



Hindusthan College of Engineering and Technology

Approved by AICTE, New Delhi, Accredited with 'A++' Grade by NAAC

(An Autonomous Institution, Affiliated to Anna University, Chennai)

Coimbatore – 641 032

Date: 20.05.2024

ACTION TAKEN REPORT ON 11th BOS

Name of the Department: **Agricultural Engineering**

The meeting of Eleventh Board of studies of regulation 2019 Regulation with amendments and 2022 Regulation (for the students to be admitted from 2021-2022, 2022-2023, 2023-2024 and 2024-2025 onwards) for the academic year 2024-2025 ODD Semester was conducted on 16.05.2024 at 10.00 A.M in the Board Room – Corporate relation cell (Hybrid mode), Hindusthan College of Engineering and Technology, Coimbatore.

(I) Syllabus Revision for the Regulations 2019 with Amendments (2021 Batch) , Regulation 2022 (2023 Batch and 2024 Batch)

S.No	Subject in which revision has been done	Action taken	Percentage Syllabus Revised
1	21AG7201 - Agriculture Extension	Revision included and Modified	15%
2	21AG7301 - Post harvest Technology	Revision included and Modified	21%
3	21AG7251 - Precision Farming and Protected Cultivation	Revision included and Modified	15%
4	22AG3202R - Fluid Mechanics and Pumps	Revision included and Modified	30%
5	22AG3252R - Surveying and Levelling	Revision included and Modified	6%
6	22AG1251 - Principles and Practices of Crop Production	Revision included and Modified	30%

Syllabus Revision carried out in 2024-2025 ODD Semester

2022 Regulation (2023 Batch) - I semester = 3.2 %

2022 Regulation (2022 Batch) - III semester = 5.3 %

2019 Regulation with amendments (2021 Batch) - VII semester = 7.1 %

Overall Syllabus Revision carried out in 2024-2025 ODD Semester = 15.6 %



(II) New Course Introduced:

S.No	Subject Code	Name of the Subject
1	22AG5202	Tractors and Engine Systems
2	22AG5301	Farm Power & Machinery Management
3	22AG5305	Groundwater and Well Engineering
4	22AG5307	Biomass Management for Fodder & Energy
5	22AG5251	Irrigation and Drainage Engineering
6	22AG5252	Food and Dairy Engineering
7	22AG5001	Renewable Energy Laboratory

(III) Additional Credit Courses Introduced:

S.No.	Course Code with Name
1.	21VAAG05 – Design of farm and farm structures.
2.	22AGVA04 - Food Safety and Quality Management
3.	22AGVA03 - Soil testing and water analysis

(IV) B. Tech (HONS) and Minor Degree Agricultural Engineering curriculum under Regulation 2022 (2022 Batch)

S.No	Course Code	Course Title	Credit
B.Tech (Hons)			
V1	22AG5202	Off-Road Vehicle Engineering	3
V2	22AG5203	Open Channel Flow	3
V3	22AG5204	Industrial Processing of Foods and	3
V4	22AG5205	Solar radiation and measurements	3
V5	22AG5206	Big Data Processing	3
B.Tech (Minor)			
1.	22AG5601	Agriculture for Engineers	3

B. Tech (HONS) and Minor Degree Agricultural Engineering curriculum under Regulation 2022 (2021 Batch)

S.No	Course Code	Course Title	Credit
B.Tech (Hons)			
V1	21AG7203	Tractor Systems Design -II	3
	21AG7252	Energy Conservation and Management in Farm Power and Machinery	3
V2	21AG7204	Water Systems Simulation And Modelling	3
	21AG7253	Modelling Soil Erosion Processes	3
V3	21AG7205	Robotics in Food Processing and Handling	3
	21AG7254	Food Process Modelling	3
V4	21AG7206	Analysis of Agrivoltaics system for Energy	3



		food and water production	
	21AG7255	Design and installation of Agrivoltaics System	3
V5	21AG7207	Graph Machine Learning: Foundations and Applications	3
	21AG7256	AI Applications in Agriculture	3
B.Tech (Minor)			
1.	21AG7601	Fundamentals of Food Process Engineering	3
2.	21AG7602	Non-Conventional Energy Sources	3

(V). General Recommendations:

S. No	Suggestion Given by the BoS Experts	Action Taken
1	Suggested to create awareness among students related to MOOC Courses and credit transfer.	Considered
2	Recommended to arrange more internship opportunities for the students	Considered


 Chairman
 (Board of Studies)
Chairman - BoS
AGRI - HICET




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Dean (Academics)
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Date: 15.12.2023

ACTION TAKEN REPORT ON 10th BOS

Name of the Department: **Agricultural Engineering**

The meeting of Tenth Board of studies of Regulation 2019 and Regulation 2022 for the Department of Agricultural Engineering under Graduate Programme was conducted on 13.12.2023 at 3.00 PM in the Board Room, Hindusthan College of Engineering and Technology.

(I) Syllabus Revision for the Regulations 2019 with Amendments (2021 Batch) and Regulation 2022

S.No	Subject in which revision has been done	Action taken	Percentage Syllabus Revised
1	21AG6201- Hydrology and Water Resources Engineering	Included and Modified	6.1%
2	21AG6181- Professional Ethics	Included and Deleted	5%
3	21AG6251 - Food and Dairy Engineering	Included and Deleted	8.2%
4	22AG2252R - Principles and Practices of Crop Production	Included and Modified	8.13

Syllabus Revision carried out in 2023-2024 EVEN Semester

2022 Regulation (2023 batch) - II semester = 8.13 %

2019 Regulation with amendments (2021 batch) - VI semester = 19.30 %

(II) New Course Introduced: NIL

(III) Additional Credit Courses Introduced:

S.No.	Course Code with Name
1.	21VAAGO3- Training on Mobile App and Web Development for monitoring agricultural practices.
2.	22VAAG01 - Principles of machine drawing




(IV) B. Tech (HONS) & B.Tech (HONS with specialization) and Minor Degree Agricultural Engineering curriculum introduced under Regulation 2022


