

Scheme of Instructions and Examinations

(For Students admitted from the Academic Year 2019-20 and onwards)

Semester I											
Course Code	Course Name	Category	Instructional Hours				Assessment				Credit
			Contact Periods	T	P	TU	Hours of Exam. (ESE)	CIA	ESE	Total	
Induction Programme											
B19ENT101	Functional English	HS	3	3	0	0	3	40	60	100	3
B19MAT101	Matrices and Differential Calculus	BS	4	3	0	1	3	40	60	100	4
B19CHT101	Engineering Chemistry	BS	3	3	0	0	3	40	60	100	3
B19CST102	Problem Solving and Programming Using C	ES	3	3	0	0	3	40	60	100	3
B19MET101	Engineering Graphics	ES	6	2	4	0	3	40	60	100	4
B19CHP101	Chemistry Laboratory	BS	4	0	4	0	3	40	60	100	2
B19CSP102	Problem Solving and Programming Using C Laboratory	ES	4	0	4	0	3	40	60	100	2
B19MCP101	Life Skills	MC	2	0	2	0	-	100	-	100	NC
Total Contact Hours / Week			29	14	14	1	Total Credits				21

Semester II											
Course Code	Course Name	Category	Instructional Hours				Assessment				Credit
			Contact Periods	T	P	TU	Hours of Exam. (ESE)	CIA	ESE	Total	
B19ENT201	Professional English	HS	3	3	0	0	3	40	60	100	3
B19MAT201	Integral Calculus and Complex Analysis	BS	4	3	0	1	3	40	60	100	4
B19PHT101	Engineering Physics	BS	3	3	0	0	3	40	60	100	3
B19MET201	Engineering Mechanics	ES	3	2	0	1	3	40	60	100	3
B19AGT201	Principles and Practices of Crop Production	PC	3	3	0	0	3	40	60	100	3
B19PHP101	Physics Laboratory	BS	4	0	4	0	3	40	60	100	2
B19AGP201	Crop Husbandry Laboratory	PC	4	0	4	0	3	40	60	100	2
B19MEP201	Basic Workshop Practices Laboratory	ES	4	0	4	0	3	40	60	100	2
B19CEP201	Soft Skills - I	CEC	2	0	2	0	-	100	-	100	1
Total Contact Hours / Week			30	14	14	2	Total Credits				23



BoS Chairman

Semester III											
Course Code	Course Name	Category	Instructional Hours				Assessment				Credit
			Contact Periods	T	P	TU	Hours of Exam. (ESE)	CIA	ESE	Total	
B19MAT303	Transforms and Partial Differential Equations	BS	4	3	0	1	3	40	60	100	4
B19AGT301	Soil Physics and Mechanics	PC	3	3	0	0	3	40	60	100	3
B19AGT302	Theory of Machines	PC	3	3	0	0	3	40	60	100	3
B19AGT303	Surveying and Levelling	ES	3	3	0	0	3	40	60	100	3
B19EET305	Basic Electrical and Electronics Engineering	ES	3	3	0	0	3	40	60	100	3
B19MCT302	Indian Constitution	MC	3	3	0	0	-	100	-	100	NC
B19AGP301	Surveying and Levelling Laboratory	ES	4	0	4	0	3	40	60	100	2
B19AGP302	Soil Physics Laboratory	PC	4	0	4	0	3	40	60	100	2
B19CEP301	Soft Skill - II	CEC	2	0	2	0	-	100	-	100	1
B19CEP302	Professional Certificate Course - I	CEC	2	0	2	0	-	100	-	100	1
Total Contact Hours/Week			31	18	12	1	Total Credits				22
In-plant training minimum one week (Review will be conducted in the first week of Semester IV and it will be included in Semester IV mark statement)											

