

**B.Tech. (Agricultural Engineering) – 2020-2024 Batch
CURRICULUM**

I Year: Semester I

Sl. No.	Course Code	Name of the Course	Credits
1	18AG1015	Introduction to Agriculture and Horticulture	2:0:0
2	17CH1001	Instrumental Techniques in Chemistry	2:0:2
3	17 MA1001	Basic Mathematics for Engineering	3:1:0
4	17PH1003	Physics for Agricultural Engineers	3:0:1
5	17EE1001	Basic Electrical Engineering	3:0:0
6	17ME1003	Workshop Practice	0:0:2
7	17ME1002	Engineering Drawing	0:0:2
8	17ME2001	Engineering Mechanics	3:0:0
9	17EN1001	Communication Skills in English	3:0:0
		National Service Scheme	0:0:1*
Total Credits			19:1:7 (27)

*Non gradal course

I Year: Semester II

Sl. No.	Course Code	Name of the Course	Credits
1	17MA1002	Calculus and Statistics	3:1:0
2	16CS2003	Fundamentals of C programming	3:0:0
3	20AG1006	Fundamentals of Soil Science	2:0:1
4	18AG2015	Environmental Studies and Disaster Management	2:0:1
5	17EI2035	Instrumentation for Agriculture	3:0:0
6	17CE2067	Strength of Materials for Agricultural Engineering	3:1:0
7	17CE2018	Strength of Materials Lab	0:0:2
8	18CE1001	Basics of Surveying and Levelling	1:0:1
9	17VE1001	Value Education	0:0:2*
10		Physical Education	0:0:1*
Total Credits			17:2:5 (24)

*Non gradal course

II Year: Semester III

Sl. No.	Course Code	Name of the Course	Credits
1	17MA2004	Laplace Transforms, Fourier Series and Transforms	3:1:0
2	18CS1001	Information and Communication Technology	1:0:1
3	18AT2001	Fluid Mechanics and Open Channel Hydraulics	3:0:1
4	18ME2001	Thermodynamics, Refrigeration and Air Conditioning	3:0:0
5	18ME2002	Refrigeration and Air Conditioning Lab	0:0:1
6	18ME2003	Theory of Machines	2:1:0
7	18ME2004	Machine Design	3:0:0
8	18ME2005	Machine Drawing Lab for Agriculture	0:0:1
9	18CE2002	Basics of Soil Mechanics	2:0:1
10	17SS2001	Soft skills – I	1:0:0*
Total Credits			17:2:5 (24)

*Non gradal course

II Year: Semester IV

Sl. No.	Course Code	Name of the Course	Credits
1	17MA2012	Numerical Methods	3:1:0
2	18ME2006	Heat and Mass Transfer in Food Processing	2:0:0
3	18CE2003	Building Construction and Cost Estimation	2:1:0
4	20AT2002	Engineering Properties of Agricultural Produce	1:0:1
5	18AT2003	Post-harvest Engineering of Cereals, Pulses and Oilseeds	2:0:0
6	18AT2004	Farm Machinery and Equipment-I	2:0:1
7	18CE2004	Watershed Hydrology	2:0:1
8	18ME2007	Heat Transfer Lab for Agriculture	0:0:1
9	18ME2008	CAD Applications Lab	0:0:2
10	17SS2002	Soft skills – II	1:0:0*
11	17GA2001	General Aptitude – I	1:0:0*
Total Credits			14:2:6 (22)

*Non gradal course

III Year: Semester V

Sl. No.	Course Code	Name of the Course	Credits
1	18AT2005	Tractor Systems and Controls	2:0:0
2	18AT2006	Farm Machinery and Equipment-II	2:0:1
3	18AT2007	Field Operation and Maintenance of Tractors and Farm Machinery	0:0:2
4	18AT2009	Soil and Water Conservation Engineering	2:0:1
5	18AT2018	Irrigation and Drainage Engineering	2:0:1
6	18AT2010	Fundamentals of Renewable Energy Sources	2:0:0
7	18AT2011	Extension Methodology and Transfer of Technology	2:0:0
8	18AT2036	Skill Development Training-I (Student READY)** Registration only	0:0:5
9	17GA2002	General Aptitude – II	1:0:0*
Total Credits			12:0:10 (22)