S.No	Regulation	Course Code with Name	Credits
1	2022	21AG6203 & Design of Farm Machinery and System	3
2	2022	21AG6204 & Tractor Systems Design -I	3
3	2022	21AG6205 & Water Resources System Engineering	3
4	2022	21AG6206 & Watershed Management and Modelling	3
5	2022	21AG6207 & Instrumentation and Control in Food Industries	3
6	2022	21AG6208 & Food Plant and Equipment Design	3
7	2022	21AG6209 & Basics of solar PV systems and components	3
8	2022	21AG6210 & Basics of Agronomic practices and components	3
9	2022	21AG6211 & Dependable and Secure AI-ML	3
10	2022	21AG6212 & Deep Learning Foundations and Applications	3
11	2022	21AG6601 & Soil & Water Conservation Engineering	3
12	2022	21AG6602 & Farm Machinery and Equipment's	3

(V). General Recommendations:

S. No	Suggestion Given by the BoS Experts	Action Taken
1	Suggested to create awareness among students related to MOOC Courses and credit transfer.	Considered
2	Recommended to arrange more internship opportunities for the students	Considered


Chairman
(Board of Studies)
Chairman - BoS
AGRI - HiCET




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Dean (Academics)
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Date: 08.06.2023

ACTION TAKEN REPORT ON 9th BOS

Name of the Department: **Agricultural Engineering**

The meeting of Ninth board of studies of Regulation 2019 and Regulation 2022 for the Department of Agricultural Engineering under Graduate Programme was conducted on 07.06.2023 at 3.00 pm in the Board Room, Hindusthan College of Engineering and Technology.

(I) Syllabus Revision for the Regulations 2019

S.No	Subject in which revision has been done	Action taken	Percentage Syllabus Revised
1	19AG7202R- Remote Sensing and Geographical Information System	Modified	14%
2	19AG7304R & Process Engineering of Fruits and Vegetables	Modified	43%
3	19AG7001R & Renewable Energy Laboratory	Included	20%
4	19AG7002R & Remote Sensing and GIS Laboratory For Agricultural Engineers	Included	60%
5	21AG5202- Refrigeration and Cold Chain Management	Modified	30%
6	21AG5203 & Theory of Machines	Incorporated	26%
7	21AG5252 & Soil and Water Conservation Engineering	Incorporated	16%
8	21AG5002 & CAD for Agricultural Engineering	Incorporated	20%

Overall Percentage of revision made in the BoS : 18.49 %



(II) New Course Introduced:

S. No	Regulation	Course Code with Name	Credits
1	2022	22AG3201 & Soil Technology	3
2	2022	22AG3202 & Fluid Mechanics and Pumps	3
3	2022	22AG3203 & Engineering Thermodynamics	4
4	2022	22AG3251 & Unit operations in Agricultural Processing	1.5
5	2022	22AG3252 & Surveying and Levelling	1.5
6	2022	22AG3001 & Soil Technology laboratory	3
7	2022	22AG3072 & Basic Electrical, Electronics and Instrumentation Engineering	3

(III) Additional Credit Courses Introduced:

S.No.	Course Code with Name
1.	19VAAG05- Training on Design of Agricultural System (Solar, Food instruments and Hydroponics)
2.	21VAAGO2 - Geospatial Technology for Climate-Smart Agriculture

(IV) B. Tech (HONS) & B.Tech (HONS with specialization) and Minor Degree Agricultural Engineering introduced under Regulation 2022

S.No	Regulation	Course Code with Name	Credits
1	2022	21AG5204 & Off-Road Vehicle Engineering	3
2	2022	21AG6203 & Design of Farm Machinery and System	3
3	2022	21AG6204 & Tractor Systems Design -I	3
4	2022	21AG7203 & Tractor Systems Design -II	3
5	2022	21AG7204 & Farm Machinery Dynamics Noise & Vibrations	3
6	2022	21AG8311 & Operations Research in Farm Power & Machinery Management	3
7	2022	21AG5205 & Open Channel Flow	3
8	2022	21AG6205 & Water Resources System Engineering	3
9	2022	21AG6206 & Watershed Management and Modelling	3
10	2022	21AG7205 & Water Systems Simulation And Modelling	3
11	2022	21AG7206 & Modelling Soil Erosion Processes	3
12	2022	21AG8312 & Plant Growth Modelling and Simulation	3
13	2022	21AG5206 & Industrial Processing of Foods and	3



		Beverages	
14	2022	21AG6207 & Instrumentation and Control in Food Industries	3
15	2022	21AG6208 & Food Plant and Equipment Design	3
16	2022	21AG7207 & Food Process Modelling	3
17	2022	21AG7208 & Robotics in Food Processing and Handling	3
18	2022	21AG8313 & Marketing of Food and Agricultural Products	3
19	2022	21AG5207 & Solar radiation and measurements	3
20	2022	21AG6209 & Basics of solar PV systems and components	3
21	2022	21AG6210 & Basics of Agronomic practices and components	3
22	2022	21AG7209 & Design and installation of Agrivoltaics system	3
23	2022	21AG7210 & Analysis of Agrivoltaics system for Energy food and water production	3
24	2022	21AG8314 & Cost analysis and standards	3
25	2022	21AG5208 & Big Data Processing	3
26	2022	21AG6211 & Dependable and Secure AI-ML	3
27	2022	21AG6212 & Deep Learning Foundations and Applications	3
28	2022	21AG7211 & Graph Machine Learning: Foundations and Applications	3
29	2022	21AG7212 & AI Applications in Agriculture	3
30	2022	21AG8315 & Process Modelling and Simulation	3
31	2022	21AG5601 & Agriculture for Engineers	3
32	2022	21AG6601 & Soil & Water Conservation Engineering	3
33	2022	21AG6602 & Farm Machinery and Equipment's	3
34	2022	21AG7601 & Fundamentals of Food Process Engineering	3
35	2022	21AG7602 & Non-Conventional Energy Technology	3
36	2022	21AG8601 & Integrated on Farm Managements	3




(V). General Recommendations:

S. No	Suggestion Given by the BoS Experts	Action Taken
1	Suggested to create awareness among students related to MOOC Courses and credit transfer.	Considered
2	Recommended to arrange more internship opportunities for the students	Considered


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Chairman - BoS
AGRI - HiCET




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Date: 22.02.2023

ACTION TAKEN REPORT ON 8th BOS

Name of the Department: **Agricultural Engineering**

The meeting of Eighth board of studies of Regulation 2019 and Regulation 2022 for the Department of **Agricultural Engineering Under Graduate Programme** was conducted on 21.02.2023 at 2.30 pm in the Board Room, Hindusthan College of Engineering and Technology.

