

**Course Structure (Semester-wise) for B. Tech. in Agricultural Engineering
with effect from Academic Year 2017-18**

Semester I			
S. No.	Title of the Course	Course No.	Credit Hour
1.	Engineering Mathematics-I	MTH 101	3(2+1)
2.	Engineering Physics	PHY 101	3(2+1)
3.	Engineering Chemistry	CHM 101	3(2+1)
4.	Principles of Soil Science	AG 101	3(2+1)
5.	Surveying and Levelling	CE 101	3(1+2)
6.	Engineering Mechanics	CE 102	3(2+1)
7.	Engineering Drawing	ME 101	2(0+2)
8.	Electrical Machines and Power Utilization	EE 101	3(2+1)
Total Credit Hours			23(13+10)

Semester II			
S. No.	Title of the Course	Course No.	Credit Hour
1.	Engineering Mathematics-II	MTH 151	3(2+1)
2.	Environmental Science and Disaster Management	HOR 151	3(2+1)
3.	Principles of Horticultural Crops and Plant Protection	HOR 152	2(1+1)
4.	Entrepreneurship Development and Business Management	AG 151	3(2+1)
5.	Principles of Agronomy	AG 152	3(2+1)
6.	Fluid Mechanics and Open Channel Hydraulics	CE 151	3(2+1)
7.	Workshop Technology and Practices	ME 151	3(1+2)
8.	Communication Skills and Personality Development	ENG 151	2(1+1)
Total Credit Hours			22(13+9)

Semester III			
S. No.	Title of the Course	Course No.	Credit Hour
1.	Soil and Water Conservation Engineering	SWC 201	2(1+1)
2.	Watershed Hydrology	SWC 202	3(2+1)
3.	Tractor and Automotive Engines	FMP 201	3(2+1)
4.	Fundamentals of Renewable Energy Sources	FMP 202	3(2+1)
5.	Web Designing and Internet Applications	CSE 201	2(1+1)
6.	Engineering Mathematics-III	MTH 201	3(2+1)
7.	Soil Mechanics	CE 201	2(1+1)
8.	Strength of Materials	CE 202	2(1+1)
9.	Machine Design	ME 201	2(2+0)
Total Credit Hours			22(14+8)

Semester IV			
S. No.	Title of the Course	Course No.	Credit Hour
1.	Building Construction and Cost Estimation	CE 251	2(2+0)
2.	Theory of Machines	ME 251	2(2+0)
3.	Heat and Mass Transfer	ME 252	2(2+0)
4.	Agricultural Structures and Environmental Control	PFE 251	3(2+1)
5.	Farm Machinery and Equipment-I	FMP 251	3(2+1)
6.	Renewable Power Sources	FMP 252	3(2+1)
7.	Irrigation Engineering	SWC 251	3(2+1)
8.	Sprinkler and Micro Irrigation Systems	SWC 252	2(1+1)
Total Credit Hours			20(15+5)

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

Semester V			
S. No.	Title of the Course	Course No.	Credit Hour
1.	Tractor Systems and Controls	FMP 301	3(2+1)
2.	Farm Machinery and Equipment-II	FMP 302	3(2+1)
3.	Tractor and Farm Machinery Operation and Maintenance	FMP 303	2(0+2)
4.	Engineering Properties of Agricultural Produce	PFE 301	2(1+1)
5.	Post Harvest Engineering of Cereals, Pulses and Oil Seeds	PFE 302	3(2+1)
6.	Dairy and Food Engineering	PFE 303	3(2+1)
7.	Groundwater, Wells and Pumps	SWC 301	3(2+1)
8.	Watershed Planning and Management	SWC 302	2(1+1)
9.	Auto CAD Applications	ME 301	2(0+2)
10.	*Skill Development Training-I (Student READY) Registration and Evaluation only	TRN 301	5(0+5)
Total Credit Hours			28(12+16)