Semester IV											
Course Code	Course Name	Category	Instructional Hours				Assessment				Credit
			Contact Periods	T	P	TU	Hours of Exam. (ESE)	CIA	ESE	Total	
B19MAT403	Probability and Statistics	BS	4	3	0	1	3	40	60	100	4
B19AGT401	Unit Operations in Agricultural Processing	PC	3	3	0	0	3	40	60	100	3
B19AGT402	Fluid Mechanics and Hydraulics	PC	3	2	0	1	3	40	60	100	3
B19AGT403	Thermodynamics and Heat Transfer	ES	4	3	0	1	3	40	60	100	4
B19AGT404	Strength of Materials	ES	3	2	0	1	3	40	60	100	3
B19MCT301	Environmental Science	MC	3	3	0	0	-	100	-	100	NC
B19AGP401	Fluid Mechanics Laboratory	PC	4	0	4	0	3	40	60	100	2
B19AGP402	Strength of Materials Laboratory	ES	4	0	4	0	3	40	60	100	2
B19CEP401	Career Ability Course - I	CEC	2	0	2	0	-	100	-	100	NC
B19CEP402	In-plant training	CEC	-	-	-	-	-	-	-	-	NC
B19CEP403	Online Certificate Course	CEC	-	-	-	-	-	-	-	-	NC
Total Contact Hours/Week			30	16	10	4	Total Credits				21
Summer Internship - Duration 15 days (Review will be conducted in first week of Semester V and its credit will be included in Semester V)											
Online Certificate Courses (like NPTEL/other Online Courses) has to be completed within second year (NC)											


 BoS Chairman

Semester V											
Course Code	Course Name	Category	Instructional Hours				Assessment				Credit
			Contact Periods	T	P	TU	Hours of Exam. (ESE)	CIA	ESE	Total	
B19AGT501	Farm Tractors	PC	3	3	0	0	3	40	60	100	3
B19AGT502	Farm Machinery and Equipment	PC	3	3	0	0	3	40	60	100	3
B19AGT503	Post Harvest Technology	PC	3	3	0	0	3	40	60	100	3
	Professional Elective - I	PE	3	3	0	0	3	40	60	100	3
	Open Elective - I	OE	3	3	0	0	3	40	60	100	3
B19AGP501	Post Harvest Engineering Laboratory	PC	4	0	4	0	3	40	60	100	2
B19AGP502	Operation & Maintenance of Farm Machinery Laboratory	PC	4	0	4	0	3	40	60	100	2
B19AGP503	Mini Project	PW	4	0	4	0	-	100	-	100	2
B19CEP501	Career Ability Course - II	CEC	2	0	2	0	-	100	-	100	NC
B19CEP502	Professional Certificate Course-II	CEC	2	0	2	0	-	100	-	100	1
B19CEP503	Summer Internship	CEC	-	-	-	-	-	100	-	100	1
B19CEP504	Rural Agricultural Engineering Work Experience	CEC	-	-	-	-	-	100	-	100	1
Total Contact Hours/Week			31	15	16	0	Total Credits				24

Semester VI											
Course Code	Course Name	Category	Instructional Hours				Assessment				Credit
			Contact Periods	T	P	TU	Hours of Exam. (ESE)	CIA	ESE	Total	
B19AGT601	Engineering Materials, Construction, Estimation and Costing	PC	3	3	0	0	3	40	60	100	3
B19AGT602	Irrigation and Drainage Engineering	PC	3	3	0	0	3	40	60	100	3
B19AGT603	Design of Basic Machine Elements	PC	3	2	0	1	3	40	60	100	3
	Professional Elective – II	PE	3	3	0	0	3	40	60	100	3
	Professional Elective – III	PE	3	3	0	0	3	40	60	100	3
	Open Elective – II	OE	3	3	0	0	3	40	60	100	3
B19AGP601	Irrigation Field Laboratory	PC	4	0	4	0	3	40	60	100	2
B19AGP602	ICT Laboratory for Agricultural Engineers	PC	4	0	4	0	3	40	60	100	2
B19AGP603	Food Process Engineering Laboratory	PC	4	0	4	0	3	40	60	100	2
B19CEP601	Career Ability Course-III	CEC	2	0	2	0	-	100	-	100	NC
B19CEP602	Online Certificate Course	CEC	-	-	-	-	-	-	-	-	NC
Total Contact Hours/Week			32	17	14	1	Total Credits				24
Online Certificate Courses (like NPTEL) has to be completed within third year (NC) – 15 days											