Google Meet: <https://meet.google.com/gvq-uyfq-hqj>

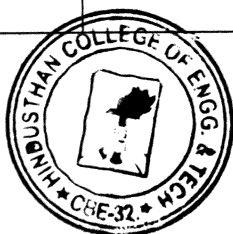
(I) Syllabus Revision for the Regulations 2019

S.No	Subject in which revision has been done	Action taken	Percentage Syllabus Revised
1.	21AG4251-Bio - Energy Resource Technology	Modified	30 %
2.	21AG4252-Surveying and Levelling	Modified	40 %
3.	21AG4203-Irrigation and Drainage Engineering	Included	15 %
4.	19AG6302-Heat and Mass Transfer for Agricultural Engineers	Included	40 %
5.	19AG6401 -Modern Agricultural Practices	Modified	25 %
6.	19AG6251 -Food and Dairy Engineering	Incorporated	25 %

Overall Percentage of revision made in the BoS : 21 %

(II) New Course Introduced under 2019 Regulation

S. No	Regulation	Course Code with Name	Credits
1	2019	19AG8301-Agricultural Business Management and Entrepreneurship	3
2	2019	19AG8302-On-Farm Water Management	3
3	2019	19AG8303-Application of drone and robotics	3



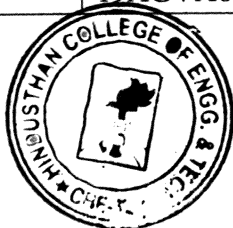
		technology in agriculture	
4	2019	19AG8304-Agricultural Waste Management	3
5	2019	19AG8305-Energy Conservation in Agro based Industry	3
6	2019	19AG8306-Special Farm Equipment's	3
7	2019	19AG8307-Mechanics of Tillage and Traction	3
8	2019	19AG8308-Watershed Hydrology and Management	3
9	2019	19AG8309-Micro Irrigation System	3
10	2019	19AG8310-Agriculture Economics and Farm Management	3
11	2019	19AG8901-Project work	8

(III)The New MOOC (NPTEL- SWAYAM) courses introduced in Professional Elective V Introduced under 2019 Regulation

S. No	Regulation	Course Code with Name	Credits
1	19AG8306	Cooling Technology: Why and How utilized in Food Processing and allied industries	3
2	19AG8307	Novel Technologies for Food Processing and Self life Extension	3
3	19AG8308	Machine Learning for soil and crop management	3
4	19AG8309	Web based Technologies and Multimedia Applications	3

(IV) Additional Credit Courses Introduced:

S.No.	Course Code with Name
1.	21AGVA401 & Basics of Embedded system with Robotics & IoT
2.	19AGVA601 & Basics of Machine Learning and AI



(V) New Course Introduced under Regulation 2022

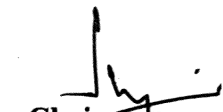
S.No	Regulation	Course Code with Name	Credits
1	2022	22AG2252- Principles and Practices of Crop Production	3
2	2022	22 AG 3002- Soil Science Laboratory	1.5
3	2022	22 AG 4001- Operation and Maintenances of Farm Machinery and Engines Laboratory	1.5

Three more VERTICALS introduced for B.Tech (Hons) & B.Tech(Hons with Specialization)

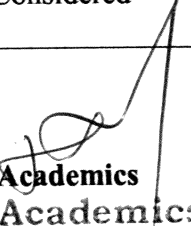
VERTICAL I Modern Technology in Agricultural Engineering- I	VERTICAL II Modern Technology in Agricultural Engineering- II	VERTICAL III Crop Production and Management
ADVANCE NANO TECHNOLOGY IN AGRICULTURAL ENGINEERING	PRODUCTION TECHNOLOGY OF AGRIL. MACHINERY.	PRINCIPLES OF ORGANIC FARMING AND VERTICAL FARMING
TRACTOR DESIGN AND TESTING	FIELD OPERATION AND MAINTENANCE OF TRACTORS AND FARM MACHINERY	MANURES, FERTILIZERS AND SOIL FERTILITY MANAGEMENT
COMPUTATIONAL WATERSHED HYDROLOGY	GULLEY & RAVINE CONTROL STRUCTURES	FARM MANAGEMENT, PRODUCTION AND RESOURCE ECONOMICS
LANDSCAPE ARCHITECTURE	RESERVOIR & FARM POND DESIGN	MINOR IRRIGATION & COMMAND AREA DEVELOPMENT
FOOD SAFETY AND QUALITY ASSURANCE	ENGINEERING PROPERTIES OF BIOLOGICAL MATERIALS AND FOOD QUALITY	POST-HARVEST MANAGEMENT AND VALUE ADDITION OF HORTICULTURAL CROPS
CLEAN ENERGY TECHNOLOGIES	ENERGY STORAGE SYSTEMS	ENVIRONMENTAL STUDIES & DISASTER MANAGEMENT

(VI). General Recommendations:

S. No	Suggestion Given by the BoS Experts	Action Taken
1	Suggested to create awareness among students related to MOOC Courses and credit transfer.	Considered
2	Recommended to arrange more internship opportunities for the students	Considered


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Date:02.09.2022

ACTION TAKEN REPORT ON 7th BOS

Name of the Department: **Agriculture Engineering**

The meeting of seventh board of studies of Regulation 2019 and Regulation 2022 for the Department of Agriculture Engineering Under Graduate Programme was conducted on 29.08.2022 at 2.30 pm in the Board Room, Hindusthan College of Engineering and Technology.