*Non gradal course

** Skill Development Training-I in Summer break June-July after 4th Semester (Student READY)

III Year: Semester VI

Sl. No.	Course Code	Name of the Course	Credits
1	18AT2012	Dairy and Food Engineering	2:0:1
2	18AT2013	Storage Structures and Packaging Technology	2:0:1
3	18AT2015	Groundwater, Wells and Pumps	2:0:0
4	18AT2016	Water Harvesting and Soil Conservation Structures	2:0:1
5	18AT2017	Bio Energy Systems: Design and Applications	2:0:1
6	20AT2001	Sprinkler and Micro Irrigation Systems	1:0:1
7	18AG2025	Entrepreneurship Development and Business Management	1:0:1
Total Credits			12:0:6 (18)

IV Year: Semester VII

Student READY(Rural and Entrepreneurship Awareness Development Yojna)

Sl. No.	Course Code	Name of the Course	Credits
1		Elective Course	2:0:0
2		Elective Course	2:0:1
3		Elective Course	3:0:0

4	18AT2037	10-Weeks Industrial Attachment/Internship(Student READY)	0:0:10
5	18AT2039	Skill Development Training-II (Student READY)* Registration only	0:0:5
6	18AT2040	Educational Tour (Registration only)	0:0:2
Total Credits			7: 0:18(25)

*Skill Development Training-II in Summer break (June-July after 6th semester (Student READY))

IV Year: Semester VIII

Sl. No.	Course Code	Name of the Course	Credits
1	18AT2038	10-Weeks Experiential Learning On campus (Student READY)	0:0:10
2	18AT2041	Project Planning and Report Writing	0:0:10
Total Credits			0:0:20 (20)

List of Electives

Sl. No.	Course Code	Name of the Course	Credits
1	18AT2008	Post Harvest Engineering of Horticultural Crops	2:0:0
2	18AT2020	Process Engineering for Spices and Plantation Crops	2:0:0
3	20AT2005	Waste and By-products Utilization	2:0:1
4	20AT2003	Remote Sensing and GIS Applications	2:0:1
5	18AT2023	Development of Processed Products	2:0:0
6	18AT2024	Farm Machinery Design and Production	2:0:0
7	18AT2026	Mechanics of Tillage and Traction	2:0:0
8	20AT2004	Human Engineering and Safety	2:0:1
9	18AT2044	Water Quality and Management Measures	2:0:0
10	18AT2045	Basics of MATLAB Programming	2:0:0
11	18AT2049	Applications of Solar and Wind Energy in Agriculture	3:0:0

List of Experiential Learning Program

Sl. No.	Course Code	Name of the Course	Credits
1	18AT2028	Drip and Sprinkler Irrigation-Design and Installation	0:0:10
2	18AT2029	Watershed Management-Concept and Strategies	0:0:10
3	18AT2030	Precision Farming in the Semi-Arid and Humid Tropical Zones	0:0:10
4	18AT2033	Agro Processing Industry Design and Management	0:0:10
5	18AT2046	Farm Mechanization – Field Study	0:0:10
6	18AT2047	Testing of Farm Machinery and Equipments	0:0:10
7	18AT2048	Value Addition of Indigenous Fruits and Vegetables	0:0:10

ABSTRACT

Semester wise distribution of courses for B.Tech. (Agri.) – 2020-2024 Batch

Semester	Number of Course	Credit Hours
1	9	19:1:7 (27)
2	8	17:2:5 (24)
3	9	17:2:5 (24)
4	9	14:2:6 (22)
5	8	12:0:10 (22)
6	7	12: 0:6 (18)
7	6	7: 0:18(25)
8	2	0:0:20 (20)