BoS Chairman

Semester VII											
Course Code	Course Name	Category	Instructional Hours				Assessment				Credit
			Contact Periods	T	P	TU	Hours of Exam. (ESE)	CIA	ESE	Total	
B19AGT701	Soil and Water Conservation Engineering	PC	3	3	0	0	3	40	60	100	3
B19AGT702	Solar, Wind and Bio-Energy Engineering	PC	3	2	0	1	3	40	60	100	3
	Professional Elective – IV	PE	3	3	0	0	3	40	60	100	3
	Professional Elective – V	PE	3	3	0	0	3	40	60	100	3
	Open elective –III	OE	3	3	0	0	3	40	60	100	3
B19AGP701	Design and Drawing of Farm Structures	PC	5	0	4	1	3	40	60	100	3
B19AGP702	GIS Laboratory for Agricultural Engineers	PC	4	0	4	0	3	40	60	100	2
B19AGP703	Renewable Energy Laboratory	PC	4	0	4	0	3	40	60	100	2
Total Contact Hours/Week			28	14	12	2	Total Credits				22

Semester VIII											
Course Code	Course Name	Category	Instructional Hours				Assessment				Credit
			Contact Periods	T	P	TU	Hours of Exam. (ESE)	CIA	ESE	Total	
	Professional Elective – VI	PE	3	3	0	0	3	40	60	100	3
	Open Elective-IV	OE	3	3	0	0	3	40	60	100	3
B19AGP801	Project Work	PW	20	0	20	0	3	40	60	100	10
Total Contact Hours/Week			26	6	20	0	Total Credits				16


BoS Chairman

HUMANITIES AND SOCIALSCIENCES (HS)

Course Code	Course Name	Category	Instructional Hours				Assessment				Credit
			Contact Periods	T	P	TU	Hours of Exam. (ESE)	CIA	ESE	Total	
B19ENT101	Functional English	HS	3	3	0	0	3	40	60	100	3
B19ENT201	Professional English	HS	3	3	0	0	3	40	60	100	3

BASIC SCIENCES (BS)

Course Code	Course Name	Category	Instructional Hours				Assessment				Credit
			Contact Periods	T	P	TU	Hours of Exam. (ESE)	CIA	ESE	Total	
B19MAT101	Matrices and Differential Calculus	BS	4	3	0	1	3	40	60	100	4
B19CHT101	Engineering Chemistry	BS	3	3	0	0	3	40	60	100	3
B19CHP101	Chemistry Laboratory	BS	4	0	4	0	3	40	60	100	2
B19MAT201	Integral Calculus and Complex Analysis	BS	4	3	0	1	4	40	60	100	4
B19PHT101	Engineering Physics	BS	3	3	0	0	3	40	60	100	3
B19PHP101	Physics Laboratory	BS	4	0	4	0	3	40	60	100	2
B19MAT303	Transforms and Partial Differential Equations	BS	4	3	0	1	3	40	60	100	4
B19MAT403	Probability and Statistics	BS	4	3	0	1	3	40	60	100	4



BoS Chairman

ENGINEERING SCIENCES (ES)

Course Code	Course Name	Category	Instructional Hours				Assessment				Credit
			Contact Periods	T	P	TU	Hours of Exam. (ESE)	CIA	ESE	Total	
B19CST102	Problem Solving and Programming Using C	ES	3	3	0	0	3	40	60	100	3
B19MET101	Engineering Graphics	ES	6	2	4	0	3	40	60	100	4
B19CSP102	Problem Solving and Programming Using C Laboratory	ES	4	0	4	0	3	40	60	100	2
B19MET201	Engineering Mechanics	ES	3	2	0	1	3	40	60	100	3
B19MEP201	Workshop Practices Laboratory	ES	4	0	4	0	3	40	60	100	2
B19AGT303	Surveying and Levelling	ES	3	3	0	0	3	40	60	100	3
B19EET305	Basics of Electrical and Electronics Engineering	ES	3	3	0	0	3	40	60	100	3
B19AGP301	Surveying and Levelling Laboratory	ES	4	0	4	0	3	40	60	100	2
B19AGT403	Strength of Materials	ES	3	2	0	1	3	40	60	100	3
B19AGP401	Strength of Materials Laboratory	ES	4	0	4	0	3	40	60	100	2
B19AGT403	Thermodynamics and Heat Transfer	ES	3	3	0	1	3	40	60	100	4

