skill development
II	Engineering Properties of Biological Materials and Food Quality	Skill development
II	Farm Power and Renewable Energy Sources	Employability
II	Probability and Statistics	Employability
II	Fluid Mechanics	Employability
II	Principles of Thermodynamics	Employability
II	Soil Mechanics	Employability
II	Soft Skills	Employability
II	Employability and Life Skills Elective*	Employability
II	Crop Production Technology	Skill development
II	Strength of Materials	Skill development
II	Surveying and Leveling	Employability
II	Theory of Machines	Employability
II	Principles of Heat and Mass Transfer	Employability
II	Professional Communication	Skill development

II	Employability and Life Skills Elective*	Employability
II	Crop Process Engineering	Employability
II	Drying and Storage Engineering	Employability
III	Hydrology	Employability
III	Machine Design	Skill development
III	Tractor Systems and Controls	Employability
III	Employability and Life Skills Elective*	Skill development
III	Professional Ethics	Skill development
III	Dairy and Food Engineering	Skill development
III	Drainage Engineering	Skill development
III	Farm Machinery and Equipment-1	Skill development
III	Ground Water, Wells and Pumps	Employability
III	Irrigation Engineering	Skill development
III	Employability and Life Skills Elective*	Employability
III	Agricultural Business Management	Skill development
III	Farm Machinery and Equipment-II	Skill development
III	Soil and Water Engineering	Employability
III	Refrigeration and Air Conditioning	Employability
III	Project work / Internship	Skill development
III	Food Packaging Technology	Skill development
IV	Processing of Horticultural Produce	Entrepreneurship
IV	Bakery and Confectionary Technology	Skill development
IV	Agricultural Structures and Environment Control	Skill development
IV	Development of Processed Products and Equipment	Employability
IV	Waste and By-Product Utilization	Employability
IV	Automation in Food Industries	Employability
IV	Food Processing Plant Design and Layout	Skill development
IV	Applications of Hydraulics and Pneumatics in Agricultural Machinery	Skill development
E	Biomass Management for Fodder and Energy	Employability
E	Farm Power and Machinery Management	Employability
E	Human Engineering and Safety	Employability
E	Hydraulic Drive and Controls	Employability
E	Machinery Systems for Precision Agriculture	Employability
E	Mechanics of Tillage and Traction	Employability
E	Production Technology for Agricultural Machinery	Employability
E	Tractor Design and Testing	Skill development
E	Climate Change and Water Resource	Skill development
E	Remote Sensing and GIS Applications	Employability
E	Gully and Ravine Control Structures	Entrepreneurship
E	Micro Irrigation Systems Design	Employability

E	Minor Irrigation and Command Area Development	Skill development
E	Non-Point Source Pollution and Management	Employability
E	Reservoir and Farm Pond Design	Employability
E	Watershed Planning and Management	Employability
E	Remote Sensing and GIS Applications	Employability
E	Human Engineering and Safety	Skill development



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## Appendix –C

### List of New Courses in the R-16 B.Tech Agriculture Engineering

S.No	Semester (Year)	Course Name
1	I Year I Semester	Engineering Mathematics-I
2	I Year I Semester	Engineering Physics
3	I Year I Semester	Technical English Communication
4	I Year I Semester	Basics of Computers and Internet
5	I Year I Semester	Computer Programming
6	I Year I Semester	Basics of Engineering Products
7	I Year I Semester	English Proficiency and Communication Skills
8	I Year I Semester	Engineering Physics Laboratory
9	I Year II Semester	Engineering Mathematics-II
10	I Year II Semester	Engineering Chemistry
11	I Year II Semester	Engineering Graphics
12	I Year II Semester	Basics of Electrical and Electronics Engineering
13	I Year II Semester	Engineering Chemistry Laboratory
14	I Year II Semester	Environmental Science and Technology
15	I Year II Semester	Engineering Mechanics
16	I Year II Semester	Work shop Practice
17	II Year I Semester	Engineering Properties of Biological Materials and Food Quality
18	II Year I Semester	Farm Power and Renewable Energy Sources
19	II Year I Semester	Probability and Statistics
20	II Year I Semester	Fluid Mechanics
21	II Year I Semester	Principles of Thermodynamics
22	II Year I Semester	Soil Mechanics
23	II Year I Semester	Soft Skills
24	II Year I Semester	Employability and Life Skills Elective*
25	II Year II Semester	Crop Production Technology
26	II Year II Semester	Strength of Materials
27	II Year II Semester	Surveying and Leveling
28	II Year II Semester	Theory of Machines

29	II Year II Semester	Principles of Heat and Mass Transfer
30	II Year II Semester	Professional Communication
31	II Year II Semester	Employability and Life Skills Elective*
32	III Year I Semester	Crop Process Engineering
33	III Year I Semester	Drying and Storage Engineering
34	III Year I Semester	Hydrology
35	III Year I Semester	Machine Design
36	III Year I Semester	Tractor Systems and Controls
37	III Year I Semester	Employability and Life Skills Elective*
38	III Year II Semester	Professional Ethics
39	III Year II Semester	Dairy and Food Engineering
40	III Year II Semester	Drainage Engineering
41	III Year II Semester	Farm Machinery and Equipment-1
42	III Year II Semester	Ground Water, Wells and Pumps
43	III Year II Semester	Irrigation Engineering
44	III Year II Semester	Employability and Life Skills Elective*
45	IV Year I Semester	Agricultural Business Management
46	IV Year I Semester	Farm Machinery and Equipment-II
47	IV Year I Semester	Soil and Water Engineering
48	IV Year I Semester	Refrigeration and Air Conditioning
49	IV Year II Semester	Project work / Internship
50	Department elective	Food Packaging Technology
51	Department elective	Processing of Horticultural Produce
52	Department elective	Bakery and Confectionary Technology
53	Department elective	Agricultural Structures and Environment Control
54	Department elective	Development of Processed Products and Equipment
55	Department elective	Waste and By-Product Utilization
56	Department elective	Automation in Food Industries
57	Department elective	Food Processing Plant Design and Layout
58	Department elective	Applications of Hydraulics and Pneumatics in Agricultural Machinery
59	Department elective	Biomass Management for Fodder and Energy
60	Department elective	Farm Power and Machinery Management
61	Department elective	Human Engineering and Safety

62	Department elective	Hydraulic Drive and Controls
63	Department elective	Machinery Systems for Precision Agriculture
64	Department elective	Mechanics of Tillage and Traction
65	Department elective	Production Technology for Agricultural Machinery
66	Department elective	Tractor Design and Testing
67	Department elective	Climate Change and Water Resource
68	Department elective	Remote Sensing and GIS Applications
69	Department elective	Gully and Ravine Control Structures
70	Department elective	Micro Irrigation Systems Design
71	Department elective	Minor Irrigation and Command Area Development
72	Department elective	Non-Point Source Pollution and Management
73	Department elective	Reservoir and Farm Pond Design
74	Department elective	Watershed Planning and Management
75	Department elective	Remote Sensing and GIS Applications
76	Department elective	Human Engineering and Safety



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62	Department elective	Hydraulic Drive and Controls
63	Department elective	Machinery Systems for Precision Agriculture
64	Department elective	Mechanics of Tillage and Traction
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