Meeting Link:

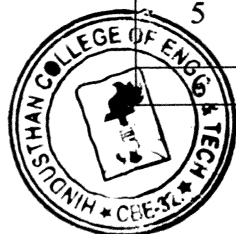
(I) Syllabus Revision for the Regulations 2019

S.No	Subject in which revision has been done	Action taken	Percentage Syllabus Revised
1.	21AG3202 - FLUID MECHANICS AND HYDRAULICS	Modified	25%
2.	21AG3204- PRINCIPLES AND PRACTICES OF CROP PRODUCTION	Modified	35%
3.	21AG3251 - UNIT OPERATIONS IN AGRICULTURAL PROCESSING	Included	15 %
4.	19AG5201- FARM MACHINERY AND EQUIPMENT	Included	30%
5.	19AG5203 - THEORY OF MACHINES	Modified	20%
6.	19AG5001 - OPERATION AND MAINTENANCE OF FARM MACHINERY LABORATORY	Incorporated	30%

Overall Percentage of revision made in the BoS : 22.50

(II) New Course Introduced:

S. No	Regulation	Course Code with Name	Credits
1	2019	19AG7201-Agricultural Extension	3
2	2019	19AG7202-Remote Sensing and Geographical Information System	3
3	2019	19AG7251-Precision Farming and Protected Cultivation	4
4	2019	19AG7001-Renewable Energy Laboratory	1.5
5	2019	19AG7002-GIS Laboratory for Agricultural Engineers	1.5
	2019	19AG7901-Innovative Project	3



7	2019	19AG7301-Post-Harvest Technology	3
8	2019	19AG7302-Dairy Process Technology	3
9	2019	19AG7303-Storage and Packaging Technology	3
10	2019	19AG7304-Process Engineering of Fruits and Vegetables	3
11	2019	19AG7305-Fat and Oil Processing	3
12	2019	19AG7401-Urban Agriculture and organic farming	3
13	2019	19AG7402-Quality analysis in rubber industry	3

(III) Additional Credit Courses Introduced:

S.No.	Course Code with Name
1.	19VAAG04-Practicing PLC,Ardino for agricultural machinery Automation

(IV) New Course Introduced under Regulation 2022

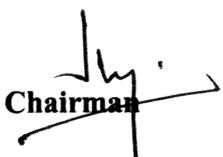
S.No	Regulation	Course Code with Name	Credits
1	2022	22AG2252- Principles and Practices of Crop Production	3
2	2022	22MA3109- Transforms and Applications	4
3	2022	22AG3203- Engineering Thermodynamics	3
4	2022	22 AG 3252-Surveying and Levelling	3
5	2022	22AG3253-BasicElectrical, Electronics and Instrumentation Engineering	3
6	2022	22 AG 4201- Farm Equipment and Machinery	3
7	2022	22 AG 4202- Theory of Machines	3
8	2022	22 AG 4203- Hydrology and Water Resources Engineering	3
9	2022	22 AG 4251- Soil and Water ConservationEngineering	3
10	2022	22 AG 4252- Strength of Materials for Agricultural Engineering	3
11	2022	22 AG 4001- Operation and Maintenances of Farm Machinery and Engines Laboratory	2
12	2022	22 AG 5201- Tractors and Engine Systems	4
13	2022	22 AG 5251- Irrigation and Drainage Engineering	3
14	2022	22 AG 5252- Food and Dairy Engineering	3
15	2022	22 AG 5001- Renewable Energy Laboratory	2
16	2022	22 AG 6201- Remote Sensing and Geographical InformationSystem	3
17	2022	22 AG 6251- Post Harvest Technology	3
18	2022	22 AG 6001- Cad for Agricultural Engineering Laboratory	2
19	2022	22 AG 7201- Mechanics of Tillage and Traction	3
20	2022	22 AG 7202- Waste and By Product Utilization	4
21	2022	22 AG 7001- Remote Sensing and GIS Laboratory	2
22	2022	22 AG 7707- Internship	2
23	2022	22AG5301- Farm Power & Machinery Management	3
24	2022	22AG5302-Tractor Systems and Controls	3
25	2022	22AG5303- Tractor Design and Testing	3
26	2022	22AG6301- Hydraulic Control system and design	3
27	2022	22AG6302- Testing and evaluation of farm machinery and equipment	3



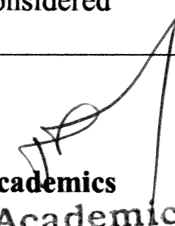
28	2022	22AG7301- Human Engineering and Safety in Farm Machinery Operations	3
29	2022	22AG5304- Watershed planning and Management	3
30	2022	22AG5305- Groundwater and Well Engineering	3
31	2022	22AG5306- Design of Micro-irrigations system	3
32	2022	22AG6303- Protected Cultivation	3
33	2022	22AG6304- On-farm water management	3
34	2022	22AG7302- Irrigation Water Quality and Waste Water Management	3
35	2022	22AG5307- Biomass Management for Fodder & Energy	3
36	2022	22AG5308- Renewable Energy Sources	3
37	2022	22AG5309- Renewable Energy Technology	3
38	2022	22AG6305- Solar and Wind energy system	3
39	2022	22AG6306- Biochemical and Thermochemical conversion of biomass	3
40	2022	22AG7303- Energy Audit	3
41	2022	22AG5310- Heat and Mass transfer for Agricultural Engineering	3
42	2022	22AG5311- Food Process Equipment and Design	3
43	2022	22AG5312- Food Plant Design and Management	3
44	2022	22AG6307- Storage and Packaging Technology	3
45	2022	22AG6308- Refrigeration and cold Storage	3
46	2022	22AG7304- Emerging Technologies in Food Processing	3
47	2022	22AG5313- Integrated Farming System	3
48	2022	22AG5314- Agri Business Management	3
49	2022	22AG5315- Sustainable Agriculture and Food Security	3
50	2022	22AG6309- Systems Analysis in Agricultural Engineering	3
51	2022	22AG6310- IT in Agricultural System	3
52	2022	22AG7305- Design and Maintenance of Green House	3
53	2022	22AG5316- Automation in Agriculture	3
54	2022	22AG5317- Electric and Hybrid Vehicle	3
55	2022	22AG5318- Foundation of Robotics and Drone	3
56	2022	22AG6311- Applications of RS & GIS in Resource Management	3
57	2022	22AG6312- Fundamentals of Nano Technology in Agriculture	3
58	2022	22AG7306- Gender and Integrated water Resource Management	3

(V). General Recommendations:

S. No	Suggestion Given by the BoS Experts	Action Taken
1	Suggested to create awareness among students related to MOOC Courses and credit transfer.	Considered
2	Recommended to arrange more internship opportunities for the students	Considered


Chairman
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Date: 6.02.2022

ACTION TAKEN REPORT ON 6th BOS

Name of the Department: **Agriculture Engineering**

The meeting of sixth board of studies of Regulation 2016 and Regulation 2019 for the Department of Agriculture Engineering Under Graduate Programme was conducted on 4.02.2022 at 2.30 pm in the Board Room, Hindusthan College of Engineering and Technology.