PROFESSIONAL CORE (PC)

Course Code	Course Name	Category	Instructional Hours				Assessment				Credit
			Contact Periods	T	P	TU	Hours of Exam. (ESE)	CIA	ESE	Total	
B19AGT201	Principles and Practices of Crop Production	PC	3	3	0	0	3	40	60	100	3
B19AGP201	Crop Husbandry Laboratory	PC	4	0	4	0	3	40	60	100	2
B19AGT301	Soil Physics and Mechanics	PC	3	3	0	0	3	40	60	100	3
B19AGT302	Theory of Machines	PC	3	3	0	0	3	40	60	100	3


BoS Chairman

B19AGP302	Soil Physics Laboratory	PC	4	0	4	0	3	40	60	100	2
B19AGT401	Unit Operations in Agricultural Processing	PC	3	3	0	0	3	40	60	100	3
B19AGT402	Fluid Mechanics and Hydraulics	PC	3	2	0	1	3	40	60	100	3
B19AGP401	Fluid Mechanics Laboratory	PC	4	0	4	0	3	40	60	100	2
B19AGT501	Farm Tractors	PC	3	3	0	0	3	40	60	100	3
B19AGT502	Farm Machinery and Equipment	PC	3	3	0	0	3	40	60	100	3
B19AGT504	Post Harvest Technology	PC	3	3	0	0	3	40	60	100	3
B19AGP501	Post Harvest Engineering Laboratory	PC	4	0	4	0	3	40	60	100	2
B19AGP502	Operation and Maintenance of Farm Machinery Lab	PC	4	0	4	0	3	40	60	100	2
B19AGT601	Engineering Materials, Construction, Estimation and Costing	PC	3	3	0	0	3	40	60	100	3
B19AGT602	Irrigation and Drainage Engineering	PC	3	3	0	0	3	40	60	100	3
B19AGT603	Design of Basic Machine Elements	PC	3	2	0	1	3	40	60	100	3
B19AGP601	Irrigation Field Laboratory	PC	4	0	4	0	3	40	60	100	2
B19AGP602	ICT Laboratory for Agricultural Engineers	PC	4	0	4	0	3	40	60	100	2
B19AGP603	Food Process Engineering Laboratory	PC	4	0	4	0	3	40	60	100	2
B19AGT701	Soil and Water Conservation Engineering	PC	3	3	0	0	3	40	60	100	3
B19AGT702	Design and Drawing of Farm Structures	PC	4	0	4	0	3	40	60	100	3
B19AGT703	Solar, Wind and Bio Energy Engineering	PC	3	2	0	1	3	40	60	100	3
B19AGP701	GIS Laboratory for Agricultural Engineers	PC	4	0	4	0	3	40	60	100	2
B19AGP702	Renewable Energy Laboratory	PC	4	0	4	0	3	40	60	100	2

PROFESSIONAL ELECTIVES (PE)**Semester – V****Elective – I**

Course Code	Course Name	Category	Instructional Hours				Assessment				Credit
			Contact Periods	T	P	TU	Hours of Exam. (ESE)	CIA	ESE	Total	
B19AGE501	Hydrology and Water Resources Engineering	PE	3	3	0	0	3	40	60	100	3
B19AGE502	Systems Analysis and Soft Computing in Agricultural Engineering	PE	3	3	0	0	3	40	60	100	3
B19AGE503	IT in Agricultural Systems	PE	3	3	0	0	3	40	60	100	3
B19AGE504	Agricultural Waste Management	PE	3	3	0	0	3	40	60	100	3

Semester - VI**Elective – II**

Course Code	Course Name	Category	Instructional Hours				Assessment				Credit
			Contact Periods	T	P	TU	Hours of Exam. (ESE)	CIA	ESE	Total	
B19AGE601	Food and Dairy Engineering	PE	3	3	0	0	3	40	60	100	3
B19AGE602	Agricultural Business Management	PE	3	3	0	0	3	40	60	100	3
B19AGE603	Agricultural Economics and Farm Management	PE	3	3	0	0	3	40	60	100	3
B19AGE604	Ergonomics and safety in Agricultural Engineering	PE	3	3	0	0	3	40	60	100	3