Semester VI			
S. No.	Title of the Course	Course No.	Credit Hour
1.	Design of Structures	CE 351	2(1+1)
2.	Computer Programming and Data Structures	CSE 351	3(1+2)
3.	Thermodynamics, Refrigeration and Air Conditioning	ME 351	3(2+1)
4.	Post Harvest Engineering of Horticultural Crops	PFE 351	2(1+1)
5.	Drainage Engineering	SWC 351	2(1+1)
6.	Water Harvesting and Soil Conservation Structures	SWC 352	3(2+1)
7.	Bio-energy Systems: Design and Applications	FMP 351	3(2+1)
8.	Applied Electronics and Instrumentation	EE 351	3(2+1)
Total Credit Hours			21(12+9)

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

**VII Semester
Student READY (Rural and Entrepreneurship Awareness Development Yojana)**

Semester VII

S. No.	Title of the Course	Course No.	Credit Hour
1.	10- weeks Industrial Attachment /Internship (Student READY)	TRN 401	10(0+10)
2.	10- weeks Experiential Learning On campus (Student READY)	TRN 402	10(0+10)
3.	Skill Development Training-II (Student READY) Registration and Evaluation only	TRN 403	5(0+5)
4.	[#] Educational Tour (Registration only)	EDT 401	2 (0+2)
Total Credit Hours			27(0+27)

[#]Educational tour during winter/January break

**VIII Semester
Student READY (Rural and Entrepreneurship Awareness Development Yojana)**

Semester VIII

Title of the Course	Course No.	Credit Hour
Elective course	As per the course offered	3(2+1)
Elective course	As per the course offered	3(2+1)
Elective course	As per the course offered	3(2+1)
Project Planning and Report Writing (Student READY)	PRJ 499	10(0+10)
Total Credit Hours		19(6+13)

Grand Total = (23+22+22+20+28+21+27+19) = 182 Credit Hours

ELECTIVE COURSES			
S. No.	Title of the Course	Course No.	Credit Hour
1.	Floods and Control Measures	SWC 451	3 (2+1)
2.	Wasteland Development	SWC 452	3 (2+1)
3.	Information Technology for Land and Water Management	SWC 453	3(2+1)
4.	Remote Sensing and GIS Applications	SWC 454	3(2+1)
5.	Management of Canal Irrigation System	SWC 455	3(2+1)
6.	Minor Irrigation and Command Area Development	SWC 456	3(2+1)
7.	Precision Farming Techniques for Protected Cultivation	SWC 457	3(2+1)
8.	Water Quality and Management Measures	CE 451	3(2+1)
9.	Landscape Irrigation Design and Management	SWC 458	3(2+1)
10.	Plastic Applications in Agriculture	SWC 459	3(2+1)
11.	Mechanics of Tillage and Traction	FMP 451	3(2+1)
12.	Farm Machinery Design and Production	FMP 452	3(2+1)
13.	Human Engineering and Safety	FMP 453	3(2+1)
14.	Tractor Design and Testing	FMP 454	3(2+1)
15.	Hydraulic Drives and Controls	FMP 455	3(2+1)
16.	Precision Agriculture and System Management	FMP 456	3(2+1)
17.	Food Quality and Control	PFE 451	3(2+1)
18.	Food Plant Design and Management	PFE 452	3(2+1)
19.	Food Packaging Technology	PFE 453	3(2+1)
20.	Development of Processed Products	PFE 454	3(2+1)
21.	Process Equipment Design	PFE 455	3(2+1)
22.	Photovoltaic Technology and Systems	EE 451	3(2+1)
23.	Waste and By-products Utilization	PFE 456	3(2+1)
24.	Artificial Intelligence	CSE 451	3(3+0)
25.	Mechatronics	ME 451	3(2+1)

The Faculty will have option to offer 3 (three) need based elective courses equivalent to 9 Credit Hours as per the need of the state/industries/other stake holders under the proposed list of Elective Courses.