I) Syllabus Revision for the Regulations 2019

S.No	Subject in which revision has been done	Action taken	Percentage Syllabus Revised
1.	19AG4201-Farm Tractors	Modified	35
2.	19AG4202-Thermodynamics	Modified	30
3.	19AG4203-Irrigation and Drainage Engineering	Included	30
4.	19AG4251-Bio-Energy Resource Technology	Modified	25
5.	19AG4252-Surveying and Leveling	Included	25
6.	19AG4001-Irrigation Field Laboratory	Included	25

Overall Percentage of revision made in the BoS : 24.28

(II) New Course Introduced under 2016 Regulation

S.No	Course Code	Course Title	Credit
1	16AG8901	Project Work	10
2	16AG8301	Agricultural Business Management and Entrepreneurship	3
3	16AG8302	Agricultural Economics and Farm Managements	3
4	16AG8303	Intellectual Property Rights	3
5	16AG8304	Agricultural Waste Management	3
6	16AG8305	Special Farm Equipment	3



7	16AG8306	Mechanics of Tillage and Traction	3
8	16AG8307	Micro Irrigation System	3
9	16AG8308	Automation in Irrigation	3

(II) New Course Introduced under 2019 Regulation

S.No	Course Code	Course Title	Credit
1	19AG6201	Hydrology and Water Resources Engineering	3
2	19AG6202	Solar and Wind Energy Engineering	3
3	19AG6181	Professional Ethics	3
4	19AG6251	Food and Dairy Engineering	3
5	19AG6252	ICT in Agricultural Engineering	3
6	19AG6701	Industrial Training	3
7	19AG6301	Climate change and adaptation	3
8	19AG6302	Heat and Mass Transfers for Agricultural Engineers	3
9	19AG6303	Disaster Management	3
10	19AG6304	Horticultural Crop Processing	3
11	19AG6305	Organic Farming Technologies	3
12	19AG6401	Urban Agriculture and organic Farming	3
13	19HE6071	Soft Skills - II	1
14	19HE6072	Intellectual Property Rights (IPR)	1

III) Additional Courses Introduced with Zero credit:

Members accepted to give following course 19VAAG01-Training on Manufacture of Agricultural Implements, 19VAAG02-Principles of machine drawing, 19VAAG03-Training on Mobile App and Web Development for monitoring agricultural practices, 19VAAG04-Practicing PLC,Arduino for agricultural machinery Automation and 19VAAG05-Principles of gardening and design consideration as a value-added course for improving students' skill.

Following listed of courses under NASCOM consider as value added course.

- Python Basics
- SQL Fundamentals
- Acquiring Data
- Adobe UX/ UI
- Web Development. Foundation.
- Operation Systems and Shell Scripting.



Following are the list of courses from Learnathon

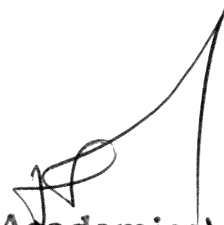
- Basics of Managing money
- Network virtualization concepts
- Image and signal processing
- Cybersecurity Essential
- Automation 360 RPA Essentials
- The basics of Process Mining
- Microsoft Azure Fundamentals
-

General Recommendations:

S.No.	Suggestion given in the BoS experts	Action taken
1	Members suggested to Invite the industrial expert to provide value added courses	Considered
2	Members Suggested to provide industry exposure and research experience to the students	Considered
3	To Encourage the Students to participates in various online certification courses.	Considered
4	Members accepted to value added courses are added within the curriculum as Mandatory Course with Zero Credit	Included




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Coimbatore – 641 032

Date: 15.07.2021

ACTION TAKEN REPORT ON 5th BOS

Name of the Department: **Agriculture Engineering**

The meeting of fifth board of studies of Regulation 2016 and Regulation 2019 for the Department of **Agriculture Engineering** Under Graduate Programme was conducted on 14.07.2021 at 2.30 pm in the Board Room, Hindusthan College of Engineering and Technology.

I) Syllabus Revision for the Regulations 2019

S.No	Subject in which revision has been done	Action taken	Percentage Syllabus Revised
1.	19AG3201-Soil Science and Engineering	Modified	25
2.	19AG3001-Field Crop Production Practical	Modified	40
3.	19AG3002-Soil Science Laboratory	Included	40
4.	19AG3251-Unit Operations in Agricultural Processing	Included	35

Overall Percentage of revision made in the BoS : 23.30

(II) New Course Introduced under 2016 Regulation

S.No	Course Code	Course Title	Credit
1	16AG7201	Groundwater and Well Engineering	3
2	16AG7202	Remote Sensing and Geographical Information System	3
3	16AG7203	Solar and Wind Energy Engineering	3
4	16AG7204	Agricultural Extension	3
5	16AG7001	GIS Laboratory for Agricultural Engineers	2
6	16AG7002	Renewable Energy Laboratory	2
7	16AG7003	ICT in Agricultural Engineering	2
8	16AG7701	Industrial Training / Technical Seminar	3
9	16AG7301	Industrial Waste Water Management	3
10	16AG7302	Ergonomics and Safety in Agricultural Engineering	3
11	16AG7303	On Farm Water Management	3