BoS Chairman

Semester – VI

Electives – III

Course Code	Course Name	Category	Instructional Hours				Assessment				Credit
			Contact Periods	T	P	TU	Hours of Exam. (ESE)	CIA	ESE	Total	
B19AGE605	Sustainable Agriculture and Food Security	PE	3	3	0	0	3	40	60	100	3
B19AGE606	Agricultural Extension	PE	3	3	0	0	3	40	60	100	3
B19AGE607	Disaster management	PE	3	3	0	0	3	40	60	100	3
B19AGE608	Heat and Mass Transfer for Agriculture Engineering	PE	3	3	0	0	3	40	60	100	3

Semester - VII

Electives – IV

Course Code	Course Name	Category	Instructional Hours				Assessment				Credit
			Contact Periods	T	P	TU	Hours of Exam. (ESE)	CIA	ESE	Total	
B19AGE701	Process Engineering of Fruits and Vegetables	PE	3	3	0	0	3	40	60	100	3
B19AGE702	Climate Change and Adaptation	PE	3	3	0	0	3	40	60	100	3
B19AGE703	Intellectual Property Rights and Ethics	PE	3	3	0	0	3	40	60	100	3
B19AGE704	Remote Sensing and Geographical Information System	PE	3	3	0	0	3	40	60	100	3



BoS Chairman

Semester - VII**Electives - V**

Course Code	Course Name	Category	Instructional Hours				Assessment				Credit
			Contact Periods	T	P	TU	Hours of Exam. (ESE)	CIA	ESE	Total	
B19AGE705	Storage and Packaging Technology	PE	3	3	0	0	3	40	60	100	3
B19AGE706	Protected Cultivation	PE	3	3	0	0	3	40	60	100	3
B19AGE707	Refrigeration and Air Conditioning	PE	3	3	0	0	3	40	60	100	3
B19AGE708	On Farm Water Management	PE	3	3	0	0	3	40	60	100	3

Semester – VIII**Electives – VI**

Course Code	Course Name	Category	Instructional Hours				Assessment				Credit
			Contact Periods	T	P	TU	Hours of Exam. (ESE)	CIA	ESE	Total	
B19AGE801	Micro Irrigation	PE	3	3	0	0	3	40	60	100	3
B19AGE802	Watershed Management	PE	3	3	0	0	3	40	60	100	3
B19AGE803	Tillage Mechanics and Traction	PE	3	3	0	0	3	40	60	100	3
B19AGE804	Special Farm Equipments	PE	3	3	0	0	3	40	60	100	3

OPEN ELECTIVES (OE)**Semester – V****Elective – I**

Course Code	Course Name	Category	Instructional Hours				Assessment				Credit
			Contact Periods	T	P	TU	Hours of Exam. (ESE)	CIA	ESE	Total	
B19AEO501	Basics of Flight Mechanics	OE	3	3	0	0	3	40	60	100	3
B19BMO501	Introduction to Medical Physics	OE	3	0	3	0	3	40	60	100	3
B19BTO501	Food Processing and Preservation	OE	3	0	3	0	3	40	60	100	3
B19CSO501	Fundamentals of Database Management System	OE	3	3	0	0	3	40	60	100	3
B19ECO501	Logic and Distributed control system	OE	3	3	0	0	3	40	60	100	3
B19EEO501	Hybrid Electric Vehicles	OE	3	3	0	0	3	40	60	100	3
B19MEO501	Robotics	OE	3	3	0	0	3	40	60	100	3

Semester – VI**Elective – II**

Course Code	Course Name	Category	Instructional Hours				Assessment				Credit
			Contact Periods	T	P	TU	Hours of Exam. (ESE)	CIA	ESE	Total	
B19AEO601	Aircraft Electrical and Electronic Systems	OE	3	3	0	0	3	40	60	100	3
B19BMO601	Introduction to Biomedical Engineering	OE	3	3	0	0	3	40	60	100	3
B19BTO601	Basic Bioinformatics	OE	3	0	3	0	3	40	60	100	3
B19CSO601	E- Commerce	OE	3	3	0	0	3	40	60	100	3
B19ECO601	Geographic Information System	OE	3	3	0	0	3	40	60	100	3
B19EEO601	Power Electronics	OE	3	3	0	0	3	40	60	100	3
B19MEO601	Entrepreneurship Development	OE	3	0	3	0	3	40	60	100	3