Total	58	98:7:76 (182)
--------------	-----------	----------------------

LIST OF NEW COURSES

Sl. No.	Course Code	Name of the Course	Credits
1	20AG1001	Introductory Biology	2 (1+1)
2	20AG1002	Introductory Agro-meteorology & Climate Change	2(1+1)
3	20AG1003	Fundamentals of Genetics	3(2+1)
4	20AG1004	Fundamentals of Plant Biochemistry and Biotechnology	3(2+1)
5	20AG1005	Introduction to Forestry	2 (1+1)
6	20AG1006	Fundamentals of Soil Science	3(2+1)
7	20AG1007	Fundamentals of Entomology	4(3+1)
8	20AG1008	Agricultural Microbiology	2(1+1)
9	20AG1009	Principles of Soil Science	3(2+1)
10	20AG1010	Human Values & Ethics (non gradial)	1(1+0)**
11	20AG1011	NCC/NSS	1(0+1)
12	20AG1012	Physical Education	1(0+1)
13	20AG2001	Rural Agricultural Work Experience (RAWE)and Agro Industrial Attachment (AIA)	20(0+20)
14	20AG2002	Experiential Learning Programme (ELP) (Module I and II)	20 (0+20)
15	20AG2003	Entrepreneurship Development and Business Communication	2 (1+1)
16	20AG2004	Communication Skills and Personality Development	2(1+1)
17	20AG2005	Practical Crop Production – I (<i>Kharif</i> crops)	2 (0+2)
18	20AG2006	Practical Crop Production –II (<i>Rabi</i> crops)	2 (0+2)
19	20AG2007	Geoinformatics and Nano-technology and Precision Farming	2 (1+1)
20	20AG2008	Fundamentals of Plant Breeding	3 (2+1)
21	20AG2009	Production Technology for Vegetables and Spices	2 (1+1)
22	20AG2010	Production Technology for Ornamental Crops, MAP and Landscaping	2(1+1)
23	20AG2011	Educational tour I	1(0+1)
24	20AG2012	Educational tour II	1(0+1)
25	20AG2013	Principles of Seed Technology	3(1+2)
26	20AG2014	Manures, Fertilizers and Soil Fertility Management	3 (2+1)
27	20AG2015	Fundamentals of Plant Pathology	4(3+1)
28	20AG2016	Diseases of Field and Horticultural Crops and their Management-II	3 (2+1)
29	20AG2017	Post-harvest Management and Value Addition of Fruits and Vegetables	2 (1+1)
30	20AG2018	Environmental Sciences and Disaster Management	3(2+1)
31	20HO1001	Plant Propagation and Nursery Management	2(1+1)
32	20HO1002	Weed Management in Horticultural Crops	2(1+1)
33	20HO1003	Fundamentals of Food Technology	2(1+1)
34	20HO1004	Principles of Landscape Architecture	2(1+1)
35	20HO1005	Fundamentals of Soil Science	2(1+1)
36	20HO1006	Water Management in Horticultural Crops	2(1+1)
37	20HO1007	Agro-meteorology and Climate Change	2 (1+1)
38	20HO1008	Economics and Marketing	3(2+1)
39	20HO1009	Elementary Plant Biochemistry	2(1+1)
40	20HO1010	Elementary Plant Biotechnology	2(1+1)

41	20HO1011	Introductory Crop Physiology	2(1+1)
42	20HO1012	Introductory Microbiology	2(1+1)
43	20HO1013	Fundamentals of Extension Education	2 (1+1)
44	20HO2001	Tropical and Subtropical Fruits	3(2+1)
45	20HO2002	Orchard and Estate Management	2(1+1)
46	20HO2003	Plantation Crops	3(2+1)
47	20HO2004	Temperate Fruit Crops	2(1+1)
48	20HO2005	Breeding of Fruits and Plantation Crops	3(2+1)
49	20HO2006	Tropical and Subtropical Vegetables	3(2+1)
50	20HO2007	Spices and Condiments	3(2+1)
51	20HO2008	Breeding of Vegetable, Tuber and Spice Crops	3 (2+1)
52	20HO2009	Temperate Vegetable Crops	2(1+1)
53	20HO2010	Potato and tuber crops	2 (1+1)
54	20HO2011	Postharvest Management of Horticultural Crops	3(2+1)
55	20HO2012	Processing of Horticultural Crops	3(1+2)
56	20HO2013	Ornamental Horticulture	2(1+1)
57	20HO2014	Medicinal and Aromatic crops	3 (2+1)
58	20HO2015	Soil Fertility and Nutrient Management	2(1+1)
59	20HO2016	Soil, Water and Plant Analysis	2(1+1)
60	20HO2017	Organic Farming	3 (2+1)
61	20HO2018	Horti-Business Management	2(2+0)
62	20HO2019	Rural Horticultural Work Experience (RHWE)	20 (0+20)
63	20AT2001	Sprinkler and Micro irrigation systems	2(1+1)
64	20AT2002	Engineering Properties of Agricultural Produce	2(1+1)
65	20AT2003	Remote Sensing and GIS Applications (Elective)	3(2+1)
66	20AT2004	Human Engineering and Safety (Elective)	3(2+1)
67	20AT2005	Waste and By-products Utilization (Elective)	3(2+1)
68	20AT2006	Introductory soil and water conservation Engineering	2(1+1)
69	20AT2007	Credit Seminar	1(0+1)