12	16AG7304	Watershed Hydrology and Management	3
13	16AG7305	Application of Drone Technology in Agriculture	3
14	16AG7306	Dairy Process Technology	3
15	16AG7307	Storage and Packaging Technology	3
16	16AG7308	Process Engineering of Fruits and Vegetables	3
17	16AG7401	Emerging Technologies in Food Process Engineering	3

(II) New Course Introduced under 2019 Regulation

S.No	Course Code	Course Title	Credit
1	19AG5201	Farm Machinery and Equipment	3
2	19AG5202	Refrigeration and Cold Chain Management	3
3	19AG5203	Theory of Machines	3
4	19AG5251	Groundwater and Well Engineering	3
5	19AG5252	Soil and Water Conservation Engineering	3
6	19AG5001	Operation and Maintenance of Farm Machinery Laboratory	1.5
7	19AG5002	CAD for Agricultural Engineering	1.5
8	19HE5071	Soft Skills - I	1
9	19HE5072	Design Thinking	1
10	19AG5301	Systems Analysis and Soft Computing in Agricultural Engineering	3
11	19AG5302	Sustainable Agriculture and Food Security	3
12	19AG5303	CDM and Carbon Trading Technology	3
13	19AG5304	IOT in Agricultural Systems	3
14	19AG5305	Ergonomics and Safety in Agricultural Engineering	3

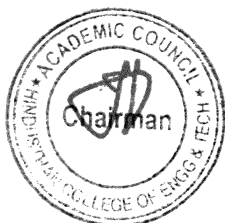
III) Additional Courses Introduced with Zero credit:

S.No.	Course Code with Name
1.	16VA AG01- Training on Testing and Evaluation of agriculture machinery and implements
2.	16VA AG02- Principles of gardening and design consideration
3.	16VA AG03- Training on Mobile App and Web Development for monitoring agricultural practices.



General Recommendations:

S.No.	Suggestion given in the BoS experts	Action taken
1	Members suggested to, if possible, could add the following course and it is the need of the hour actually for farmers' concern	Considered
2	Suggested to Automation of irrigation - Now all the irrigation companies are focusing on automation.	Considered
3	For laboratory course syllabus reference has to be given as books or department manuals.	Considered
4	Farm Mechanization- In addition to B.E courses special attention and interested students may be trained regarding design of machineries & equipment to suit the local Indian farmers, CAD, IoT in agriculture etc.,	Considered
5	Remote sensing and GIS applications in assessment and management of water resources and Waste water treatment and recycling is also important; State & Central Govts have been initiated already.	Considered
6	Members approved In Semester VII & VIII -two value added courses are added within the curriculum as Mandatory Course with Zero Credit	Considered




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Date: 12.02.2021

ACTION TAKEN REPORT ON 4th BOS

Name of the Department: **Agriculture Engineering**

The meeting of Fourth Board of Studies of Regulation 2016 and Regulation 2019 for the Department of Agriculture Engineering Undergraduate programme was conducted on 10.02.2021 at 2.30 PM in Board Room (Virtual mode), Hindusthan College of Engineering and Technology.

Syllabus related Recommendations in 2016 and 2019 Regulation

S. No	Suggestions given by BoS experts	Action taken
2.	In 6 th sem, '16AG6204- Bio-Energy Resource Technology' course UNIT I and UNIT II -they suggest replacing few contents from Unit I and Unit II and in UNIT V give title like Thermochemical conversion and add few more information related thermochemical conversion process.	Modified
3.	Suggested to change in 6 th sem, "Open Elective-I 16AG6401- Nanotechnology in Agriculture" and they approved to add new course like., 16AG6401- Roof Top gardening and Organic Farming.	Modified
4.	Members approved to including Life skill courses like 16LSXXXX as open elective for agriculture Engineering students.	Modified
5.	In '19AG4252 Surveying and Levelling' course suggested that, add some theory part in syllabus.	Included
6.	Suggested to interchange 19AG6201 Thermodynamics courses from VI sem into IV semester likewise 19AG4202 Hydrology and water resource Engineering course from IV sem into VI semester which will help to the students in the way of better understanding about various concept of engineering.	Modified

General Comments by the BoS Members

S. No	Suggestions given by BoS experts	Action taken
1.	Members suggested to follow standard Text and Reference books with recent editions.	Considered
2.	Members suggested to theory with lab component course could be limited with 5 to 7 experiments	Considered




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Date: 12.09.2020

ACTION TAKEN REPORT ON 3rd BOS

Name of the Department: **Agriculture Engineering**

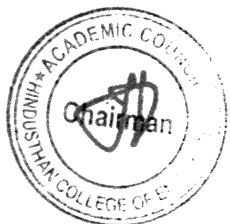
The meeting of, Third Board of Studies of Regulation 2016 and Regulation 2019 for the Department of Agriculture Engineering Undergraduate programme was conducted on 10.09.2020 at 2.30 PM in Board Room (Virtual mode), Hindusthan College of Engineering and Technology.

Syllabus related Recommendations in 2016 and 2019 Regulation

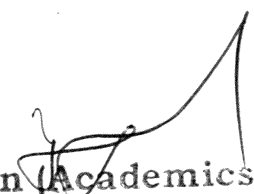
S. No	Suggestions given by BoS experts	Action taken
1.	In 5th sem, Professional Elective –I (16AG53XX EVAPOTRANSPIRATION) suggest to change course title “16AG53XX -Evapotranspiration and smart irrigation” and add few changes in UNIT 2, 3 and 5.	Modified
2.	In 3rd sem, ‘19AG3201- Soil Science and Engineering “ members suggested to replacing syllabus contents (soil type and characteristics) in Unit I and Unit II.	Modified

General Comments by the BoS Members

S. No	Suggestions given by BoS experts	Action taken
1.	Members suggested to follow standard Text and Reference books with recent editions.	Considered
2.	Members suggested to theory with lab component course could be limited with 5 to 7 experiments	Considered
3.	Members suggested to improvise the CO – PO attainment level	Considered




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ACTION TAKEN REPORT ON 2nd BOS

Name of the Department: **Agriculture Engineering**

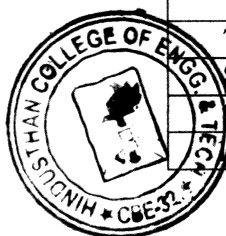
The meeting of the second Board of Studies of Regulation 2016 and 2019 for the Department of Agriculture Engineering Undergraduate programme was conducted on 12.4.2019 at in the CSE Seminar Hall, Hindusthan college of Engineering and Technology.