BoS Chairman

Semester – VII

Elective – III

Course Code	Course Name	Category	Instructional Hours				Assessment				Credit
			Contact Periods	T	P	TU	Hours of Exam. (ESE)	CIA	ESE	Total	
B19AEO701	Basics of Rocket and Missiles	OE	3	3	0	0	3	40	60	100	3
B19BMO701	Telemedicine	OE	3	3	0	0	3	40	60	100	3
B19BTO701	Fundamentals of Nanobiotechnology	OE	3	0	3	0	3	40	60	100	3
B19CSO701	Fundamentals of Cloud Computing	OE	3	3	0	0	3	40	60	100	3
B19ECO701	Telecommunication Network Management	OE	3	3	0	0	3	40	60	100	3
B19EEO701	Utilization and Conservation of Electrical Energy	OE	3	3	0	0	3	40	60	100	3
B19MEO701	3D Printing and Design	OE	3	0	3	0	3	40	60	100	3

Semester – VIII

Elective – IV

Course Code	Course Name	Category	Instructional Hours				Assessment				Credit
			Contact Periods	T	P	TU	Hours of Exam. (ESE)	CIA	ESE	Total	
B19AEO801	UAV System Design	OE	3	3	0	0	3	40	60	100	3
B19BMO801	Medical Imaging Techniques	OE	3	3	0	0	3	40	60	100	3
B19BTO801	Bioreactor Design	OE	3	0	3	0	3	40	60	100	3
B19CSO801	Internet of Things	OE	3	3	0	0	3	40	60	100	3
B19ECO801	Fundamentals of Planetary Remote Sensing	OE	3	3	0	0	3	40	60	100	3
B19EEO801	PLC and SCADA	OE	3	3	0	0	3	40	60	100	3
B19MEO801	Lean Six Sigma	OE	3	0	3	0	3	40	60	100	3


BoS Chairman

PROJECT WORK (PW)

Course Code	Course Name	Category	Instructional Hours				Assessment				Credit
			Contact Periods	T	P	TU	Hours of Exam. (ESE)	CIA	ESE	Total	
B19AGP503	Mini Project	PW	4	0	4	0	-	100	-	100	2
B19AGP801	Project Work	PW	20	0	20	0	3	40	60	100	10

CAREER ENHANCEMENT COURSE (CEC)

Course Code	Course Name	Category	Instructional Hours				Assessment				Credit
			Contact Periods	T	P	TU	Hours of Exam. (ESE)	CIA	ESE	Total	
B19CEP201	Soft Skills - I	CEC	2	0	2	0	-	100	-	100	1
B19CEP301	Soft Skills - II	CEC	2	0	2	0	-	100	-	100	1
B19CEP302	Professional Certificate Course-I	CEC	2	0	2	0	-	100	-	100	1
B19CEP401	Career Ability Course - I	CEC	2	0	2	0	-	100	-	100	NC
B19CEP402	In plant Training / study Tour	CEC	-	-	-	-	-	-	-	-	NC
B19CEP403	Online Certificate Courses - I	CEC	-	-	-	-	-	-	-	-	NC
B19CEP501	Career Ability Course - II	CEC	2	0	2	0	-	100	-	100	NC
B19CEP502	Professional Certificate Course-II	CEC	2	0	2	0	-	100	-	100	1
B19CEP503	Summer Internship	CEC	-	-	-	-	-	-	-	-	1
B19CEP601	Career Ability Course - III	CEC	2	0	2	0	-	100	-	100	NC
B19CEP504	Rural Agricultural Engineering Work Experience	CEC	-	-	-	-	-	100	-	100	1

MANDATORY COURSE (MC)

Course Code	Course Name	Category	Instructional Hours				Assessment				Credit
			Contact Periods	T	P	TU	Hours of Exam. (ESE)	CIA	ESE	Total	
B19MCP101	Life Skills	MC	2	0	2	0	-	100	-	100	NC
B19MCT301	Environmental Sciences	MC	3	3	0	0	-	100	-	100	NC
B19MCT302	Indian Constitution	MC	3	3	0	0	-	100	-	100	NC


BoS Chairman