Syllabus related Recommendations in 2016and 2019 Regulation

S. No	Suggestions given by BoS experts	Action taken
1.	In 3 rd sem, "16AG3201- Soil Science and Engineering" suggested to add 'Engineering Properties of Soil' in Unit IV and Terzaghi's formula- BIS standards topic added in unit 5.	Included
2.	Suggested that, In3 rd sem, '16AG3202- FLUID MECHANICS AND HYDRAULICS 'course", suggested to add Centrifugal pumps and types of pumps'topic can be added in Unit 5	Included
3.	In 4 th sem, "16AG4202- IRRIGATION AND DRAINAGE ENGINEERING' Course" syllabus, Water control and diversion structure could be added in unit 2.	Included
4	In 2 nd Sem "19AG2104- Principles of Food Science", course add as core for agriculture Engineering	Included
5	In 3 rd Suggested to rename the subject name for '19AGXXXX- Design of Farm Tractors- as a 'Farm Tractors'.	Included
6	In 4 th Sem, '19AGXXXX Groundwater Engineering' course may be renamed as 'Groundwater and Well Engineering	Included

New Course Introduced for 2016 and 2019 Regulation

S. No	Regulation	Course Code with Name	Credits
1	2016	16AG3201- Soil Science and Engineering	3
2	2016	16AG3202- Fluid Mechanics and Hydraulics	3
3	2016	16AG3001- Fluid Mechanics Laboratory	3
4	2016	16AG4201- Unit Operations in Agricultural Processing	3
5	2016	16AG4202- Farm Tractors	3
6	2016	16AG4203- Hydrology and Water Resources Engineering	3
7	2016	16AG4204- Irrigation and Drainage Engineering	3
8	2016	16AG4001- Soil Science Laboratory	2
9	2016	16AG4002- Irrigation Field Laboratory	2
10	2019	19AG2104- Principles of Food Science	3




General Recommendations:

S.No.	Suggestion given in the BoS experts	Action taken
1	Board suggested to include recent editions of Text and Reference books should be preferred for all subjects with recent editions.	Considered
2	Suggested to include a common sentence "The students will be able to" before course outcome for all subjects	Considered
3	Suggested that Theory with lab component course can be limited with 5 experiments and Identification and Working of Equipment' can be included as any experiment in Laboratory course.	Considered
4	To encourage students for learn the additional course through online platform	Considered




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Date: 12.12.2018

ACTION TAKEN REPORT ON 1st BOS

Name of the Department: **Agriculture Engineering**

The meeting of the First Board of Studies of Regulation 2016 for the Department of Agriculture Engineering Undergraduate programme was conducted on 29.3.2018 at in the CSE Seminar Hall, Hindusthan college of Engineering and Technology.

As per the recommendation and suggestions given by the BoS members, vision and mission, PEOs, and PSOs of the Department has been modified as follows:

Vision of the Department

To become a department of excellence in agricultural engineering by producing socially conscious professionals with good technical knowledge and innovative skill sets.

Mission of the Department

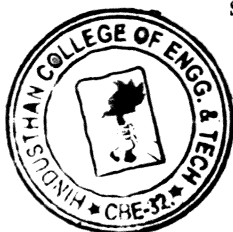
- To impart strong technical knowledge in agricultural engineering through conducive learning environment
- To empower students with innovative skill sets to address agricultural issues.
- To produce socially responsible agricultural professionals and provide sustainable solutions.

Program Educational Objectives

PEO1: Graduates shall exhibit their sound theoretical, practical skills and knowledge for being a successful professional.

PEO2: Graduates shall be creative with leadership qualities and lifelong learning skills.

PEO3: Graduates shall hold high ethical values and be able to devise sustainable solutions to address agricultural issue.



Program Specific Outcomes

PSO1- Ability to understand agricultural scenario in World and India and superimpose agricultural engineering technologies for uplifting the agriculture.

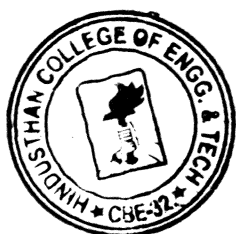
PSO2- Ability to solve various issues in agriculture by infusing farm mechanization, conservation strategies for soil, water and renewable energy, advanced irrigation techniques and post harvest technology

Syllabus related Recommendations:

S. No	Suggestions given by BoS experts	Action taken
1.	Board suggested the subject '16AG2201- Principles and Practices of Crop Production' and 16AG2001- Crop Husbandry Laboratory" added in II semester.	Included
2.	Board members suggested to rename the subject name for '16AGXXXX- Engineering Hydrology in 4 th Sem as 'Hydrology and Water Resources Engineering'	Modified
3.	Suggested that, in 5 th Sem, '16AGXXXX Farm Machinery Laboratory"' course may be renamed as 'Operation and Maintenance of Farm Machinery Laboratory.	Modified

General Recommendations:

S.No.	Suggestion given in the BoS experts	Action taken
1.	The board suggests 'Open Elective' subjects are common to all branches of study Irrespective of departments offered	Considered
2.	The board suggested to update reference books for all the core subject for students' betterment	Considered
3.	Stakeholders recommended to include recent editions of text/reference books for Farm machinery and power/ Soil and water conservation/ Food process Engineering /Bioenergy and IOT.	Considered
4.	For laboratory course syllabus reference has to be given as books or department manuals	Considered
5	CO-PO attainment for all subjects as 50% and recommended to keep target as 60%.	Incorporated

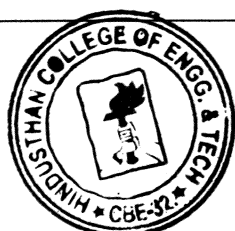


Syllabus Added in newly introduced Course

Programme	Course code	Name of the course	L	T	P	C
BE	16AG2201	PRINCIPLES AND PRACTICES OF CROP PRODUCTION	3	0	0	3

Course Objective	<ol style="list-style-type: none"> 1. To introduce the students to principles of agricultural and horticultural crop production and to introduce the production practices of crops. 2. To delineate the role of agricultural and irrigation engineers in relation to various crop production practices.
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Unit	Description	Instructional Hours
I	AGRICULTURE AND CROP PRODUCTION Introduction to agriculture and its crop production sub-sectors - field crop production and horticulture; Factors affecting crop growth and production: genetic (internal) and environmental (external) factors; Crop management through environmental modification and adaptation of crops to the existing environment through crop cultural practices.	12
II	CROP SELECTION AND ESTABLISHMENT Regional and seasonal selection of crops; Systems of crop production; Competition among crop plants; Spacing and arrangement of crop plants; Field preparation for crops including systems of tillage; Establishment of an adequate crop stand and ground cover, including selection and treatment of seed, and nursery growing.	12
III	CROP MANAGEMENT Crop water Management; Crop nutrition management - need for supplementation to soil supplied nutrients, sources, generalized recommendations, methods and timing of application of supplemental nutrients including fertigation scheduling; Crop protection including management of 20 weeds, pests and pathogens; Integrated methods of managing water, nutrients and plant protection; Types and methods of harvest.	12
IV	PRODUCTION PRACTICES OF AGRICULTURAL CROPS Generalized management and cultivation practices for important groups of field crops in TamilNadu: cereal crops, grain legumes, oil seed crops, sugarcane, and fiber crops, and special purpose crops such as those grown for green manure and fodder.	12
V	PRODUCTION PRACTICES OF HORTICULTURAL CROPS Important groups of horticultural crops in Tamil Nadu such as vegetable crops, fruit crops, flower crops; Cultivation practices of representatives of each group; Special features of production of horticultural crops - green house cultivation.	12
Total Instructional Hours		60



Course Outcome	CO1: Understanding the physical, biological, and economic factors influencing the crop production.
	CO2: Understand the principles of crop growth and development.
	CO3: To know various cultivation practices for important groups of field crops in Tamil Nadu
	CO4: Understand the horticultural crops growth and importance of greenhouse cultivation
	CO5: Understand the scientific principles and technologies can be applied to in-crop situations to optimize returns within best management practices.

TEXT BOOKS:

T1	Rajendra Prasad, Text Book of Field Crop Production. Directorate of Information and Publication, Krishi Anusandhan Bhavan, Pusa, New Delhi, 2015.
T2	Reddy T. Sankara G.H. Yellamanda Reddi, Principles of Agronomy, Kalyani Publishers, New Delhi, 2005
T3	Handbook of Agriculture. ICAR Publications, New Delhi, 2011.

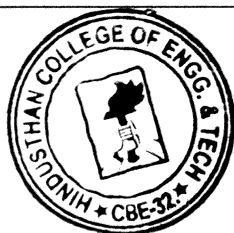
REFERENCE BOOKS:

R1	Bose T. K. and L.P.Yadav. Commercial Flowers, Naya Prakash, Calcutta.1989.
R2	Crop Production Guide, Tamil Nadu Agricultural University Publication, Coimbatore. 2005
R3	Kumar, N., Abdul Khader, M. Rangaswami, P. and Irulappan, I. Introduction to spices, plantation crops, medicinal and aromatic plants. Rajalakshmi Publications, Nagercoil. 1993.
R4	Kumar, N., "Introduction to Horticulture", Rajalakshmi Publications. Nagercoil, 7 th edition, 2015
R5	Shanmugavel, K.G. Production Technology of Vegetable Crops. Oxford India Publications, New Delhi. 1989

Programme	Course Code	Name of the Course	L	T	P	C
B.E	16AG2001	CROP HUSBANDRY LABORATORY	0	0	4	2

Course Objective	To introduce the different crop production practices in wet land, dry land and garden land through hands on experience and demonstrations.
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S.No	Description of the Experiments	Instructional Hours
1	Field preparation studies	
2	Seed selection and seed treatment procedures	
3	Seed bed and nursery preparation	
4	Sowing / Transplanting	
5	Biometric observation for crops	
6	Nutrient management studies	



7	Water management and irrigation scheduling	
8	Weed management studies	
9	Integrated Pest Management studies	
10	Harvesting	
Total Instructional Hours		60

Basic Needs:

A wet land / garden land for a minimum of 5 cents area for each / group of students.

An open / borewell as water source to support cultivation

Course Outcome	CO1: Developing the skill on crop-based plant nutrition and selecting suitable machinery for cultivation.
	CO2: Ability in identifying weeds of crop fields and non- cropped areas, their management, herbicide types and their spraying techniques.
	CO3: Students learned about basic idea about growth and development
	CO4: Understand the soil-water-plant relationship, quality of irrigation water, irrigation scheduling, and different types of irrigation method.
	CO5: To estimate cost cultivation, harvesting and other losses

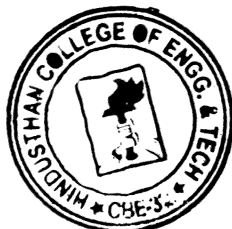
SEMESTER IV

Sl.No	Course Code	Course Title	Category	L	T	P	C	CIA	ESE	TOTAL
1.	16AG4203	Hydrology and Water Resources Engineering	PC	3	0	0	3	25	75	100

SEMESTER V

Sl.No	Course Code	Course Title	Category	L	T	P	C	CIA	ESE	TOTAL
1.	16AG5001	Operation and Maintenance of Farm Machinery Laboratory	PC	0	0	4	2	50	50	100

SEMESTER IV



Sl.No	Course Code	Course Title	Category	L	T	P	C	CIA	ESE	TOTAL
1.	16AG4203	Hydrology and Water Resources Engineering	PC	3	0	0	3	25	75	100

SEMESTER V

Sl.No	Course Code	Course Title	Category	L	T	P	C	CIA	ESE	TOTAL
1.	16AG5001	Operation and Maintenance of Farm Machinery Laboratory	PC	0	0	4	2	50	50	100



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